AMYRIS, INC.
Form 10-K
April 17, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2017

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from ____ to ____

Commission File Number: 001-34885

AMYRIS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**55-0856151**

(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

5885 Hollis Street, Suite 100, Emeryville, California 94608

(Address of principal executive offices and Zip Code)

(510) 450-0761

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Common Stock, $0.0001 par value per share	**The NASDAQ Stock Market LLC**
(Title of each class)	(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant’s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of “large accelerated filer”, “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one.)

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the registrant’s common stock held by non-affiliates of the registrant as of June 30, 2017, the last business day of the registrant's most recently completed second fiscal quarter, was $50.9 million based upon the closing price of the registrant’s common stock reported for such date on the NASDAQ Global Select Market.

Number of shares of the registrant’s common stock outstanding as of April 16, 2018: 49,694,705

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s proxy statement related to its 2018 Annual Meeting of Stockholders to be filed within 120 days after the registrant’s fiscal year end are incorporated by reference into Part III of this Annual Report on Form 10-K. Except as expressly incorporated by reference herein, the registrant’s proxy statement related to its 2018 Annual Meeting of Stockholders shall not be deemed to be part of this report.

AMYRIS, INC.

FORM 10-K

FOR THE YEAR ENDED DECEMBER 31, 2017

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Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements contained in this Annual Report on Form 10-K other than statements of historical fact, including any projections of financing needs, revenue, expenses, earnings or losses from operations, or other financial items; any statements of the plans, strategies and objectives of management for future operations; any statements concerning product research, development and commercialization plans and timelines; any statements regarding expected production capacities, volumes and costs; any statements regarding anticipated benefits of our products and expectations for commercial relationships; any other statements of expectation or belief; and any statements of assumptions underlying any of the foregoing, are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in Part I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Annual Report on Form 10-K may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements.

Unless expressly indicated or the context requires otherwise, the terms "Amyris," the "Company," "we," "us," and "our" in this Annual Report on Form 10-K refer to Amyris, Inc., a Delaware corporation, and, where appropriate, its consolidated entities.

PART I

ITEM 1. BUSINESS

Overview

Amyris, Inc. (the Company or Amyris) is a leading industrial biotechnology company that applies its technology platform to engineer, manufacture and sell high performance, natural, sustainably sourced products into the Health & Wellness, Clean Skincare, and Flavors & Fragrances markets. Our proven technology platform enables us to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into large volume, high-value ingredients. Our biotechnology platform and industrial fermentation process replace existing complex and expensive manufacturing processes. We have successfully used our technology to develop and produce five distinct molecules at commercial volumes.

We believe that industrial synthetic biology represents a third industrial revolution, bringing together biology and engineering to generate new, more sustainable materials to meet the growing global demand for bio-based replacements for petroleum-based and traditional animal- or plant-derived ingredients. We continue to build demand for our current portfolio of products through an extensive sales network provided by our collaboration partners that represent the world's leading companies for our target market sectors. We also have a small group of direct sales and distributors who support our Clean Skincare market. With our partnership model, our partners invest in the development of each molecule to bring it from the lab to commercial scale and use their extensive sales force to sell our ingredients and formulations to their customers as part of their core business. We capture long-term revenue both through the production and sale of the molecule to our partners and through royalty revenues (previously referred to as value share) from our partners' product sales to their customers.

We were founded in 2003 in the San Francisco Bay area by a group of scientists from the University of California, Berkeley. Our first major milestone came in 2005 when, through a grant from the Bill & Melinda Gates Foundation, we developed technology capable of creating microbial strains that produce artemisinic acid, which is a precursor of artemisinin, an effective anti-malarial drug. In 2008, we granted royalty-free licenses to allow Sanofi-Aventis to produce artemisinic acid using our technology. Building on our success with artemisinic acid, in 2007 we began applying our technology platform to develop, manufacture and sell sustainable alternatives to a broad range of markets.

We focused our initial development efforts primarily on the production of Biofene®, our brand of renewable farnesene, a long-chain, branched hydrocarbon molecule that we manufacture through fermentation using engineered microbes. Our farnesene derivatives are sold in hundreds of products as nutraceuticals, skincare products, fragrances, solvents, polymers, and lubricant ingredients. The commercialization of farnesene pushed us to create a more cost

efficient, faster and accurate development process in the lab and drive manufacturing costs down. This investment has enabled our technology platform to rapidly develop microbial strains and commercialize target molecules. In 2014, we began manufacturing additional molecules for the Flavors & Fragrances industry; in 2015 we began investing to expand our capabilities to other small molecule chemical classes beyond terpenes via our collaboration with the Defense Advanced Research Projects Agency (DARPA), and in 2016 we expanded into proteins.

We have invested over $500 million in infrastructure and technology to create microbes that produce molecules from sugar or other feedstocks at commercial scale. This platform has been used to design, build, optimize, and upscale strains producing five distinct molecules, leading to more than 15 commercial ingredients used in over 600 consumer products. Our time to market for molecules has decreased from seven years to less than a year for our most recent molecule, mainly due to our ability to leverage the technology platform we have built.

Our technology platform has been in active use since 2008 and has been integrated with our commercial production since 2011, creating an organism development process that we believe makes us an industry leader in the successful scale-up and commercialization of biotech-produced ingredients. The key performance characteristics of our platform that we believe differentiate us include our proprietary computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. Having this fully integrated with our large scale manufacturing process and capability enables us to always engineer with the end specification and requirements guiding our technology. Our state-of-the-art infrastructure includes industry-leading strain engineering and lab automation located in Emeryville, California, pilot scale production facilities in Emeryville, California and Campinas, Brazil, a demonstration-scale facility in Campinas, Brazil and a commercial-scale production facility in Leland, North Carolina, which is owned and operated by our Aprinnova joint venture to convert our Biofene into squalane and other final products.

We are able to use a wide variety of feedstocks for production, but have focused on accessing Brazilian sugarcane for our large-scale production because of its renewability, low cost and relative price stability. We have also successfully used other feedstocks such as sugar beets, corn dextrose, sweet sorghum and cellulosic sugars at various manufacturing facilities.

Several years ago, we made the strategic decision to transition our business model from collaborating and commercializing molecules in low margin commodity markets to higher margin specialty markets. We began the transition by first commercializing and supplying farnesene-derived squalene as a cosmetic ingredient sold to formulators and distributors. We also entered into collaboration and supply agreements for the development and commercialization of molecules within the Flavors & Fragrances and Cosmetic Ingredients where we utilize our strain generation technology to develop molecules that meet our customers' rigorous specifications.

During this transition, we solidified the business model of partnering with our customers to create sustainable, high performing, low-cost molecules that replace an ingredient in their supply chain, commercially scale and manufacture those molecules, and share in the profits earned by our customers once our customer sells its product into these specialty markets. These three steps constitute our collaboration revenues, renewable product revenues, and royalty revenues (previously referred to as value share revenues).

During 2017, we completed several development agreements with DSM and others for new products such as Vitamin A, a human nutrition molecule and others. We plan to bring two to three new molecules a year to commercial production.

In the first half of 2017, management made the decision to monetize the use for one of our lower margin molecules, farnesene, in certain fields of use (e.g., the human and animal health and nutrition field) while retaining any associated royalties. We began discussions with our partners and ultimately made the decision to license farnesene to DSM for use in these fields, which we announced in November 2017. During the discussions with DSM, management also made the decision to sell to DSM our manufacturing facility, Brotas 1, which we completed on December 28, 2017.

Brotas 1 was built to batch manufacture one commodity product at a time (originally for high-volume production of biofuels, a business the Company has exited), which is an inefficient manufacturing process that is not suited for the high margin specialty markets in which we operate today. We currently manufacture five specialty products and will be increasing the number of specialty products we manufacture by two to three products a year. The inefficiencies we experienced included having to idle the facility for two weeks at a time to prepare for the next product batch manufacture. These inefficiencies caused our cost of goods sold to be significantly higher. With the sale of Brotas 1, we expect that our gross margins will markedly improve from the reduction in manufacturing costs caused by these inefficiencies. Additionally, we currently are constructing our Brotas 2 facility, which will allow for the manufacture of five products concurrently and over 10 different products annually. Concurrent with the sale of Brotas 1, we contracted with DSM for the use of Brotas 1 to manufacture products for us to fulfill our product supply commitments to our customers until Brotas 2 is completed in 2019. In addition, in 2019, we plan to resume construction of a

production facility in Pradópolis, Brazil that we partially built prior to 2013. This facility would support production of our alternative sweetener products.

As discussed above, on December 28, 2017, we completed the sale of Amyris Brasil, which operated our Brotas 1 production facility, to DSM and concurrently entered into a series of commercial agreements and a credit agreement with DSM. At closing, we received $33.0 million in cash for the capital stock of Amyris Brasil, which is subject to certain post-closing working capital adjustments and reimbursements from DSM contingent on DSM's utilization of certain Brazilian tax benefits it acquired with its purchase of Amyris Brasil. We used $12.6 million of the cash proceeds received to repay certain indebtedness of Amyris Brasil. The total fair value of the consideration in connection with the sales agreement for Amyris Brasil was $56.9 million and resulted in a pretax gain of $5.7 million from continuing operations.

Concurrent with the sale of Amyris Brasil, we entered into a series of commercial agreements with DSM including (i) a license agreement to DSM of its farnesene product for DSM to use in the Vitamin E, lubricant, and Flavors & Fragrances specialty markets; (ii) a value share agreement that DSM will pay specified royalties representing a portion of the profit on the sale of Vitamin E produced from farnesene under the Nenter Supply Agreement assigned to DSM; (iii) a performance agreement to perform research and development to optimize farnesene for production and sale of farnesene products; and (iv) a transition services agreement where we provide finance, legal, logistics, and human resource services to support the Brotas 1 facility under DSM ownership for a six-month period with a DSM option to extend for six additional months. At closing, DSM paid to us a nonrefundable license fee of $27.5 million and a nonrefundable minimum royalty revenue payment (previously referred to as value share) of $15.0 million. DSM will also pay the Company nonrefundable minimum royalty amounts in 2018 and 2019. The future nonrefundable minimum annual royalty payments were determined to be fixed and determinable with a fair value of $17.8 million, and were included as part of the total arrangement consideration subject to allocation of this overall multiple-element divestiture transaction. See Note 10, “Significant Revenue Agreements”, for a full listing and details of agreements entered into with DSM. Additionally, we entered into a $25.0 million credit agreement with DSM that we used to repay all outstanding amounts under the Guanfu Note (see Note 4, “Debt”).

Technology

We have developed innovative microbial engineering and screening technologies that allow us to transform the way microbes metabolize sugars. Specifically, we engineer microbes, such as yeast, and use them as catalysts to convert sugar, through fermentation, into high-value molecules. In 2015, we were awarded an investment by The Defense Advanced Research Projects Agency (DARPA) to expand the capabilities of our technology platform beyond terpenoids. The investment has resulted in us developing an integrated platform with artificial intelligence that will speed up the development and commercialization of small molecules across 15 different chemical classes. We have also developed our technology to be able to produce large molecules, such as proteins.

We devote substantial resources to our research and development efforts. As of December 31, 2017, our research and development organization included 158 employees, 109 of whom held Ph.D.s. We have invested more than $500 million to date in our research and development capabilities that has resulted in an almost 6X improvement in speed to market and 24X improvement in cost of manufacturing. These achievements are due to the leading strain engineering and upscaling/commercialization capabilities we have developed from our investment.

Strain Engineering

Companies and researchers around the world are continuously learning how the complex biological processes in organisms work. Because there is so much that is still unknown, the best method for development of commercially viable strains is to test as many hypotheses as accurately and quickly as possible to accelerate the learning curve.

We have developed a high-throughput strain engineering system that is currently capable of producing and screening more than 100,000 yeast strains per month, which enables us to achieve an approximately 95% lower cost per strain than we achieved in 2009. We generated more than 360,000 unique strains in 2017, surpassing 6.3 million unique strains created since our inception, with each strain testing for improved production of the target molecules. In addition, through our lab-scale and pilot-plant fermentation operations, and our proprietary analytical tools, we are now able to predict, with high reliability, the performance of candidate strains at industrial scale.

Upscaling and Commercialization

The riskiest part of commercializing biotechnology is often the scale up and manufacturing due to the perceived unpredictability of biotechnology at different scales. We have built scale up capabilities and manufacturing as our advantage by heavily investing in prediction models and analytics to quickly ascertain how a strain's behavior at one scale will translate in another scale and also by successfully scaling up and manufacturing five distinct molecules to date. The results of our advantage are accelerated speed to market, lower overall development costs, and a significantly lower risk profile for any project we undertake.

A strain must be improved to increase the level of efficiency of production, and tested for performance in larger-volume facilities, before it is implemented at commercial-scale manufacturing facilities. Our unique infrastructure to support this scale-up process includes lab-scale fermenters (0.5 to 2 liter), operating pilot plants in our facilities in Emeryville, California and Campinas, Brazil (300 liters), two 5,000-liter fermenters in our Campinas demonstration facility and five years' experience owning and operating our 1,200,000-liter production facility in Brotas, Brazil. Each of these stages mimic the conditions found in larger scale fermentation so that our findings may translate predictably from lab scale to pilot and ultimately to commercial scale. Our infrastructure is so accurate that we can go straight from lab scale to commercial scale for our fermentations. Typically, the only reason we ever invest in the pilot scale step is to produce enough product to accurately test our downstream processing since our fermentation process is already robust.

The complexities that can arise at industrial scale manufacturing are significant and it takes an experienced team to not only address issues as they arise, but to also have the foresight to prevent issues from arising. With five years of experience operating our production facility in Brotas, Brazil that we designed, we have been able to develop a world-class manufacturing team. This team has successfully brought on line a production facility and scaled up and manufactured five molecules that are currently used in thousands of consumer goods products around the world. Our effort also expands into continued strain and process improvements to ensure our manufacturing is robust and the most cost advantaged.

Product Markets and Partnerships

There are three market areas that are our primary focus and key to our growth: Health & Wellness, Clean Skincare and Flavors & Fragrances. All of these markets embody our core competencies of sustainably providing clean ingredients in markets where we can be the most impactful, not only from a growth and revenue standpoint, but also for healthier living.

We believe that our leadership in biotechnology is demonstrated by collaboration partners, who come to us to access our platform and industrial fermentation expertise. Together we seek to reduce environmental impact, enhance performance, reduce supply and price volatility, and improve profit margins. Our partners include Flavors & Fragrances companies such as Firmenich S.A. (Firmenich) and Givaudan International, SA (Givaudan), and nutraceutical companies such as DSM. Our work has also been funded by the U.S. government, including the Department of Energy (DOE) and DARPA, to develop technologies and processes capable of improving the ability to utilize biotechnology for the production of a broader range of molecules.

Health & Wellness

Our Health & Wellness focus includes alternative sweeteners, nutraceuticals, such as vitamins, and food ingredients. As consumers continue to demand higher nutritional performance, cleaner labels and convenience from their food, the demand for specific ingredients that are often difficult and expensive to procure will continue to grow. Animal farming is also being impacted by the growing demand for protein and the need to change farming practices, such as reducing antibiotic use. Our technology can be employed to provide affordable access to these desired ingredients for both human and animal health. To date, product revenue in this area has been from a derivative made from our Biofene® product by our partner. In 2018, we plan to run at commercial scale our first developed molecule, a superior, alternative, non-nutritive sweetener.

During 2015, we announced the signings of our first ingredient supply agreement and collaboration agreement for the global nutraceuticals market. Under the supply agreement, we source Biofene to our partner, which is then further processed into a nutraceutical product. In 2016, we made the first large scale shipments of Biofene to our partner, who successfully produced and sold a nutraceutical product to its customers. In 2017, we expanded our collaborations in nutraceuticals to two vitamins and a human nutrition ingredient. We have also made significant progress in our alternative sweetener project and plan to initiate commercial scale runs in 2018.

Flavors & Fragrances

Our technology enables us to cost-effectively produce natural oils and aroma chemicals that are commonly used in the Flavors & Fragrances market. Many of the natural ingredients used in the Flavors & Fragrances market are expensive because there is limited supply and the synthetic alternatives require complex chemical conversions. We offer Flavors & Fragrances companies a natural route to procure these high-value ingredients without sacrificing cost or quality. To date, we have successfully brought three Flavors & Fragrances ingredients to market with our collaboration partners. We also have several other ingredients under development.

In late 2013, we commenced commercial production of our first Flavors & Fragrances ingredient for a range of applications, from perfumes to laundry detergent, which is marketed by a collaboration partner which is a global Flavors & Fragrances leader. In 2014, we completed our first production campaign of this ingredient and shipped it to this collaboration partner. In late 2015, we commenced production and initial sales of our second Flavors & Fragrances ingredient to the same collaboration partner. In 2017, we successfully completed our first commercial scale production and shipped our third Flavors & Fragrances ingredient to our partner.

We are currently working to develop and commercialize a variety of Flavors & Fragrances ingredients that are either direct fermentation products or derivatives of fermentation products.

Clean Skincare

Our Clean Skincare focus includes skincare and cosmetic ingredients we develop and commercialize with our partners and our branded Biossance™ and Neossance product lines. In 2017, we successfully brought our first cosmetic ingredient to market with our collaboration partner and have several other ingredients currently under development. Our Biossance™ and Neossance products are discussed further in the *Amyris-branded Product Markets* section.

In 2016, Amyris entered into a partnership in the field of cosmetic actives and completed the engineering of a yeast strain that can produce the first target in this space at significantly reduced cost. In 2017, we successfully launched the product with our partner. This will enable our partner to expand the market for this molecule into new applications and products. The speed to market for this ingredient reinforces the value proposition and strength of the Amyris technology platform and Amyris's ability to scale up products for our partners.

Amyris-branded Product Markets

Through basic chemical finishing steps, we are able to convert our farnesene into squalane, which is used today as a premium emollient in Health & Wellness and Clean Skincare products. We believe that our squalane offers performance attributes equal or superior to those of squalane derived from conventional sources. The ingredient traditionally has been manufactured from olive oil or extracted from deep-sea shark liver oil, which requires that the shark be killed in order to harvest its liver oil. The relatively high price and unstable supply of squalane in the past meant that its use was generally limited to luxury products or small quantities in mass-market product formulations. With our ability to produce a reliable supply of low-cost squalane that eliminates the need to harvest shark liver oil, we offer this ingredient at a price that we believe will drive increasing adoption by formulators. In addition to squalane, we offer a second, lower-cost emollient, hemisqualane, for the cosmetics market. In December 2016, we formed a joint venture for our business-to-business sales of Neossance squalane and hemisqualane with Nikko Chemicals Co., Ltd. (Nikko), in which we hold a 50% interest. See below under “Joint Ventures” for more information regarding our Aprinnova joint venture. The joint venture currently has supply agreements with several regional distributors, including those with locations in Japan, South Korea, Europe, Brazil and North America, and, in some cases, directly with cosmetics formulators, which we transferred to the joint venture during the formation process.

In addition, in 2015 we launched our own consumer brand, Biossance™ skincare products, featuring our Biofene-derived squalane. Under our Biossance™ brand, we market and sell our products directly to retailers and consumers. Biossance™ was initially sold solely through our ecommerce branded website and in 2016, we expanded the product line to include an expansive line of high-performance skincare products and opened up sales through Home Shopping Network (HSN). In October 2016, we announced our Biossance™ product line would begin to be carried at Sephora in 2017. In February 2017, we launched a full squalane-based consumer cosmetic line at participating Sephora stores and Sephora online. All of the products are based on Amyris’s commitment to No Compromise™. Since the launch, sales have grown, and with Sephora’s partnership, we are looking to expand to more stores.

Manufacturing

Until December 2017, we owned and operated a large-scale production facility located in Brotas, Brazil. In December 2017, we sold the facility to a unit of DSM Nutritional Products Ltd (together with its affiliates, DSM) and entered into a supply agreement with DSM for us to purchase output from the facility. See Note 13, “Divestiture” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for more information regarding our December 2017 transaction with DSM.

In February 2017, we broke ground on a second purpose-built, large-scale production facility that is adjacent to the first Brotas facility and which we will own and operate. We intend to complete construction of this facility in late 2019. In addition, in 2019, we plan to resume construction of a production facility in Pradópolis, Brazil that we partially built prior to 2013. This facility will support production of our alternative sweetener products.

For many of our products, we perform additional distillation or chemical finishing steps to convert initial target molecules into other finished products, such as renewable squalane. We have agreements with several facilities in the U.S. and Brazil to perform these downstream steps for such products. We may enter into additional agreements with other facilities for finishing services and to access flexible production capacity and an array of other services as we develop additional products. In December 2016, we purchased a manufacturing facility in Leland, North Carolina, which had been previously operated by Glycotech Inc. (Glycotech) to convert our Biofene into squalane and other final products. We subsequently contributed that facility to our Aprinnova joint venture. See below under “Joint Ventures” for more information regarding our Aprinnova joint venture.

Joint Ventures

Total Amyris BioSolutions B.V.

We have entered into a series of agreements since 2011 to establish a research and development program and form a joint venture with Total to produce and commercialize Biofene-based diesel and jet fuels. We formed such joint venture, Total Amyris BioSolutions B.V. (TAB), in November 2013. With an exception for our fuels business in Brazil, the collaboration and joint venture established the exclusive means for us to develop, produce and commercialize fuels from Biofene. We granted TAB exclusive licenses under certain of our intellectual property to make and sell joint venture products. We also granted TAB, in the event of a buy-out of our interest in the joint venture by Total (which Total is entitled to do under certain circumstances described below), a non-exclusive license to optimize or engineer yeast strains used by us to produce farnesene for the joint venture’s diesel and jet fuels. As a result of these licenses, Amyris generally no longer has an independent right to make or sell Biofene fuels outside of

Brazil without the approval of TAB.

Our agreements with Total relating to our fuels collaboration created a convertible debt financing structure for funding the research and development program. The collaboration agreements contemplated $105.0 million in financing (R&D Notes) for the program, for which Total completed funding in January 2015.

In July 2015, we entered into a Letter Agreement with Total (as amended in February 2016, the TAB Letter Agreement) regarding the restructuring of the ownership and rights of TAB (the Restructuring), and on March 21, 2016, we, Total and TAB closed the Restructuring and entered into the Restructuring Agreements, including the Jet Fuel Agreement and the EU Diesel Fuel Agreement.

As a result of the Jet Fuel Agreement, we generally no longer have an independent right to make or sell, without the approval of TAB, farnesene- or farnesane-based jet fuels outside of Brazil. TAB elected not to exercise its option to purchase our Brazil jet fuel business, and such option is now expired.

As a result of the EU Diesel Fuel Agreement, we generally no longer have an independent right to make or sell, without the approval of Total, farnesene- or farnesane-based diesel fuels in the EU.

In addition, as part of the closing of the Restructuring and pursuant to the TAB Letter Agreement, on March 21, 2016, we sold to Total one half of our ownership stake in TAB (giving Total an aggregate ownership stake of 75% of TAB and giving us an aggregate ownership stake of 25% of TAB) in exchange for Total canceling (i) $1.3 million of R&D Notes, plus all paid-in-kind and accrued interest under all outstanding R&D Notes (including all such interest that was outstanding as of July 29, 2015) and (ii) a note in the principal amount of €50,000, plus accrued interest, issued to Total in connection with the original TAB capitalization. To satisfy its purchase obligation above, Total surrendered to us the remaining R&D Note of $5.0 million in principal amount, and we executed and delivered to Total a new R&D Note, containing substantially similar terms and conditions other than it is unsecured and its payment terms are severed from TAB's business performance, in the principal amount of $3.7 million. See Note 4, "Debt" and Note 18, "Subsequent Events" in "Notes to Consolidated Financial Statements" included in this Annual Report on Form 10-K for additional details regarding such R&D Note.

As a result of, and in order to reflect, the changes to the ownership structure of TAB described above, on March 21, 2016, (a) we, Total and TAB entered into an Amended and Restated Shareholders' Agreement and filed a Deed of Amendment of Articles of Association of TAB and (b) we and Total terminated the Amended and Restated Master Framework Agreement, dated December 2, 2013 and amended on April 1, 2015, between us and Total.

Novvi LLC

In June 2011, we entered into joint venture agreements with Cosan US. Inc. (Cosan U.S. and, together with its affiliates, Cosan) related to the formation of a joint venture to focus on the worldwide development, production and commercialization of base oils made from Biofene for the automotive, commercial and industrial lubricants markets. In September 2011, we formed Novvi, an entity that was initially jointly owned by Cosan U.S. and us. In connection with the formation of Novvi, we entered into an IP License Agreement with Novvi (as amended, the Novvi IP License Agreement) and both the Company and Cosan U.S. granted Novvi certain rights of first refusal with respect to alternative base oil and additive technologies that may be acquired by the Company or Cosan U.S. during the term of the IP License Agreement, which was 20 years. In March 2013, we entered into additional agreements with Cosan U.S. to (i) expand our base oils joint venture with Cosan to also include additives and lubricants and (ii) operate the joint venture exclusively through Novvi, and amended the Novvi IP License Agreement to reflect such additional agreements. Under these agreements, Amyris and Cosan U.S. each owned 50% of Novvi, and each shared equally in any costs and any profits ultimately realized by the joint venture. In 2014, 2015 and 2016, we and Cosan U.S. purchased additional membership units in Novvi in exchange for cash and/or forgiveness of existing receivables, and made certain loans to Novvi in an aggregate amount of $8.3 million. Following such transactions, Amyris and Cosan U.S. continued to each own 50% of Novvi.

In July 2016, American Refining Group, Inc. (ARG) agreed to make a capital contribution of up to $10.0 million in cash to Novvi, subject to certain conditions, in exchange for a one third ownership stake in Novvi. In connection with such investment, we and Cosan U.S. also agreed to make certain contributions to Novvi (including the forgiveness of outstanding loans and existing receivables) in exchange for receiving additional membership units in Novvi. Following the ARG investment, which was fully funded as of March 31, 2017, and the contributions of us and Cosan U.S., each of Novvi's three members (i.e., ARG, Amyris and Cosan U.S.) owned one third of Novvi. In July 2016, the Novvi joint venture documents and the Novvi IP License Agreement were amended in order to reflect the ARG investment in Novvi and related transactions, and Amyris and Novvi entered into a Renewable Farnesene Supply Agreement (the Novvi Supply Agreement) relating to the supply of farnesene by Amyris to Novvi in connection with the joint venture.

In November 2016, Chevron U.S.A. Inc. (Chevron) made a capital contribution of $1.0 million in cash to Novvi in exchange for a 3% ownership stake in Novvi, which reduced the ownership interests of Amyris, Cosan U.S. and ARG pro rata. In connection with its investment in Novvi, Chevron was granted certain rights to purchase additional units in Novvi as well as the right to purchase up to its pro rata share of additional membership units that Novvi may, from time to time, propose to sell or issue.

In October 2017, H&R Group US, Inc. (H&R) made a capital contribution of $10.0 million in cash to Novvi in exchange for a 24.4% ownership stake in Novvi, which reduced the ownership interests of Amyris, Cosan U.S., ARG and Chevron pro rata. As a result of such investment, each of Amyris, Cosan U.S., ARG and H&R owned 24.4% of Novvi, with Chevron owning the remaining 2.4%. In October 2017, the Novvi joint venture documents and the Novvi IP License Agreement were amended in order to reflect the H&R investment in Novvi and related transactions.

In December 2017, we assigned the Novvi Supply Agreement to DSM as part of the purchase and sale of our Brotas facility. See Note 13, “Divestiture” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for more information regarding our December 2017 transaction with DSM.

Aprinnova, LLC

In December 2016, we entered into joint venture agreements with Nikko related to the formation of a joint venture to focus on the worldwide commercialization of our Neossance cosmetic ingredients business. In December 2016, we formed the joint venture under the name Neossance, LLC, and later changed the name to Aprinnova, LLC (the Aprinnova JV), which is jointly owned by us and Nikko. Pursuant to the joint venture agreements, we contributed certain assets to the Aprinnova JV, including certain intellectual property and other commercial assets relating to our Neossance cosmetic ingredients business, as well as the production facility in Leland, North Carolina and related assets purchased by us from Glycotech in December 2016. We also agreed to provide the Aprinnova JV with licenses to certain intellectual property necessary to make and sell products associated with the Neossance business (the Aprinnova JV Products). At the closing of the formation of the joint venture, Nikko purchased a 50% interest in the Aprinnova JV in exchange for an initial payment of $10.0 million and the profits, if any, distributed from the Aprinnova JV to Nikko as a member in cash during the three year period following December 12, 2016, up to a maximum of $10.0 million. In addition, as part of the formation of the Aprinnova JV, we and Nikko agreed to make certain working capital loans to Aprinnova JV and we further agreed to execute a supply agreement to supply farnesene to the Aprinnova JV, to purchase all of our requirements for the Aprinnova JV Products from the Aprinnova JV, to transfer all of our customers for the Aprinnova JV Products to the Aprinnova JV, to guarantee a maximum production cost for certain Aprinnova JV Products, and to bear any cost of production above such guaranteed costs.

Product Distribution and Sales

We distribute and sell our products directly to distributors or collaborators, or through joint ventures, depending on the market. For most of our products, we sell directly to our collaboration partners, except for our consumer care products, which we sell to distributors and formulators (other than our Biossance™ brand, which we sell directly to retailers and consumers). Generally, our collaboration agreements include commercial terms, and sales are contingent upon achievement of technical and commercial milestones.

For the year ended December 31, 2017, revenue from 10%-or-more customers and from all other customers was as follows:

	Renewable products	Licenses and royalties	Grants and collaborations	Total Revenue	% of Total Revenue
DSM	$ —	$57,972	$ 1,679	$59,651	41.6 %
Firmenich	9,621	1,199	5,803	16,623	11.6 %
Nenter & Co., Inc.	12,057	2,633	—	14,690	10.2 %
All other customers	20,692	2,673	29,116	52,481	36.6 %
Total revenue	$ 42,370	$64,477	$ 36,598	$143,445	100.0 %

Intellectual Property

Our success depends in large part upon our ability to obtain and maintain proprietary protection for our products and technologies, and to operate without infringing on the proprietary rights of others. We seek to avoid the latter by monitoring patents and publications in our product areas and technologies to be aware of developments that may affect our business, and to the extent we identify such developments, evaluate and take appropriate courses of action. With respect to the former, our policy is to protect our proprietary position by, among other methods, filing for patent applications on inventions that are important to the development and conduct of our business with the U.S. Patent and Trademark Office (the USPTO), and its foreign counterparts.

As of December 31, 2017, we had 474 issued U.S. and foreign patents and 315 pending U.S. and foreign patent applications that are owned or co-owned by or licensed to us. We also use other forms of protection (such as trademark, copyright, and trade secret) to protect our intellectual property, particularly where we do not believe patent protection is appropriate or obtainable. We aim to take advantage of all of the intellectual property rights that are available to us and believe that this comprehensive approach provides us with a strong proprietary position.

Patents extend for varying periods according to the date of patent filing or grant and the legal term of patents in various countries where patent protection is obtained. The actual protection afforded by patents, which can vary from country to country, depends on the type of patent, the scope of its coverage and the availability of legal remedies in the country. See "*Risk Factors - Risks Related to Our Business - Our proprietary rights may not adequately protect our technologies and product candidates*."

We also protect our proprietary information by requiring our employees, consultants, contractors and other advisers to execute nondisclosure and assignment of invention agreements upon commencement of their respective employment or engagement. Agreements with our employees also prevent them from bringing the proprietary rights of third parties to us. In addition, we also require confidentiality or material transfer agreements from third parties that receive our confidential data or materials.

Trademarks

Amyris, the Amyris logo, Biofene, Biossance™ and No Compromise are trademarks or registered trademarks of Amyris, Inc. This report also contains trademarks and trade names of other businesses that are the property of their respective holders.

Competition

We expect that our renewable products will compete with products produced from traditional sources as well as from alternative production methods that established enterprises and new companies are seeking to develop and commercialize.

Health & Wellness

Many active ingredients in the nutraceutical market are made via chemical synthesis by suppliers that have a deep chemistry knowhow and production facilities, including ingredient suppliers. We may compete directly with these companies with respect to specific ingredients or attempt to provide customers with more cost effective or higher performing alternatives. For food ingredients, we compete with companies that produce products from plant and animal derived sources as well as with companies that are also developing biotechnology production solutions to produce specific molecules.

Flavors & Fragrances

The main competition for Flavors & Fragrances and cosmetic actives is from products derived from plant and animal sources as well as chemical synthesis. The products derived from plant and animal sources are typically produced at a higher cost, lower purity and create a greater impact on the environment compared to our products. Products derived from chemical synthesis are often produced at a low cost but have ramifications on sustainability as well as non-natural sourcing. There are also companies that are working to develop products using similar technology to us.

Clean Skincare

We develop and sell active e cosmetic ingredients and consumer products in the Clean Skincare market, creating a competitive landscape that includes ingredient suppliers as well as consumer goods companies, such as P&G and Estee Lauder. Most skincare ingredients are derived from plant and animal sources or created using chemical synthesis. Plant- and animal-sourced ingredients are typically higher in cost, lower in purity and have a greater impact on the environment versus our products. Products derived from chemical synthesis are often produced at a low cost but have ramifications on sustainability as well as non-natural sourcing. There are also companies that are working to develop products using similar technology to us.

Competitive Factors

We believe the primary competitive factors in our target markets are:

- product price;
- product performance and other measures of quality;
- infrastructure compatibility of products;
- sustainability; and
- dependability of supply.

We believe that, for our products to succeed in the market, we must demonstrate that our products are comparable or better alternatives to existing products and to any alternative products that are being developed for the same markets based on some combination of product cost, availability, performance, and consumer preference characteristics.

Regulatory Matters

Environmental Regulations

Our development and production processes involve the use, generation, handling, storage, transportation and disposal of hazardous chemicals and radioactive and biological materials. We are subject to a variety of federal, state, local and international laws, regulations and permit requirements governing the use, generation, manufacture, transportation, storage, handling and disposal of these materials in the United States, Brazil and other countries where we operate or may operate or sell our products in the future. These laws, regulations and permits can require expensive fees, pollution control equipment or operational changes to limit actual or potential impact of our technology on the environment and violation of these laws could result in significant fines, civil sanctions, permit revocation or costs from environmental remediation. We believe we are currently in substantial compliance with applicable environmental regulations and permitting. However, future developments including the commencement of or changes in the processes relating to commercial manufacturing of one or more of our products, more stringent environmental

regulation, policies and enforcement, the implementation of new laws and regulations or the discovery of unknown environmental conditions may require expenditures that could have a material adverse effect on our business, results of operations or financial condition. See "*Risk Factors - Risks Relating to Our Business - We may incur significant costs to comply with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities*."

GMM Regulations

The use of genetically-modified microorganisms (GMMs), such as our yeast strains, is subject to laws and regulations in many countries. In the United States, the Environmental Protection Agency (EPA) regulates the commercial use of GMMs as well as potential products produced from the GMMs. Various states within the United States could choose to regulate products made with GMMs as well. While the strain of genetically modified yeast that we use, *S. cerevisiae*, is eligible for exemption from EPA review because it is generally recognized as safe, we must satisfy certain criteria to achieve this exemption, including but not limited to, use of compliant containment structures and safety procedures. In Brazil, GMMs are regulated by the National Biosafety Technical Commission (CTNBio) under its Biosafety Law No. 11.105-2005. We have obtained commercial approvals from CTNBio to use our GMMs in a contained environment in our Brazil facilities for research and development purposes, in manufacturing and at contract manufacturing facilities in Brazil.

We expect to encounter GMM regulations in most if not all of the countries in which we may seek to make our products; however, the scope and nature of these regulations will likely vary from country to country. If we cannot meet the applicable requirements in countries in which we intend to produce our products using our yeast strains, then our business will be adversely affected. See "*Risk Factors - Risks Related to Our Business - Our use of genetically-modified feedstocks and yeast strains to produce our products subjects us to risks of regulatory limitations and rejection of our products*."

Chemical Regulations

Our renewable products may be subject to government regulations in our target markets. In the United States, the EPA administers the requirements of the Toxic Substances Control Act (TSCA), which regulates the commercial registration, distribution and use of many chemicals. Before an entity can manufacture or distribute significant volumes of a chemical, it needs to determine whether that chemical is listed in the TSCA inventory. If the substance is listed, then manufacture or distribution can commence immediately. If not, then in most cases a "Chemical Abstracts Service" number registration and pre-manufacture notice must be filed with the EPA, which has 90 days to review the filing. A similar requirement exists in Europe under the Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH) regulation. See "*Risk Factors - Risks Related to Our Business - We may not be able to obtain regulatory approval for the sale of our renewable products*." In 2013, the EPA registered farnesane as a new chemical substance under the TSCA, which enables us to manufacture and sell farnesane without restriction in the United States.

Other Regulations

Certain of our current or proposed products in the Health & Wellness, Clean Skincare, and Flavors & Fragrances markets, including alternative sweeteners, nutraceuticals, Flavors & Fragrances ingredients, skincare ingredients and cosmetic actives, may be subject to regulation by the United State Food and Drug Administration (the FDA), as well as similar agencies of states and foreign jurisdictions where these products are sold or proposed to be sold. Pursuant to the Federal Food, Drug, and Cosmetic Act (the FDCA), the FDA regulates the processing, formulation, safety, manufacture, packaging, labeling and distribution of food ingredients, vitamins, and cosmetics. Generally, in order to be marketed and sold in the United States, a relevant product must be generally recognized as safe and not adulterated or misbranded under the FDCA and relevant regulations issued thereunder. The FDA has broad authority to enforce the provisions of the FDCA applicable to food ingredients, vitamins and cosmetics, including powers to issue a public warning letter to a company, to publicize information about illegal products, to request a recall of illegal products from the market, and to request the United States Department of Justice to initiate a seizure action, an injunction action, or a criminal prosecution in the U. S. courts. Failure to obtain requisite approval from, or comply with the laws and regulations of, the FDA or similar agencies of states and applicable foreign jurisdictions could prevent us from fully commercializing certain of our products. See "*Risk Factors - Risks Related to Our Business - We may not be able to obtain regulatory approval for the sale of our renewable products*."

In addition, our end-user products such as our Biossance™ brand skincare products are subject to the regulations of the United States Federal Trade Commission (FTC) and similar agencies of states and foreign jurisdictions where these products are sold or proposed to be sold regarding the advertising of such products. In recent years, the FTC has instituted numerous enforcement actions against companies for failure to have adequate substantiation for claims made in advertising or for the use of false or misleading advertising claims. The FTC has broad authority to enforce its laws and regulations applicable to cosmetics, including the ability to institute enforcement actions which often result in consent decrees, injunctions, and the payment of civil penalties by the companies involved. Failure to comply with the laws and regulations of the FTC or similar agencies of states and applicable foreign jurisdictions could impair our ability to market our end-user products.

Employees

As of December 31, 2017, we had 414 full-time employees, of whom 325 were in the United States and 89 were in Brazil. Except for labor union representation for Brazil-based employees based on labor code requirements in Brazil, none of our employees is represented by a labor union or is covered by a collective bargaining agreement. We have never experienced any employment-related work stoppages and consider relations with our employees to be good.

Corporate Information

We were originally incorporated in California in 2003 under the name Amyris Biotechnologies, Inc. and then reincorporated in Delaware in 2010 and changed our name to Amyris, Inc. Our principal executive offices are located at 5885 Hollis Street, Suite 100, Emeryville, California 94608, and our telephone number is (510) 450-0761. Our common stock is listed on The NASDAQ Global Select Market under the symbol "AMRS."

Available Information

Our website address is www.amyris.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and other reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934 (the Exchange Act), as well as amendments thereto, are filed with the U.S. Securities and Exchange Commission (the SEC) and are available free of charge on our website at investors.amyris.com promptly after such reports are available on the SEC's website. We may use our investors.amyris.com website as a means of disclosing material non-public information and of complying with our disclosure obligations under Regulation FD. The public may read and copy any materials filed by Amyris with the SEC at the SEC's Public Reference Room located at 100 F Street, NE, Room 1580, Washington, D.C. 20549.

The public may obtain information regarding the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at www.sec.gov.

The information contained in or accessible through our website or contained on other websites is not incorporated into this filing. Further, any references to URLs contained in this report are intended to be inactive textual references only.

Executive Officers of the Registrant

The following table provides the names, ages and offices of each of our executive officers as of March 30, 2018:

Name	Age	Position
John Melo	52	Director, President and Chief Executive Officer
Eduardo Alvarez	54	Chief Operating Officer
Kathleen Valiasek	54	Chief Financial Officer
Joel Cherry, Ph.D.	57	President of Research and Development
Nicole Kelsey	51	General Counsel and Secretary

John Melo

John Melo has nearly three decades of combined experience as an entrepreneur and thought leader in the global fuels industry and technology innovation. Mr. Melo has served as our Chief Executive Officer and a director since January 2007 and as our President since June 2008. Before joining Amyris, Mr. Melo served in various senior executive positions at BP Plc (formerly British Petroleum), one of the world's largest energy firms, from 1997 to 2006, most recently as President of U.S. Fuels Operations from 2004 until December 2006, and previously as Chief Information Officer of the refining and marketing segment from 2001 to 2003, Senior Advisor for e-business strategy to Lord Browne, BP Chief Executive, from 2000 to 2001, and Director of Global Brand Development from 1999 to 2000. Before joining BP, Mr. Melo was with Ernst & Young, an accounting firm, from 1996 to 1997, and a member of the management teams of several startup companies, including Computer Aided Services, a management systems integration company, and Alldata Corporation, a provider of automobile repair software to the automotive service industry. Mr. Melo currently serves on the board of directors of Renmatix, Inc., and on the board of the Industrial action of Bio and also on the board of the California Life Sciences Association. Mr. Melo was formerly an appointed member to the U.S. section of the U.S.-Brazil CEO Forum.

Eduardo Alvarez

Eduardo Alvarez has served as our Chief Operating Officer since October 2017. Mr. Alvarez has over 30 years of global operations experience both running and advising growth companies. Previously, he served as Global Operations Strategy Leader for PricewaterhouseCoopers LLP (PwC). During his tenure, Mr. Alvarez co-led the integration of his prior company, Booz & Company, following its acquisition by PwC. In that role, he grew operations into a global practice with $1.5 billion in revenue and 4,000 employees. Mr. Alvarez's assignments focused on delivering structural cost improvements while also driving sustained revenue growth. His experience also includes roles at Booz Allen Hamilton, General Electric and AT&T. Alvarez holds a Master of Business Administration from Harvard Business School, a Master of Science in Mechanical Engineering in computer control and manufacturing from the University of California, Berkeley, and a Bachelor of Science degree in mechanical engineering from the University of Michigan. Mr. Alvarez is a board member of The Chicago Council of Global Affairs.

Kathleen Valiasek

Kathleen Valiasek has served as our Chief Financial Officer since January 2017. Prior to joining us, Ms. Valiasek served as Chief Executive Officer of a finance and strategic consulting firm she founded in 1994, and in this capacity she worked closely with the senior management teams of fast-growing companies including start-ups, venture-backed and Fortune 500 companies. Prior to this, she served in key venture capital, real estate development and accounting roles. Ms. Valiasek holds a Bachelor of Business Administration degree from the University of Massachusetts, Amherst.

Joel Cherry, Ph.D.

Dr. Joel Cherry has served as our President of Research and Development since July 2011 and previously as our Senior Vice President of Research Programs and Operations since November 2008. Before joining Amyris, Dr. Cherry was Senior Director of Bioenergy Biotechnology at Novozymes, a biotechnology company focusing on development and manufacture of industrial enzymes, from 1992 to November 2008. At Novozymes, he served in a variety of R&D scientific and management positions, including membership in Novozymes' International R&D Management team, and as Principal Investigator and Director of the BioEnergy Project, a U.S. Department of Energy-funded $18 million effort initiated in 2000. Dr. Cherry holds a Bachelor of Arts degree in Chemistry from Carleton College and a Doctor of Philosophy degree in Biochemistry from the University of New Hampshire.

Nicole Kelsey

Nicole Kelsey has served as our General Counsel and Secretary since August 2017. Her areas of expertise range from U.S. securities laws, to international M&A and corporate governance. Prior to joining Amyris, she served as General Counsel and Secretary of Criteo, a global leader in commerce marketing based in Paris, for over three years. Prior to joining Criteo, Ms. Kelsey was the senior securities lawyer for Medtronic, a global leader in medical technology; she served as head M&A attorney for CIT Group, Inc.; was the general counsel of a private merchant bank; and worked for the international conglomerate Vivendi. Before going in-house, Ms. Kelsey practiced with the law firms of White & Case and Willkie, Farr & Gallagher, in Paris and New York. A Fulbright scholar, Ms. Kelsey holds a J.D. from Northwestern University and a B.A. from The Ohio State University.

ITEM 1A. RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information set forth in this Annual Report on Form 10-K, including the consolidated financial statements and related notes, which could materially affect our business, financial condition or future results. If any of the following risks actually occurs, our business, financial condition, results of operations and future prospects could be materially and adversely harmed. The trading price of our common stock could decline due to any of these risks, and, as a result, you may lose all or part of your investment.

Risks Related to Our Business

We have incurred losses to date, anticipate continuing to incur losses in the future, and may never achieve or sustain profitability.

We have incurred significant losses in each year since our inception and believe that we will continue to incur losses and negative cash flows from operations for at least the next 12 months following the issuance of the financial statements. As of December 31, 2017, we had an accumulated deficit of $1.2 billion and had cash and cash equivalents of $57.1 million. We have significant outstanding debt, a significant working capital deficit and contractual obligations related to capital and operating leases, as well as purchase commitments of $18.3 million. As of December 31, 2017, our debt totaled $165.4 million, net of discount and issuance costs of $30.4 million, of which $56.9 million is classified as current. Our debt service obligations over the next twelve months are significant, including $16.9 million of anticipated interest payments (excluding interest paid in kind by adding to outstanding principal) and may include potential early conversion payments of up to $5.4 million (assuming all note holders convert) under our outstanding 9.50% Convertible Senior Notes due 2019 (the “2015 144A Notes”). Furthermore, our debt agreements contain various financial and operating covenants, including restrictions on business that could cause us to be at risk of defaults. We expect to incur additional costs and expenses related to the continued development and expansion of our business, including construction and operation of our manufacturing facilities, contract manufacturing, research and development operations, and operation of our pilot plants. There can be no assurance that we will ever achieve or sustain profitability on a quarterly or annual basis.

Our consolidated financial statements as of and for the year ended December 31, 2017 have been prepared on the basis that we will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. We have incurred significant losses since our inception and we expect that we will continue to incur losses as we aim to successfully execute our business plan and will be dependent on additional public or private financings, collaborations or licensing arrangements with strategic partners, or additional credit lines or other debt financing sources to fund continuing operations. Based on our cash balances and recurring losses since inception, there is substantial doubt about our ability to continue as a going concern within one year after the date that

these financial statements are issued. Our operating plans for 2018 contemplate a significant reduction in our net operating cash outflows as compared to the year ended December 31, 2017 resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) significantly increased royalty streams (previously referred to as value share revenues), (iii) reduced production costs as a result of manufacturing and technology developments, and (iv) cash inflows from grants and collaborations. In addition, as noted below, for our 2018 operating plan, we may depend on funding from sources that are not subject to existing commitments. We may need to obtain additional funding from equity or debt financings, which may require us to agree to burdensome covenants, grant further security interests in our assets, enter into collaboration and licensing arrangements that require us to relinquish commercial rights, or grant licenses on terms that are not favorable. No assurance can be given at this time as to whether we will be able to achieve our expense reduction or fundraising objectives, regardless of the terms. If we are unable to raise additional financing, or if other expected sources of funding are delayed or not received, our ability to continue as a going concern would be jeopardized and we may be forced to delay, scale back or eliminate some of our general and administrative, research and development, or production activities or other operations and reduce investment in new product and commercial development efforts in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected. In addition, if we are unable to continue as a going concern, we may be unable to meet our obligations under our existing debt facilities, which could result in an acceleration of our obligation to repay all amounts outstanding under those facilities, and we may be forced to liquidate our assets. In such a scenario, the value we receive for our assets in liquidation or dissolution could be significantly lower than the value reflected in our financial statements.

Our consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty, which could have a material adverse effect on our financial condition and cause investors to suffer the loss of all or a substantial portion of their investment.

We will require significant cash inflows from the sales of renewable products, licenses and royalties, and grants and collaborations and, if needed, financings to fund our anticipated operations and to service our debt obligations and may not be able to obtain such funding on favorable terms, if at all.

Our planned working capital needs and operating and capital expenditures for 2018, and our ability to service our outstanding debt obligations, are dependent on significant inflows of cash from grants and collaborations, licenses and royalties, and product sales and, if needed, additional financing arrangements. We will continue to need to fund our research and development and related activities and to provide working capital to fund production, procurement, storage, distribution and other aspects of our business. Some of our anticipated funding sources, such as research and development collaborations, are subject to the risks that we may not be able to meet milestones, or that collaborations may end prematurely for reasons that may be outside of our control (including technical infeasibility of the project or a collaborator's right to terminate without cause). The inability to generate sufficient cash flow, as described above, could have an adverse effect on our ability to continue with our business plans and our status as a going concern.

If we are unable to raise additional funding, or if other expected sources of funding are delayed or not received, our ability to continue as a going concern would be jeopardized and we would take the following actions:

- Shift focus to existing products and customers with significantly reduced investment in new product and commercial development efforts;
- Reduce expenditures for third party contractors, including consultants, professional advisors and other vendors;
- Reduce or delay uncommitted capital expenditures, including non-essential facility and lab equipment, and information technology projects; and
- Closely monitor the Company's working capital position with customers and suppliers, as well as suspend operations at pilot plants.

Implementing this plan could have a negative impact on our ability to continue our business as currently contemplated, including, without limitation, delays or failures in our ability to:

- Achieve planned production levels;
- Develop and commercialize products within planned timelines or at planned scales; and
- Continue other core activities.

Furthermore, any inability to scale-back operations as necessary, and any unexpected liquidity needs, could create pressure to implement more severe measures. Such measures could have an adverse effect on our ability to meet contractual requirements and increase the severity of the consequences described above.

Our existing financing arrangements may cause significant risks to our stockholders and may impact our ability to pursue certain transactions and operate our business.

As of December 31, 2017, our debt totaled $165.4 million, net of discount and issuance costs of $30.4 million, of which $56.9 million is classified as current. Our cash balance is substantially less than the principal amount of our outstanding debt, and we will be required to generate cash from operations or raise additional working capital through future financings or sales of assets to enable us to repay this indebtedness as it becomes due. There can be no assurance that we will be able to do so.

In addition, we have agreed to significant covenants in connection with our debt financing transactions, including restrictions on our ability to incur future indebtedness, and customary events of default, including failure to pay amounts due, breaches of covenants and warranties, material adverse effect events, certain cross defaults and judgements, and insolvency. A failure to comply with the covenants and other provisions of our debt instruments, including any failure to make a payment when required would generally result in events of default under such instruments, which could permit acceleration of such indebtedness and could result in a material adverse effect on us. If such indebtedness is accelerated, it would generally also constitute an event of default under our other outstanding indebtedness, permitting acceleration of a substantial portion of our indebtedness. Any required repayment of our indebtedness as a result of acceleration or otherwise would lower our current cash on hand such that we would not have those funds available for use in our business or for payment of other outstanding indebtedness.

If we are at any time unable to generate sufficient cash flow from operations to service our indebtedness when payment is due, we may be required to attempt to renegotiate the terms of the instruments relating to the indebtedness, seek to refinance all or a portion of the indebtedness or obtain additional financing. There can be no assurance that we would be able to successfully renegotiate such terms, that any such refinancing would be possible or that any additional financing could be obtained on terms that are favorable or acceptable to us, if at all. Any debt financing that is available could cause us to incur substantial costs and subject us to covenants that significantly restrict our ability to conduct our business. If we seek to complete additional equity financings, the interests of existing equity holders may be diluted.

In addition, the covenants in our debt agreements materially limit our ability to take certain actions, including our ability to pay dividends, make certain investments and other payments, undertake certain mergers and consolidations, and encumber and dispose of assets. For example, the purchase agreement for convertible notes that we sold in separate closings in October 2013 and January 2014, which we refer to as the Tranche Notes, requires us to obtain the consent of the holders of a majority of these notes before completing any change of control transaction or purchasing assets in one transaction or a series of related transactions in an amount greater than $20.0 million, in each case while the Tranche Notes are outstanding. In addition, certain of our existing investors, including the investors that purchased the Tranche Notes, have pro rata rights to invest in equity securities that we issue in certain financings, which could delay or prevent us from completing such financings. Furthermore, certain of our other outstanding securities (e.g., the Tranche Notes, the 2015 144A Notes, and warrants issued in May and August 2017), contain anti-dilution adjustment provisions which may be triggered by future issuances of equity or equity-linked instruments in financing transactions. If such adjustment provisions are triggered, the conversion or exercise price of such securities will decrease and/or the number of shares issuable upon conversion or exercise of such securities will increase. In such event, existing stockholders will be further diluted and the effective issuance price of such equity or equity-linked instruments will be reduced, which may harm our ability to engage in future financing transactions to fund our business.

Our substantial leverage may place us at a competitive disadvantage in our industry.

We continue to have substantial debt outstanding and we may incur additional indebtedness from time to time to finance working capital, product development efforts, strategic acquisitions, investments and partnerships, or capital expenditures, or for other general corporate purposes, subject to the restrictions contained in our debt agreements. Our significant indebtedness and debt service requirements could adversely affect our ability to operate our business and may limit our ability to take advantage of potential business opportunities. For example, our high level of indebtedness presents the following risks:

- we will be required to use a substantial portion of our cash flow from operations to pay principal and interest on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures, product development efforts, acquisitions, investments and strategic alliances and for other general corporate requirements;
- our substantial leverage increases our vulnerability to economic downturns and adverse competitive and industry conditions and could place us at a competitive disadvantage compared to those of our competitors that are less leveraged;

- our debt service obligations could limit our flexibility in planning for, or reacting to, changes in our business and our industry and could limit our ability to pursue other business opportunities, borrow more money for operations or capital in the future and implement our business strategies;
- our level of indebtedness and the covenants in our debt instruments may restrict us from raising additional financing on satisfactory terms to fund working capital, capital expenditures, product development efforts, strategic acquisitions, investments and alliances, and for other general corporate requirements; and
- our substantial leverage may make it difficult for us to attract additional financing when needed.

Future revenues are difficult to predict, and our failure to predict revenue accurately may cause our results to be below our expectations or those of analysts or investors and could result in our stock price declining.

Our revenues are comprised of product revenues, and grants and collaborations revenues. We generate the substantial majority of our product revenues from sales to collaborators and distributors, and only a small portion from direct sales. Our collaboration, supply and distribution agreements do not usually include any specific purchase obligations. The sales volume of our products in any given period has been difficult to predict. A significant portion of our product sales is dependent upon the interest and ability of third party distributors to create demand for, and generate sales of, such products to end-users. For example, if such distributors are unsuccessful in creating pull-through demand for our products with their customers, such distributors may purchase less of our products from us than we expect.

In addition, many of our new and novel products are intended to be a component of other companies' products; therefore, sales of our products may be contingent on our collaborators' and/or customers' timely and successful development and commercialization of end-use products that incorporate our products, and price volatility in the markets for such end-use products, which may include commodities, could adversely affect the demand for our products and the margin we receive for our product sales, which could harm our financial results. While we maintain certain clawback rights to our technology in the event our collaboration partners are unable or unwilling to commercialize the products we create for them, we may be restricted from or unable to market or sell such products or technologies to other potential collaboration partners, which could hinder the growth of our business. In addition, certain of our collaboration partners have the right to terminate their agreements with us if we undergo a change of control or a sale of our business, which could discourage a potential acquirer from making an offer to acquire us.

Further, we have in the past entered into, and expect in the future to enter into, research and development collaboration arrangements pursuant to which we receive payments from our collaborators. Some of such collaboration arrangements include advance payments in consideration for grants of exclusivity or research and development activities to be performed by us. It has in the past been difficult for us to know with certainty when we will sign a new collaboration arrangement and receive payments thereunder. As a result, achievement of our quarterly and annual financial goals has been difficult to forecast with certainty. Once a collaboration agreement has been signed, receipt of cash payments and/or recognition of related revenues may depend on our achievement of research, development, production or cost milestones, which may be difficult to predict. In addition, a portion of the advance payments we receive under our collaboration agreements is typically classified as deferred revenue and recognized over multiple quarters or years.

Furthermore, we have begun to market and sell some of our products directly to end-consumers, initially in the cosmetics market. Because we have little experience in marketing and selling directly to consumers, it is difficult to predict how successful our efforts will be and we may not achieve the product sales we expect to achieve on the timeline we anticipate, if at all. These factors have made it difficult to predict future revenues and have resulted in our revenues being below our previously announced guidance or analysts' estimates. We continue to face these risks in the future, which may cause our stock price to decline.

Our financial results could vary significantly from quarter to quarter and are difficult to predict.

Our revenues and results of operations could vary significantly from quarter to quarter because of a variety of factors, many of which are outside of our control. As a result, comparing our results of operations on a period-to-period basis may not be meaningful. Factors that could cause our quarterly results of operations to fluctuate include:

- achievement, or failure, with respect to technology, product development or manufacturing milestones needed to allow us to enter identified markets on a cost effective basis;
- delays or greater than anticipated expenses associated with the completion, commissioning, acquisition or retrofitting of new production facilities, or the time to ramp up and stabilize production at a new production facility or the

transition (including ramp up) to producing new molecules at existing facilities or with a new contract manufacturer;

- impairment of assets based on shifting business priorities and working capital limitations;
- disruptions in the production process at any manufacturing facility, including disruptions due to seasonal or unexpected downtime at our facilities as a result of feedstock availability, contamination, safety or other technical difficulties, or the scheduled downtime at our facilities as a result of transitioning our equipment to the production of different molecules; however, we do not currently own any manufacturing facilities, as our commercial production is performed by third parties);
- losses of, or the inability to secure new, major customers, collaboration partners, suppliers or distributors;
- losses associated with producing our products as we ramp to commercial production levels;
- failure to recover value added tax (VAT) that we currently reflect as recoverable in our financial statements (e.g., due to failure to meet conditions for reimbursement of VAT under local law);
- the timing, size and mix of product sales to customers;
- increases in price or decreases in availability of feedstock;
- the unavailability of contract manufacturing capacity altogether or at reasonable cost;
- exit costs associated with terminating contract manufacturing relationships;
- gains or losses associated with our hedging activities;
- change in the fair value of derivative instruments;
- fluctuations in the price of and demand for sugar, ethanol, petroleum-based and other products for which our products are alternatives;
- seasonal variability in production and sales of our products;

- competitive pricing pressures, including decreases in average selling prices of our products;
- unanticipated expenses or delays associated with changes in governmental regulations and environmental, health, labor and safety requirements;
- departure of executives or other key management employees resulting in transition and severance costs;
- our ability to use our net operating loss carryforwards to offset future taxable income;
- business interruptions such as earthquakes, tsunamis and other natural disasters;
- our ability to integrate businesses that we may acquire;
- our ability to successfully collaborate with joint venture partners;
- risks associated with the international aspects of our business; and
- changes in general economic, industry and market conditions, both domestically and in our foreign markets.

Due to the factors described above, among others, the results of any quarterly or annual period may not meet our expectations or the expectations of our investors and may not be meaningful indications of our future performance.

A limited number of customers, collaboration partners and distributors account for a significant portion of our revenues, and the loss of major customers, collaboration partners or distributors could harm our operating results.

Our revenues have varied significantly from quarter to quarter and are dependent on sales to, and collaborations with, a limited number of customers, collaboration partners and/or distributors. We cannot be certain that customers, collaboration partners and/or distributors that have accounted for significant revenues in past periods, individually or as a group, will continue to generate similar revenues in any future period. If we fail to renew with, or if we lose, a major customer, collaborator or distributor, or group of customers, collaborators or distributors, our revenues could decline if we are unable to replace the lost revenues with revenues from other sources. Further, since our business model depends in part on such collaboration agreements, it may also be difficult for us to rapidly increase our revenues through additional collaborations in any period, as revenue from such new collaborations will often be recognized over multiple quarters or years.

If we do not meet technical, development and commercial milestones in our collaboration agreements, our future revenues and financial results will be adversely impacted.

We have entered into a number of agreements regarding the further development of certain of our products and, in some cases, for ultimate sale of certain products to the customer under the agreement. Most of these agreements affirmatively obligate the other party to purchase specific quantities of any products, and most contain important conditions that must be satisfied before additional research and development funding or product purchases would occur. These conditions include research and development milestones and technical specifications that must be achieved to the satisfaction of our collaborators, which we cannot be certain we will achieve. If we do not achieve these contractual milestones, our revenues and financial results will be adversely affected.

If we are not able to successfully commence, scale up or sustain operations at existing and planned manufacturing facilities, our customer relationships, business and results of operations may be adversely affected.

A substantial component of our planned production capacity in the near and long term depends on successful operations at existing and potential large-scale production plants. Delays or problems in the construction, start-up or operation of these facilities will cause delays in our ramp-up of production and hamper our ability to reduce our production costs. Delays in construction can occur due to a variety of factors, including regulatory requirements and our ability to fund construction and commissioning costs. For example, in 2012 we determined it was necessary to delay further construction of our large-scale manufacturing facility with São Martinho S.A. (São Martinho) in order to focus on the construction and commissioning of the Brotas facility. We have since proposed to complete construction of the facility to initially support production of our alternative sweetener products. In 2016 and 2017, we produced at capacity at the Brotas facility, and therefore, we needed to identify and secure access to additional production capacity based on anticipated volume requirements, either by constructing a new custom-built facility, acquiring an existing facility from a third party, retrofitting an existing facility operated by a current or potential partner or increasing our use of contract manufacturing facilities. In December 2016, we acquired a production facility in Leland, North Carolina, which facility had been previously operated by our partner Glycotech to perform chemical conversion and production of our end-products, and which facility was subsequently transferred to our newly-formed joint venture with Nikko, as further described in Note 7, “Variable-interest Entities and Unconsolidated Investments” to our consolidated financial statements included in this report. In addition, in February 2017 we broke ground on a second custom-built production facility adjacent to our existing Brotas facility. However, there can be no assurance that we will be able to complete such facility or the proposed alternative sweetener facility on our expected timeline, if at all. In December 2017, we sold our first purpose-built, large-scale production plant in Brotas, Brazil to DSM and concurrently entered into a supply agreement with DSM for us to purchase output from the facility. See Note 13, “Divestiture” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for more information.

Once our large-scale production facilities are built, acquired or retrofitted, we must successfully commission them, if necessary, and they must perform as we expect. If we encounter significant delays, cost overruns, engineering issues, contamination problems, equipment or raw material supply constraints, unexpected equipment maintenance requirements, safety issues, work stoppages or other serious challenges in bringing these facilities online and operating them at commercial scale, we may be unable to produce our renewable products in the time frame and at the cost we have planned. It is difficult to predict the effects of scaling up production of industrial fermentation to commercial scale, as it involves various risks to the quality and consistency of our molecules. In addition, in order to produce molecules at existing and potential future plants, we have been and may in the future be required to perform thorough transition activities, and modify the design of the plant. Any modifications to the production plant could cause complications in the operations of the plant, which could result in delays or failures in production. If any of these risks occur, or if we are unable to create or obtain additional manufacturing capacity necessary to meet existing and potential customer demand, we may need to continue to use, or increase our use of, contract manufacturing sources, which generally entail greater cost to us to produce our products and would therefore reduce our anticipated gross margins and may also prevent us from accessing certain markets for our products. Further, if our efforts to increase (or commence, as the case may be) production at these facilities are not successful, our partners may decide not to work with us to develop additional production facilities, demand more favorable terms or delay their commitment to invest capital in our production. If we are unable to create and sustain manufacturing capacity and operations sufficient to satisfy the existing and potential demand of our customers and partners, our business and results of operations may be adversely affected.

Loss or termination of contract manufacturing relationships could harm our ability to meet our production goals.

In December 2017, we sold our first purpose-built, large-scale production plant in Brotas, Brazil to DSM and concurrently entered into a supply agreement with DSM for us to purchase output from the facility, which represents a significant portion of our expected supply needs. See Note 13, “Divestiture” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for more information. In addition, we rely on other contract manufacturers to produce and/or provide downstream processing of our products. If we are unable to secure the services of contract manufacturers when and as needed, we may lose customer opportunities and the growth of our business may be impaired. We cannot be sure that contract manufacturers will be available when we need their services, that they will be willing to dedicate a portion of their capacity to our projects, or that we will be able to reach acceptable price and other terms with them for the provision of their production services. If we shift priorities and adjust anticipated production levels (or cease production altogether) at contract manufacturing facilities, such adjustments or cessations could also result in disputes or otherwise harm our business relationships with contract manufacturers. In addition, reliance on external sources for our other target molecules could create a risk for us if a single source or a limited number of sources of manufacturing runs into operational issues, creating risk of loss of sales and profitability. Reducing or stopping production at one facility while increasing or starting up production at another facility generally results in significant losses of production efficiency, which can persist for significant periods of time. Also, in order for production to commence under our contract manufacturing arrangements, we generally must provide equipment for such operations, and we cannot be assured that such equipment can be ordered or installed on a timely basis, at acceptable costs, or at all. Further, in order to establish operations at new contract manufacturing facilities, we need to transfer our yeast strains and production processes from our labs to commercial plants controlled by third parties, which may pose technical or operational challenges that delay production or increase our costs.

Our use of contract manufacturers exposes us to risks relating to costs, contractual terms and logistics.

In addition to our production contracts, we must also commercially produce, process and manufacture farnesene and certain specialty molecules through the use of contract manufacturers, and we anticipate that we will continue to use contract manufacturers for the foreseeable future for chemical conversion and production of end-products. In December 2017, we sold our first purpose-built, large-scale production plant in Brotas, Brazil to DSM and concurrently entered into a supply agreement with DSM for us to purchase output from the facility. See Note 13, “Divestiture” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for more information. Establishing and operating contract manufacturing facilities requires us to make significant capital expenditures, which reduces our cash and places such capital at risk. Also, contract manufacturing agreements may contain terms that commit us to pay for capital expenditures and other costs and amounts incurred or expected to be earned by the plant operators and owners, which can result in contractual liability and losses for us even if we terminate a particular contract manufacturing arrangement or decide to reduce or stop production under such an arrangement.

The locations of contract manufacturers can pose additional cost, logistics and feedstock challenges. If production capacity is available at a plant that is remote from usable chemical finishing or distribution facilities, or from customers, we will be required to incur additional expenses in shipping products to other locations. Such costs could include shipping costs, compliance with export and import controls, tariffs and additional taxes, among others. In addition, we may be required to use feedstock from a particular region for a given production facility. The feedstock available in such region may not be the least expensive or most effective feedstock for production, which could significantly raise our overall production cost or reduce our product's quality until we are able to optimize the supply chain.

We face challenges producing our products at commercial scale or at reduced cost and may not be able to commercialize our products to the extent necessary to make a profit or sustain and grow our current business.

To commercialize our products, we must be successful in using our yeast strains to produce target molecules at commercial scale and at a commercially viable cost. If we cannot achieve commercially-viable production economics for enough products to support our business plan, including through establishing and maintaining sufficient production scale and volume, we will be unable to achieve a sustainable products business. A significant portion of our production capacity is through a purpose-built, large-scale production plant in Brotas, Brazil. This plant commenced operations in 2012, and scaling and running the plant has been a technically complex process. In December 2017, we sold the Brotas facility to DSM and concurrently entered into a supply agreement with DSM for us to purchase output from the facility. See Note 13, "Divestiture" in "Notes to Consolidated Financial Statements" included in this Annual Report on Form 10-K for more information. In February 2017, we broke ground on a second custom-built production facility adjacent to the existing Brotas facility and also have plans to complete construction of an additional manufacturing facility in Pradópolis, Brazil initially focused on our alternative sweetener products. However, there can be no assurance that we will be able to complete such facilities on our expected timeline, if at all. Even if we are successful in completing such facilities, there can be no assurance that we will be able to scale and operate such facilities to allow us to meet our operational goals, which could harm our ability to grow our business.

In order to be competitive in the markets we are targeting, our products must have superior qualities or be competitively priced relative to alternatives available in the market. Currently, our costs of production are not low enough to allow us to offer some of our planned products at competitive prices relative to alternatives available in the market. Our production costs depend on many factors that could have a negative effect on our ability to offer our planned products at competitive prices, including, in particular, our ability to establish and maintain sufficient production scale and volume, and feedstock cost.

We face financial risk associated with scaling up production to reduce our production costs. To reduce per-unit production costs, we must increase production to achieve economies of scale and to be able to sell our products with positive margins. However, if we do not sell production output in a timely manner or in sufficient volumes, our investment in production will harm our cash position and generate losses. Additionally, we may incur added costs in storage and we may face issues related to the decrease in quality of our stored products, which could adversely affect

the value of such products. Since achieving competitive product prices generally requires increased production volumes and our manufacturing operations and cash flows from sales are in their early stages, we have had to produce and sell products at a loss in the past, and may continue to do so as we build our business. If we are unable to achieve adequate revenues from a combination of product sales and other sources, we may not be able to invest in production and we may not be able to pursue our business plans. In addition, in order to attract potential collaboration or joint venture partners, or to meet payment milestones under existing or future collaboration agreements, we have in the past and may in the future be required to guarantee or meet certain levels of production costs. If we are unable to reduce our production costs to meet such guarantees or milestones, our net cash flow will be further reduced.

Our ability to establish substantial commercial sales of our products is subject to many risks, any of which could prevent or delay revenue growth and adversely impact our customer relationships, business and results of operations.

There can be no assurance that our products will be approved or accepted by customers, or that we will be able to sell our products profitably at prices and with features sufficient to establish demand. The potential customers for our molecules generally have well developed manufacturing processes and arrangements with suppliers of the chemical components of their products and may have a resistance to changing these processes and components. These potential customers frequently impose lengthy and complex product qualification procedures on their suppliers, influenced by consumer preference, manufacturing considerations such as process changes and capital and other costs associated with transitioning to alternative components, supplier operating history, established business relationships and agreements, regulatory issues, product liability and other factors, many of which are unknown to, or not well understood by, us. Satisfying these processes may take many months. Additionally, we may be subject to product safety testing and may be required to meet certain regulatory and/or product safety standards. Meeting these standards can be a time consuming and expensive process, and we may invest substantial time and resources into such qualification efforts without ultimately securing approval. If we are unable to convince these potential customers (and the consumers who purchase products containing such chemicals) that our products are comparable to the chemicals that they currently use or that the use of our products is otherwise to their benefit, we will not be successful in entering these markets and our business will be adversely affected.

The price and availability of sugarcane and other feedstocks can be volatile as a result of changes in industry policy and may increase the cost of production of our products.

In Brazil, Conselho dos Produtores de Cana, Açúcar e Álcool (Council of Sugarcane, Sugar and Ethanol Producers or Consecana), an industry association of producers of sugarcane, sugar and ethanol, sets market terms and prices for general supply, lease and partnership agreements for sugarcane. If Consecana makes changes to such terms and prices, it could result in higher sugarcane prices and/or a significant decrease in the volume of sugarcane available for the production of our products. In addition, if the availability of sugarcane juice or syrup or other feedstocks is restricted or limited due to weather conditions, land conditions or any other reason, we may not be able to manufacture our products in a timely or cost-effective manner, or at all, which would have a material adverse effect on our business.

We expect to face competition for our products from existing suppliers, including from price declines in petroleum and petroleum-based products, and if we cannot compete effectively against these companies, products or prices, we may not be successful in bringing our products to market, demand for some of our renewable products may decline, or we may be unable to further grow our business.

We expect that our renewable products will compete with both the traditional products that are currently being used in our target markets and with the alternatives to these existing products that established enterprises and new companies are seeking to produce. In the markets that we have entered, and in other markets that we may seek to enter in the future, we will compete primarily with the established providers of ingredients currently used in products in these markets. Producers of these incumbent products include global health and nutrition companies, large international chemical companies and companies specializing in specific products, such as flavor or fragrance ingredients, squalane or essential oils. We may also compete in one or more of these markets with products that are offered as alternatives to the traditional products being offered in these markets.

With the emergence of many new companies seeking to produce products from renewable sources, we may face increasing competition from such companies. As they emerge, some of these companies may be able to establish production capacity and commercial partnerships to compete with us. If we are unable to establish production and sales channels that allow us to offer comparable products at attractive prices, we may not be able to compete effectively with these companies.

We believe the primary competitive factors in our target markets are:

- product price;
- product performance and other measures of quality;

- sustainability; and
- dependability of supply.

The global health and nutrition companies, large international chemical companies and companies specializing in specific products with whom we compete are much larger than us, have, in many cases, well developed distribution systems and networks for their products, have valuable historical relationships with the potential customers we are seeking to serve and have much more extensive sales and marketing programs in place to promote their products. In order to be successful, we must convince customers that our products are at least as effective as the traditional products they are seeking to replace and we must provide our products on a cost basis that does not greatly exceed these traditional products and other available alternatives. Some of our competitors may use their influence to impede the development and acceptance of renewable products of the type that we are seeking to produce.

While most of our products do not compete with, and do not serve as alternatives to, petroleum-based products, we anticipate that some of our renewable products will be marketed as alternatives to corresponding petroleum-based products. We believe that for our renewable products to succeed in the market, we must demonstrate that our products are comparable or better alternatives to existing products and to any alternative products that are being developed for the same markets based on some combination of product cost, availability, performance, and consumer preference characteristics. Declining oil prices, or the perception of a sustained or future decline in oil prices, has adversely affected the prices or demand for such products in the past and may continue to do so. During sustained periods of lower oil prices, we may be unable to sell such products at anticipated levels, which could negatively impact our operating results.

We are subject to risks related to our reliance on collaboration arrangements to fund development and commercialization of our products and the success of such products is uncertain, and our financial results may be adversely impacted, if we fail to meet technical, development or commercial milestones in such agreements.

For most product markets we are seeking to enter, we have collaboration partners to fund the research and development, commercialization and production efforts required for the target products. Typically, we provide limited exclusive rights and revenue sharing with respect to the production and sale of particular products in specific markets in exchange for such up-front funding. These exclusivity, revenue-sharing and other similar terms limit our ability to commercialize our products and technology, and may impact the size of our business or our profitability in ways that we do not currently envision. In addition, none of these agreements affirmatively obligates the other party to purchase specific quantities of any products, and most contain important conditions that must be satisfied before additional research and development funding or product purchases would occur. These conditions include research and development programs and milestones, and technical specifications that must be achieved to the satisfaction of our collaborators. We may focus our efforts and resources on potential discovery efforts, product targets or candidates that require substantial technical, financial and human resources which we cannot be certain we will achieve.

Revenues from these types of relationships are a key part of our cash plan for 2018 and beyond. If we fail to collect expected collaboration revenues, or to identify and add sufficient additional collaborations to fund our planned operations, we may be unable to fund our operations or pursue development and commercialization of our planned products. To achieve our collaboration revenue targets from year to year, we may be forced to enter into agreements that contain less favorable terms. As part of our current and future collaboration arrangements, we may be required to make significant capital investments at our existing or new facilities in order to produce molecules or other products. Any failure or difficulties in establishing, building up or retooling our operations could have a significant negative impact on our business, including our ability to achieve commercial viability for our products, lead to the inability to meet our contractual obligations and could cause us to allocate capital, personnel and other resources from our organization which could adversely affect our business and reputation.

Our collaboration arrangements may restrict or prevent our future business activity in certain markets or industries, which could harm our ability to grow our business.

As part of our collaboration arrangements in the ordinary course of business, we may grant to our partners exclusive rights with respect to the development, production and/or commercialization of particular products or types of products in specific markets in exchange for up-front funding and/or downstream value sharing arrangements. These rights might inhibit potential collaboration or strategic partners or potential customers from entering into negotiations with us about further business opportunities, and we may be restricted or prevented from engaging with other partners or customers in those markets, which may limit our ability to grow our business.

In the past, we have had to grant concessions to existing partners in exchange for such partners waiving or modifying their exclusive rights with respect to a particular product, type of product or market so that we could engage with a third party with respect to such product, product type or market. There can be no assurance that existing partners will be willing to grant waivers of or modify their exclusive rights in the future on favorable terms, if at all. If we are unable to engage other potential partners with respect to particular product types or markets for which we have previously granted exclusive rights, our ability to grow our business would be harmed and our results of operations may be adversely affected.

We have limited control over our joint ventures.

We do not have the right or power to control the management of our joint ventures, and our joint venture partners may take action contrary to our interests or objectives. If our joint venture partners act contrary to our interest, it could harm our brand, business, results of operations and financial condition. In addition, operating a joint venture often requires additional organizational formalities and time-consuming procedures for sharing information and making decisions, which can divert management resources, and if a joint venture partner changes or relationships deteriorate, our success in the joint venture may be materially adversely affected, which could harm our business.

Third parties may misappropriate our yeast strains.

Third parties, including collaborators, contract manufacturers, other contractors and shipping agents, often have custody or control of our yeast strains. If our yeast strains were stolen, misappropriated or reverse engineered, they could be used by other parties who may be able to reproduce the yeast strains for their own commercial gain. If this were to occur, it would be difficult for us to challenge and prevent this type of use, especially in countries where we have limited intellectual property protection or that do not have robust intellectual property law regimes.

Our relationship with Ginkgo Bioworks, Inc. exposes us to financial and commercial risks.

In June 2016, we entered into an initial strategic partnership agreement with Ginkgo Bioworks, Inc. (Ginkgo), pursuant to which we licensed certain intellectual property to Ginkgo in exchange for a license fee and royalty, and agreed to pursue the negotiation and execution of a definitive partnership agreement setting forth the terms of a long-term commercial partnership and collaboration arrangement between us and Ginkgo, and in September 2016 we executed a definitive collaboration agreement with Ginkgo setting forth the terms of a commercial partnership under which the parties would collaborate to develop, manufacture and sell commercial products and would share in the value of such products. In connection with the entry into such commercial agreements, we received a waiver under, and subsequently entered into an amendment of, our senior secured credit facility, the agent and lender under which is an affiliate of Ginkgo, which amendment extended, subject to certain conditions which were satisfied in January 2017, the maturity of the loans under the senior secured credit facility, eliminated principal repayments under the facility prior to maturity, subject to the requirement that we apply certain monies received by us under the collaboration agreement with Ginkgo to repay the outstanding loans under the facility, and waived the covenant in the senior secured loan facility requiring the Company to maintain unrestricted, unencumbered cash in defined U.S. bank accounts in an amount equal to at least 50% of the principal amount outstanding under the facility until the maturity date. In November 2017, we amended the partnership with Ginkgo to reduce the scope of our commercial relationship, and in connection therewith we agreed to guarantee certain minimum payments to Ginkgo under the partnership and issued a $12 million promissory note to Ginkgo. For more details on our transactions with Ginkgo, please see Note 4, “Debt” in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K.

There can be no assurance that our partnership with Ginkgo, as amended, will be successful. In addition, negative developments in our commercial partnership with Ginkgo could negatively affect our relationship with the agent and lender under our senior secured credit facility, an affiliate of Ginkgo, which could adversely impact our ability to incur additional indebtedness in the future or take other actions the consent for which would be required from the agent and lender under the facility. In such event, our financial condition and business operations could be adversely affected.

Certain rights we have granted to Total, DSM and other existing stockholders, including in relation to our future securities offerings, could have substantial impacts on our company.

Under certain agreements between us and Total related to Total’s original investment in our capital stock, for as long as Total owns 10% of our voting securities, it has rights to an exclusive negotiation period if our board of directors decides to sell our company. In addition, in connection with Total’s investments in Amyris, our certificate of incorporation includes a provision that excludes Total from prohibitions on business combinations between Amyris and an “interested stockholder.” These provisions could have the effect of discouraging potential acquirers from making offers to acquire us, and give Total more access to Amyris than other stockholders if Total decides to pursue an acquisition.

In addition, Total, DSM and certain other investors have the right to designate one or more directors to serve on our board of directors pursuant to agreements between us and such investors.

In May 2017, we entered into an agreement with DSM, which was amended and restated in August 2017, pursuant to which we agreed (i) that for as long as there is a DSM-designated director serving on our board of directors, we will not engage in certain commercial or financial transactions or arrangements without the consent of such director, and (ii) to provide DSM with certain exclusive negotiating rights in connection with certain future commercial projects and arrangements. These provisions could discourage other potential partners from approaching us with business opportunities, and could restrict, delay or prevent us from pursuing or engaging in such opportunities, which could adversely affect our business.

Additionally, in connection with investments in Amyris, we granted certain investors, including Total and DSM, a right of first investment if we propose to sell securities in certain financing transactions. With these rights, such investors may subscribe for a portion of any such new financing and require us to comply with certain notice periods, which could discourage other investors from participating in, or cause delays in our ability to close, such a financing. Further, in certain cases such investors have the right to pay for any securities purchased in connection with an exercise of their right of first investment by canceling all or a portion of our debt held by them. To the extent such investors exercise these rights, it will reduce the cash proceeds we may realize from the relevant financing.

A significant portion of our operations are centered in Brazil, and our business will be adversely affected if we do not operate effectively in that country.

For the foreseeable future, we will be subject to risks associated with the concentration of essential product sourcing and operations in Brazil. The Brazilian government has changed in the past, and may change in the future, monetary, taxation, credit, tariff, labor and other policies to influence the course of Brazil's economy. For example, the government's actions to control inflation have involved interest rate adjustments. We have no control over, and cannot predict what policies or actions the Brazilian government may take in the future. Our business, financial performance and prospects may be adversely affected by, among others, the following factors:

- delays or failures in securing licenses, permits or other governmental approvals necessary to build and operate facilities and use our yeast strains to produce products;
- rapid consolidation in the sugar and ethanol industries in Brazil, which could result in a decrease in competition;
- political, economic, diplomatic or social instability in or affecting Brazil;
- changing interest rates;
- tax burden and policies;
- effects of changes in currency exchange rates;
- any changes in currency exchange policy that lead to the imposition of exchange controls or restrictions on remittances abroad;
- inflation;
- land reform or nationalization movements;
- changes in labor related policies;
- export or import restrictions that limit our ability to move our products out of Brazil or interfere with the import of essential materials into Brazil;
- changes in, or interpretations of foreign regulations that may adversely affect our ability to sell our products or repatriate profits to the United States;
- tariffs, trade protection measures and other regulatory requirements;
- compliance with United States and foreign laws that regulate the conduct of business abroad;
- compliance with anti-corruption laws recently enacted in Brazil;
- an inability, or reduced ability, to protect our intellectual property in Brazil including any effect of compulsory licensing imposed by government action; and
- difficulties and costs of staffing and managing foreign operations.

We cannot predict whether the current or future Brazilian government will implement changes to existing policies on taxation, exchange controls, monetary strategy, labor relations, social security and the like, nor can we estimate the impact of any such changes on the Brazilian economy or our operations.

Brazil’s economy has recently experienced quarters of slow or negative gross domestic product growth and has, until 2017, experienced high inflation and a growing fiscal deficit of its federal government accounts. In addition, major corruption scandals involving members of the executive, state-controlled enterprises and large private sector companies have been disclosed and are the subject of ongoing investigation by federal authorities. The final outcome of these investigations and their impact on the Brazilian economy is not yet known and cannot be predicted with

certainty.

In addition, President Trump has made comments suggesting that he is not supportive of certain existing international trade agreements as well as that he might take action to restrict or tax products imported into the U.S. from foreign jurisdictions. At this time, it remains unclear what actions President Trump will or will not take with respect to these international trade agreements or U.S. trade policy. If President Trump takes action to withdraw from or materially modify international trade agreements or place restrictions or tariffs on products imported from Brazil, our business, financial condition and results of operations could be adversely affected.

We maintain operations in foreign jurisdictions other than Brazil, and may in the future expand our operations to additional foreign jurisdictions. Many, if not all of the above-mentioned risks also apply to our operations in such jurisdictions. If any of these risks were to occur, our operations and business would be adversely affected.

Ethical, legal and social concerns about products using genetically modified microorganisms could limit or prevent the use of our products and technologies and could harm our business.

Our technologies and products involve the use of genetically modified microorganisms (GMMs). Public perception about the safety of, and ethical, legal or social concerns over, genetically engineered products, including GMMs, could affect public acceptance of our products. If we are not able to overcome any such concerns relating to our products, our technologies may not be accepted by our customers or end-users. In addition, the use of GMMs has in the past received negative publicity, which could lead to greater regulation or restrictions on imports of our products. Further, there is a risk that products produced using our technologies could cause adverse health effects or other adverse events. If our technologies and products are not accepted by our customers or their end-users due to negative publicity or lack of public acceptance, our business could be significantly harmed.

Our use of genetically-modified feedstocks and yeast strains to produce our products subjects us to risks of regulatory limitations and rejection of our products.

The use of GMMs, such as our yeast strains, is subject to laws and regulations in many countries, some of which are new and some of which are still evolving. In the United States, the Environmental Protection Agency (EPA), regulates the commercial use of GMMs as well as potential products produced from GMMs. Various states or local governments within the United States could choose to regulate products made with GMMs as well. While the strain of genetically modified yeast that we currently use for the development and commercial production of our target molecules, *S. cerevisiae*, is eligible for exemption from EPA review because it is generally recognized as safe, we must satisfy certain criteria to achieve this exemption, including but not limited to use of compliant containment structures and safety procedures, and we cannot be sure that we will meet such criteria in a timely manner, or at all. If exemption of *S. cerevisiae* is not obtained, our business may be substantially harmed. In addition to *S. cerevisiae*, we may seek to use different GMMs in the future that will require EPA approval. If approval of different GMMs is not secured, our ability to grow our business could be adversely affected.

In Brazil, GMMs are regulated by the National Biosafety Technical Commission (CTNBio). We have obtained approvals from CTNBio to use GMMs in a contained environment in our Brazil facilities for research and development purposes as well as at contract manufacturing facilities in Brazil. In addition, we have obtained initial commercial approvals from CTNBio for three of our yeast strains. As we continue to develop new yeast strains and deploy our technology at new production facilities in Brazil, we will be required to obtain further approvals from CTNBio in order to use these strains in commercial production in Brazil. We may not be able to obtain approvals from relevant Brazilian authorities on a timely basis, or at all, and if we do not, our ability to produce our products in Brazil would be impaired, which would adversely affect our results of operations and financial condition.

In addition to our production operations in the United States and Brazil, we have been party to contract manufacturing agreements with parties in other production locations around the world, including Europe. The use of GMM technology is regulated in the European Union, which has established various directives for member states regarding regulation of the use of such technology, including notification processes for contained use of such technology. We expect to encounter GMM regulations in most, if not all, of the countries in which we may seek to establish production capabilities and/or conduct sales to customers or end-use consumers, and the scope and nature of these regulations will likely be different from country to country. If we cannot meet the applicable requirements in other countries in which we intend to produce or sell products using our yeast strains, or if it takes longer than anticipated to obtain such approvals, our business could be adversely affected. Furthermore, there are various governmental, non-governmental and quasi-governmental organizations that review and certify products with respect to the determination of whether products can be classified as “natural” or other similar classifications. While the certification from such governmental, non-governmental and quasi-governmental organizations is generally not mandatory, some of our current or prospective customers, collaborators or distributors may require that we meet the standards set by such organizations as a condition precedent to purchasing or distributing our products. We cannot be certain that we will be able to satisfy the standards of such organizations, and any delay or failure to do so could harm our ability to sell or distribute some or all of our products to certain customers and prospective customers, which could have a negative impact on our business.

We may not be able to obtain regulatory approval for the sale of our renewable products.

Our renewable chemical products may be subject to government regulation in our target markets. In the United States, the EPA administers the Toxic Substances Control Act (the TSCA), which regulates the commercial registration, distribution, and use of many chemicals. Before an entity can manufacture or distribute a new chemical subject to the TSCA, it must file a Pre-Manufacture Notice, or PMN, to add the chemical to a product. The EPA has 90 days to review the filing but may request additional data, which could significantly extend the timeline for approval. As a result, we may not receive EPA approval to list future molecules on the TSCA registry as expeditiously as we would like, resulting in delays or significant increases in testing requirements. A similar program exists in the European Union, called REACH. Under this program, chemicals imported or manufactured in the European Union in certain quantities must be registered with the European Chemicals Agency, and this process could cause delays or entail significant costs. To the extent that other countries in which we are producing or selling (or seeking to produce or sell) our products, such as Brazil and various countries in Asia, rely on TSCA or REACH (or similar laws and programs) for chemical registration or regulation in their jurisdictions, delays with the United States or European authorities, or any relevant authorities in such other countries, may delay entry into these markets as well. In addition, some of our Biofene-derived products are sold for the cosmetics market, and some countries may impose additional regulatory requirements or permits for such uses, which could impair, delay or prevent sales of our products in those markets. Also, certain of our current or proposed products in the Health and Nutrition and Personal Care markets, including alternative sweeteners, nutraceuticals, Flavors & Fragrances ingredients, skincare ingredients and cosmetic actives, may be subject to the approval of and regulation by the FDA, as well as similar agencies of states and foreign jurisdictions where these products are sold or proposed to be sold.

We expect to encounter regulations in most, if not all, of the countries in which we may seek to produce, import or sell our products (and our customers may encounter similar regulations in selling end-use products to consumers), and we cannot assure you that we (or our customers) will be able to obtain necessary approvals in a timely manner or at all. If our products do not meet applicable regulatory requirements in a particular country, then we (or our customers) may not be able to commercialize our products in such country and our business will be adversely affected. In addition, any enforcement action taken by regulators against us or our products could cause us to suffer adverse publicity, which could harm our reputation and our relationship with our customers and vendors.

In addition, many of our products are intended to be a component of our collaborators' and/or customers' (or their customers') end-use products. Such end-use products may be subject to various regulations, including regulations promulgated by the EPA, the FDA, or the European Food Safety Authority. If our company or our collaborators and customers (or their customers) are not successful in obtaining any required regulatory approval for their end-use products that incorporate our products, or fail to comply with any applicable regulations for such end-use products, whether due to our products or otherwise, demand for our products may decline and our revenues will be adversely affected.

Changes in government regulations, including subsidies and economic incentives, could have a material adverse effect on our business.

The markets where we sell our products are heavily influenced by foreign, federal, state and local government regulations and policies. Changes to existing or adoption of new domestic or foreign federal, state and local legislative initiatives that impact the production, distribution or sale of products may harm our business. The uncertainty regarding future standards and policies may also affect our ability to develop our products or to license our technologies to third parties and to sell products to our end customers. Any inability to address these requirements and any regulatory or policy changes could have a material adverse effect on our business, financial condition and results of operations.

Furthermore, the production of our products will depend on the availability of feedstock, especially sugarcane. Agricultural production and trade flows are subject to government policies and regulations. Governmental policies affecting the agricultural industry, such as taxes, tariffs, duties, subsidies, incentives and import and export restrictions on agricultural commodities and commodity products can influence the planting of certain crops, the location and size of crop production, whether unprocessed or processed commodity products are traded, the volume and types of imports and exports, and the availability and competitiveness of feedstocks as raw materials. Future government policies may adversely affect the supply of feedstocks, restrict our ability to use sugarcane or other feedstocks to produce our products, or encourage the use of feedstocks more advantageous to our competitors, which would put us at a commercial disadvantage and could negatively impact our future revenues and results of operations.

We may incur significant costs to comply with environmental laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.

We use intermediate substances, hazardous chemicals and radioactive and biological materials in our business, and such materials are subject to a variety of federal, state and local laws and regulations governing the use, generation, manufacture, storage, handling and disposal of these materials in the United States, European Union and Brazil. Although we have implemented safety procedures for handling and disposing of these materials and related waste products in an effort to comply with these laws and regulations, we cannot be sure that our safety measures and those of our contractors will prevent accidental injury or contamination from the use, storage, handling or disposal of hazardous materials. In the event of contamination or injury, we could be held liable for any resulting damages, and any liability could exceed our insurance coverage. There can be no assurance that violations of environmental, health and safety laws will not occur in the future as a result of human error, accident, equipment failure or other causes. Compliance with applicable environmental laws and regulations may be expensive, and the failure to comply with past, present, or future laws could result in the imposition of fines, third party property damage, product liability and personal injury claims, investigation and remediation costs, the suspension of production, or a cessation of operations, and our liability may exceed our total assets. Liability under environmental laws can be joint and several, without regard to comparative fault, and may be punitive in nature. Furthermore, environmental laws could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations, which could impair our research, development or production efforts and otherwise harm our business.

Our proprietary rights may not adequately protect our technologies and product candidates.

Our commercial success will depend substantially on our ability to obtain patents and maintain adequate legal protection for our technologies and product candidates in the United States and other countries. As of December 31, 2017, we had 474 issued United States and foreign patents and 315 pending United States and foreign patent applications that were owned or co-owned by or licensed to us. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies and future products are covered by valid and enforceable patents or are effectively maintained as trade secrets.

We apply for patents covering both our technologies and product candidates, as we deem appropriate. However, filing, prosecuting, maintaining and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States are less extensive than those in the United States. We may also fail to apply for patents on important technologies or product candidates in a timely fashion, or at all. Our existing and future patents may not be sufficiently broad to prevent others from practicing our technologies or from designing products around our patents or otherwise developing competing products or technologies. In addition, the patent positions of companies like ours are highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of patent claims has emerged to date in the United States and the landscape is expected to become even more uncertain in view of recent rule changes by the United States Patent Office, or USPTO. Additional uncertainty may result from legal decisions by the United States Federal Circuit and Supreme Court as they determine legal issues concerning the scope and construction of patent claims and inconsistent interpretation of patent laws or from legislation enacted by the U.S. Congress. The patent situation outside of the United States is even less predictable. As a result, the validity and enforceability of patents cannot be predicted with certainty. Moreover, we cannot be certain whether:

- we (or our licensors) were the first to make the inventions covered by each of our issued patents and pending patent applications;
- we (or our licensors) were the first to file patent applications for these inventions;
- others will independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our or our licensors' patents will be valid or enforceable;
- any patents issued to us (or our licensors) will provide us with any competitive advantages, or will be challenged by third parties;
- we will develop additional proprietary products or technologies that are patentable; or
- the patents of others will have an adverse effect on our business.

We do not know whether any of our pending patent applications or those pending patent applications that we license will result in the issuance of any patents. Even if patents are issued, they may not be sufficient to protect our technology or product candidates. The patents we own or license and those that may be issued in the future may be challenged, invalidated, rendered unenforceable, or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages. Moreover, third parties could practice our inventions in territories where we do not have patent protection or in territories where they could obtain a compulsory license to our technology where patented. Such third parties may then try to import products made using our

inventions into the United States or other territories. Accordingly, we cannot ensure that any of our pending patent applications will result in issued patents, or even if issued, predict the breadth, validity and enforceability of the claims upheld in our and other companies' patents.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries do not favor the enforcement of patents or other intellectual property rights, which could hinder us from preventing the infringement of our patents or other intellectual property rights. Proceedings to enforce our patent rights in the United States or foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert patent infringement or other claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license from third parties.

Unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. Monitoring unauthorized use of our intellectual property is difficult, and we cannot be certain that the steps we have taken will prevent unauthorized use of our technology, particularly in certain foreign countries where the local laws may not protect our proprietary rights as fully as in the United States or may provide, today or in the future, for compulsory licenses. If competitors are able to use our technology, our ability to compete effectively could be harmed. Moreover, others may independently develop and obtain patents for technologies that are similar to, or superior to, our technologies. If that happens, we may need to license these technologies, and we may not be able to obtain licenses on reasonable terms, if at all, which could cause harm to our business.

We rely in part on trade secrets to protect our technology, and our failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We rely on trade secrets to protect some of our technology, particularly where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to maintain and protect. Our strategy for contract manufacturing and scale-up of commercial production requires us to share confidential information with our international business partners and other parties. Our product development collaborations with third parties, including with Total and Ginkgo, require us to share certain confidential information,. While we use reasonable efforts to protect our trade secrets, our or our business partners' employees, consultants, contractors or scientific and other advisors may unintentionally or willfully disclose our proprietary information to competitors. Enforcement of claims that a third party has illegally obtained and is using trade secrets is expensive, time consuming and uncertain. In addition, foreign courts are sometimes less willing than United States courts to protect trade secrets. If our competitors independently develop equivalent knowledge, methods and know-how, we would not be able to assert our trade secrets against them.

We require new employees and consultants to execute proprietary information and inventions agreements upon the commencement of an employment or consulting arrangement with us. We additionally require contractors, advisors, corporate collaborators, outside scientific collaborators and other third parties that may receive trade secret information to execute such agreements. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. Nevertheless, our proprietary information may be disclosed, or these agreements may be unenforceable or difficult to enforce. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. Additionally, trade secret law in Brazil differs from that in the United States, which requires us to take a different approach to protecting our trade secrets in Brazil. Some of these approaches to trade secret protection may be novel and untested under Brazilian law and we cannot guarantee that we would prevail if our trade secrets are contested in Brazil. If any of the above risks materializes, our failure to obtain or maintain trade secret protection could adversely affect our competitive business position

If we or one of our collaborators is sued for infringing intellectual property rights or other proprietary rights of third parties, litigation could be costly and time consuming and could prevent us from developing or commercializing our future products.

Our commercial success depends on our and our collaborators' ability to operate without infringing the patents and proprietary rights of other parties and without breaching any agreements we have entered into with regard to our technologies and product candidates. We cannot determine with certainty whether patents or patent applications of other parties may materially affect our ability to conduct our business. Our industry spans several sectors, including biotechnology, renewable fuels, renewable specialty chemicals and other renewable compounds, and is characterized by the existence of a significant number of patents and disputes regarding patent and other intellectual property rights. Because patent applications can take several years to issue, there may currently be pending applications, unknown to us, that may result in issued patents that cover our technologies or product candidates. There may be a significant number of patents and patent applications relating to aspects of our technologies filed by, and issued to, third parties. The existence of third-party patent applications and patents could significantly reduce the coverage of patents owned by or licensed to us and our collaborators and limit our ability to obtain meaningful patent protection. If we wish to make, use, sell, offer to sell, or import the technology or compound claimed in issued and unexpired patents owned by others, we may need to obtain a license from the owner, develop or obtain alternative technologies, enter into litigation to challenge the validity of the patents or incur the risk of litigation in the event that the owner asserts that we infringe its patents. If patents containing competitive or conflicting claims are issued to third parties and these claims are ultimately determined to be valid, we and our collaborators may be enjoined from pursing research, development, or commercialization of products, or be required to obtain licenses to these patents, or to develop or obtain alternative technologies.

If a third party asserts that we infringe upon its patents or other proprietary rights, we could face a number of issues that could seriously harm our competitive position, including:

- infringement and other intellectual property claims, which could be costly and time consuming to litigate, whether or not the claims have merit, and which could delay getting our products to market and divert management attention from our business;
- substantial damages for past infringement, which we may have to pay if a court determines that our product candidates or technologies infringe a third party's patent or other proprietary rights;
- a court prohibiting us from selling or licensing our technologies or future products unless the holder licenses the patent or other proprietary rights to us, which it is not required to do; and
- if a license is available from a third party, such third party may require us to pay substantial royalties or grant cross licenses to our patents or proprietary rights.

The industries in which we operate, and the biotechnology industry in particular, are characterized by frequent and extensive litigation regarding patents and other intellectual property rights. Many biotechnology companies have employed intellectual property litigation as a way to gain a competitive advantage. If any of our competitors have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in interference proceedings declared by the relevant patent regulatory agency to determine priority of invention and, thus, the right to the patents for these inventions in the United States. These proceedings could result in substantial cost to us even if the outcome is favorable. Even if successful, an interference proceeding may result in loss of certain claims. Our involvement in litigation, interferences, opposition proceedings or other intellectual property proceedings inside and outside of the United States, to defend our intellectual property rights, or as a result of alleged infringement of the rights of others, may divert management time from focusing on business operations and could cause us to spend significant resources, all of which could harm our business and results of operations.

Many of our employees were previously employed at universities, biotechnology, specialty chemical or oil companies, including our competitors or potential competitors. We may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel and be enjoined from certain activities. A loss of key research personnel or their work product could hamper or prevent our ability to commercialize our product candidates, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and demand on management resources.

We may need to commence litigation to enforce our intellectual property rights, which would divert resources and management's time and attention and the results of which would be uncertain.

Enforcement of claims that a third party is using our proprietary rights without permission is expensive, time consuming and uncertain. Significant litigation would result in substantial costs, even if the eventual outcome is favorable to us and would divert management's attention from our business objectives. In addition, an adverse

outcome in litigation could result in a substantial loss of our proprietary rights and we may lose our ability to exclude others from practicing our technology or producing our product candidates.

The laws of some foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology and/or bioindustrial technologies. This could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Moreover, our efforts to protect our intellectual property rights in such countries may be inadequate.

We do not have exclusive rights to intellectual property we develop under U.S. federally funded research grants and contracts, including with DARPA and DOE, and we could ultimately share or lose the rights we do have under certain circumstances.

Some of our intellectual property rights have been or may be developed in the course of research funded by the U.S. government, including under our agreements with DARPA and DOE. As a result, the U.S. government may have certain rights to intellectual property embodied in our current or future products pursuant to the Bayh-Dole Act of 1980. Government rights in certain inventions developed under a government-funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the U.S. government has the right to require us, or an assignee or exclusive licensee to such inventions, to grant licenses to any of these inventions to a third party if they determine that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; (iii) government action is necessary to meet requirements for public use under federal regulations; or (iv) the right to use or sell such inventions is exclusively licensed to an entity within the U.S. and substantially manufactured outside the U.S. without the U.S. government's prior approval. Additionally, we may be restricted from granting exclusive licenses for the right to use or sell our inventions created pursuant to such agreements unless the licensee agrees to additional restrictions (e.g., manufacturing substantially all of the invention in the U.S.). The U.S. government also has the right to take title to these inventions if we fail to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. In addition, the U.S. government may acquire title in any country in which a patent application is not filed within specified time limits. Additionally, certain inventions are subject to transfer restrictions during the term of these agreements and for a period thereafter, including sales of products or components, transfers to foreign subsidiaries for the purpose of the relevant agreements, and transfers to certain foreign third parties. If any of our intellectual property becomes subject to any of the rights or remedies available to the U.S. government or third parties pursuant to the Bayh-Dole Act of 1980, this could impair the value of our intellectual property and could adversely affect our business.

Loss of, or inability to secure government contract revenues could impair our business.

We have contracts or subcontracts with certain governmental agencies or their contractors, including DARPA and DOE. Generally, these agreements, as they may be amended or modified from time to time, have fixed terms and may be terminated, modified or be subject to recovery of payments by the government agency under certain conditions (such as failure to comply with detailed reporting and governance processes or failure to achieve milestones). Under these agreements, we are also subject to audits, which can result in corrective action plans and penalties up to and including termination. If these governmental agencies terminate these agreements with us, it could reduce our revenues which could harm our business. Additionally, we anticipate securing additional government contracts as part of our business plan for 2018 and beyond. If we are unable to secure such government contracts, it could harm our business.

Our products subject us to product-safety risks, and we may be sued for product liability.

The design, development, production and sale of our products involve an inherent risk of product liability claims and the associated adverse publicity. Our potential products could be used by a wide variety of consumers with varying levels of sophistication. Although safety is a priority for us, we are not always in control of the final uses and formulations of the products we supply or their use as ingredients. Our products could have detrimental impacts or adverse impacts we cannot anticipate. Despite our efforts, negative publicity about Amyris, including product safety or similar concerns, whether real or perceived, could occur, and our products could face withdrawal, recall or other quality issues. In addition, we may be named directly in product liability suits relating to our products, even for defects resulting from errors of our commercial partners, contract manufacturers, chemical finishers or customers or end users of our products. These claims could be brought by various parties, including customers who are purchasing products directly from us or other users who purchase products from our customers. We could also be named as co-parties in product liability suits that are brought against the contract manufacturers with whom we partner to produce our products. Insurance coverage is expensive, may be difficult to obtain and may not be available in the future on acceptable terms. We cannot be certain that our contract manufacturers or the sugar and ethanol producers who partner with us to produce our products will have adequate insurance coverage to cover against potential claims. Any insurance we do maintain may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, our business would be adversely impacted. In addition, insurance coverage may become more expensive, which would harm our results of operations.

We may become subject to lawsuits or indemnity claims in the ordinary course of business, which could materially and adversely affect our business and results of operations.

From time to time, we may in the ordinary course of business be named as a defendant in lawsuits, indemnity claims and other legal proceedings. These actions may seek, among other things, compensation for alleged personal injury, employment discrimination, breach of contract, property damage and other losses or injunctive or declaratory relief. In the event that such actions, claims or proceedings are ultimately resolved unfavorably to us at amounts exceeding our accrued liability, or at material amounts, the outcome could materially and adversely affect our reputation, business and results of operations. In addition, payments of significant amounts, even if reserved, could adversely affect our liquidity position. For more information regarding our current legal proceedings, please refer to the section entitled "Legal Proceedings" in Part I, Item 3 of this Annual Report on Form 10-K.

Loss of key personnel, including key management personnel, and/or failure to attract and retain additional personnel could delay our product development programs and harm our research and development efforts and our ability to meet our business objectives.

Our business involves complex, global operations across a variety of markets and requires a management team and employee workforce that is knowledgeable in the many areas in which we operate. As we continue to build our business, we will need to hire and retain qualified research and development, management and other personnel to succeed. The process of hiring, training and successfully integrating qualified personnel into our operations, in the United States, Brazil and other countries in which we may seek to operate, is a lengthy and expensive one. The market for qualified personnel is very competitive because of the limited number of people available who have the necessary technical skills and understanding of our technology and products, particularly in Brazil. Our failure to hire and retain qualified personnel could impair our ability to meet our research and development and business objectives and adversely affect our results of operations and financial condition.

The loss of any key member of our management or key technical and operational employees, or the failure to attract or retain such employees, could prevent us from developing and commercializing our products for our target markets and executing our business strategy. In addition, we may not be able to attract or retain qualified employees in the future due to the intense competition for qualified personnel among biotechnology and other technology-based businesses. Furthermore, reductions to our workforce as part of potential cost-saving measures, such as those discussed above with respect to our 2018 operating plan, may make it more difficult for us to attract and retain key employees. If we do not maintain the necessary personnel to accomplish our business objectives, we may experience staffing constraints that will adversely affect our ability to meet the demands of our collaborators and customers in a timely fashion or to support our internal research and development programs and operations. In particular, our product and process development programs depend on our ability to attract and retain highly skilled technical and operational personnel. Competition for such personnel from numerous companies and academic and other research institutions may limit our ability to do so on acceptable terms. All of our employees are "at-will" employees, which means that either the employee or we may terminate their employment at any time.

We may not be able to fully enforce covenants not to compete with and not to solicit our employees, and therefore we may be unable to prevent our competitors from benefiting from the expertise of such employees.

Our proprietary information and inventions agreements with our employees contain non-compete and non-solicitation provisions. These provisions prohibit our employees from competing directly with our business or proposed business or working for our competitors during their term of employment, and from directly or indirectly soliciting our employees or consultants to leave our company for any purpose. Under applicable U.S. and Brazilian law, we may be unable to enforce these provisions. If we cannot enforce these provisions with our employees, we may be unable to prevent our competitors from benefiting from the expertise of such employees. Even if these provisions are enforceable, they may not adequately protect our interests. The defection of one or more of our employees to a competitor could materially adversely affect our business, results of operations and ability to capitalize on our proprietary information.

Our operations rely on sophisticated information technology and equipment systems, a disruption of which could harm our operations.

We rely on various information technology and equipment systems, some of which are dependent on services provided by third parties, to manage our technology platform and operations. These systems provide critical data and services for internal and external users, including research and development activities, procurement and inventory management, transaction processing, financial, commercial and operational data, human resources management, legal and tax compliance and other processes necessary to operate and manage our business. These systems are complex and are frequently updated as technology improves, and include software and hardware that is licensed, leased or purchased from third parties. If our information technology and equipment systems experience breaches or other failures or disruptions, our systems and the information contained therein could be compromised. While we have implemented security measures and disaster recovery plans designed to mitigate the effects of any failures or disruption of these systems, such measures may not adequately prevent adverse events such as breaches or failures from occurring or mitigate their severity if they do occur. If our information technology or equipment systems are breached, damaged or fail to function properly due to internal errors or defects, implementation or integration issues, catastrophic events or power outages, we may experience a material disruption in our ability to manage our business operations. Failure or disruption of these systems could have an adverse effect on our operating results and financial condition.

Growth may place significant demands on our management and our infrastructure.

We have experienced, and expect to continue to experience, expansion of our business as we continue to make efforts to develop and bring our products to market. We have grown from 18 employees at the end of 2005 to 414 full-time employees at December 31, 2017. Our growth and diversified operations have placed, and may continue to place, significant demands on our management and our operational and financial infrastructure. In particular, continued growth could strain our ability to:

- manage multiple research and development programs;
- operate multiple manufacturing facilities around the world;
- develop and improve our operational, financial and management controls;
- enhance our reporting systems and procedures;
- recruit, train and retain highly skilled personnel;
- develop and maintain our relationships with existing and potential business partners;
- maintain our quality standards; and
- maintain customer satisfaction.

Managing our growth will require significant expenditures and allocation of valuable management resources. If we fail to achieve the necessary level of efficiency in our organization as it grows, our business, results of operations and financial condition would be adversely impacted.

We have identified material weaknesses in our internal control over financial reporting which, if not corrected, could affect the reliability of our consolidated financial statements and have other adverse consequences.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. Section 404 of the Sarbanes-Oxley Act of 2002 (Section 404) and related SEC rules require management to assess the effectiveness of our internal control over financial reporting. Based on the assessment as of December 31, 2017, our management believes that our internal control over financial reporting was not effective at that date due to a material weakness we identified. A material weakness is a deficiency, or combination of control deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. The material weakness we identified relates to (i) an insufficient number of trained resources with assigned responsibility and accountability over the design and operation of internal controls related to complex, significant non-routine transactions as well as routine transactions and financial statement presentation and disclosure, (ii) ineffective risk assessment processes to identify and analyze necessary changes in significant accounting policies and practices that were responsive to changes in business operations resulting from complex, significant non-routine transactions, implementation of new accounting standards and related disclosures, and completeness and adequacy of required disclosures, and (iii) an ineffective information and communication process to ensure that processes and controls were effectively documented and disseminated to enable financial personnel to effectively carry out their roles and responsibilities. See Part II, Item 9A “Controls and Procedures” of this Annual Report on Form 10-K for

additional information. If not remediated, the material weakness could result in a material misstatement to our annual or interim consolidated financial statements that would not be prevented or detected on a timely basis. Our management has developed, and begun to implement, a plan to remediate the material weakness. We cannot, however, assure you that we will be able to implement the plan, or to remediate the material weakness in a timely manner. Furthermore, during the course of re-design of existing processes and controls, implementation of additional processes and controls and testing of the operating effectiveness of such re-designed and additional processes and controls, we may identify additional control deficiencies that could give rise to other material weaknesses, in addition to the currently identified material weakness. We expect the remediation plan to extend over multiple financial reporting periods in 2018. If our remedial measures are insufficient to address the material weakness, or if additional material weaknesses or significant deficiencies in our internal controls are discovered or occur in the future, we may be unable to report our financial results accurately or on a timely basis, which could cause our reported financial results to be materially misstated and result in the loss of investor confidence and adversely affect the market price of our common stock and our ability to access the capital markets, and we could be subject to sanctions or investigations by the NASDAQ Stock Market (NASDAQ), the SEC or other regulatory authorities.

If we fail to maintain an effective system of internal controls, we may not be able to report our financial results accurately or in a timely manner or prevent fraud; in that case, our stockholders could lose confidence in our financial reporting, which would harm our business and could negatively impact the price of our stock.

Effective internal controls are necessary for us to provide reliable financial reports and help us to prevent fraud. The process of implementing our internal controls and complying with Section 404 is expensive and time consuming, and requires significant attention of management. We cannot be certain that these measures will ensure that we maintain adequate controls over our financial processes and reporting in the future. In addition, to the extent we create joint ventures or have any variable interest entities and the financial statements of such entities are not prepared by us, we will not have direct control over their financial statement preparation. As a result, we will, for our financial reporting, depend on what these entities report to us, which could result in us adding monitoring and audit processes and increase the difficulty of implementing and maintaining adequate controls over our financial processes and reporting in the future and could lead to delays in our external reporting. In particular, this may occur where we are establishing such entities with commercial partners that do not have sophisticated financial accounting processes in place, or where we are entering into new relationships at a rapid pace, straining our integration capacity. Additionally, if we do not receive the information from the joint venture or variable interest entity on a timely basis, it could cause delays in our external reporting. Even if we conclude in the future that our internal control over financial reporting provides reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles, because of its inherent limitations, internal control over financial reporting may not prevent or detect fraud or misstatements. Failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our results of operations or cause us to fail to meet our reporting obligations, which could reduce the market's confidence in our financial statements and harm our stock price.

Our international operations expose us to the risk of fluctuation in currency exchange rates and rates of foreign inflation, which could adversely affect our results of operations.

We currently incur significant costs and expenses in Brazilian real and may in the future incur additional expenses in foreign currencies and derive a portion of our revenues in the local currencies of customers throughout the world. As a result, our revenues and results of operations are subject to foreign exchange fluctuations, which we may not be able to manage successfully. During the past few decades, the Brazilian currency in particular has faced frequent and substantial exchange rate fluctuations in relation to foreign currencies mostly because of political and economic conditions. There can be no assurance that the Brazilian real will not significantly appreciate or depreciate against the United States dollar in the future. We also bear the risk that the rate of inflation in the foreign countries where we incur costs and expenses or the decline in value of the United States dollar compared to those foreign currencies will increase our costs as expressed in United States dollars. For example, future measures by the Central Bank of Brazil to control inflation, including interest rate adjustments, intervention in the foreign exchange market and actions to fix the value of the real, may weaken the United States dollar in Brazil. Whether in Brazil or elsewhere, we may not be able to adjust the prices of our products to offset the effects of inflation or foreign currency appreciation on our cost structure, which could increase our costs and reduce our net operating margins. If we do not successfully manage these risks through hedging or other mechanisms, our revenues and results of operations could be adversely affected.

Our U.S. GAAP operating results could fluctuate substantially due to the accounting for embedded derivatives in our convertible promissory notes and convertible preferred stock.

Features in several of our outstanding convertible debt instruments are accounted for under Accounting Standards Codification 815, Derivatives and Hedging, or ASC 815, as embedded derivatives. For instance, with respect to the 2015 144A Notes, if the holders elect to convert their 2015 144A Notes, such converting holders will receive an early conversion payment equal to the present value of the remaining scheduled payments of interest that would have been made on the 2015 144A Notes being converted through April 15, 2019, the maturity date of the 2015 144A Notes. The early conversion payment features of the 2015 144A Notes are accounted for under ASC 815 as embedded derivatives. ASC 815 requires companies to bifurcate conversion options from their host instruments and account for them as free standing derivative financial instruments according to certain criteria. The fair value of the derivative is remeasured to fair value at each balance sheet date, with a resulting non-cash gain or loss related to the change in the fair value of the derivative being charged to earnings (loss). We have determined that we must bifurcate and account for the early conversion payment features of some of our debt instruments, including the 2015 144A Notes, as well as certain other features of our other convertible debt instruments, as embedded derivatives in accordance with ASC 815. We have recorded these embedded derivative liabilities as non-current liabilities on our consolidated balance sheet with a corresponding discount at the date of issuance that is netted against the principal amount of the 2015 144A Notes or other convertible debt instrument, as applicable. The derivative liabilities are remeasured to fair value at each balance sheet date, with a resulting non-cash gain or loss related to the change in the fair value of the derivative liabilities being recorded in other income or loss. There is no current observable market for this type of derivative and, as such, we determine the fair value of the embedded derivatives using the binomial lattice model. The valuation model uses the stock price, conversion price, maturity date, risk-free interest rate, estimated stock volatility and estimated credit spread. Changes in the inputs for these valuation models may have a significant impact on the estimated fair value of the embedded derivative liabilities. For example, an increase in our stock price results in an increase in the estimated fair value of the embedded derivative liabilities. The embedded derivative liabilities may have, on a U.S. GAAP basis, a substantial effect on our balance sheet from quarter to quarter and it is difficult to predict the effect on our future U.S. GAAP financial results, since valuation of these embedded derivative liabilities are based on factors largely outside of our control and may have a negative impact on our earnings and balance sheet. The effects of these embedded derivatives may cause our U.S. GAAP operating results to be below expectations, which may cause our stock price to decline.

Our ability to use our net operating loss carryforwards to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code (the Code), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-ownership change net operating loss carryforwards (NOLs) to offset future taxable income. During the three years ended December 31, 2017, changes in our share ownership resulted in a significant reduction in our NOLs. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code; if that occurs, our ability to utilize NOLs could be further limited by Section 382 of the Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations under Section 382 of the Code. For these reasons, we may not be able to utilize a material portion of our NOLs as of December 31, 2017, even if we attain profitability, which could adversely affect our results of operations.

If we fail to comply with our obligations as a public company, our business may be adversely affected.

As a public company, we incur significant legal, accounting and other expenses in connection with our obligations under applicable securities laws, including the internal and external costs of maintaining the system of internal controls discussed above as well as the costs of preparing and distributing periodic public reports, including financial statements and footnotes. In addition, changing laws, rules and regulations relating to corporate governance and public disclosure, including regulations implemented by the SEC and NASDAQ, increase our legal and financial costs, including costs relating to monitoring, evaluating and complying with such laws, rules and regulations. These laws, rules and regulations are subject to varying interpretations and may evolve over time as new guidance is provided by regulatory and governing bodies, which may result in increased compliance and governance costs and the diversion of management resources. If our efforts to comply with such laws, rules and regulations are not successful, we could be subject to fines, penalties or regulatory proceedings, which can be time consuming and costly to litigate and could lead to negative publicity about our company. These events could also make it more difficult for us to attract and retain qualified members of our board of directors, executive officers and other employees. If any of these risks occur, or if these requirements divert our management's attention from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile.

The market price of our common stock has been, and we expect it to continue to be, subject to significant volatility, and it has declined significantly from our initial public offering price. As of December 31, 2017, the reported closing price of our common stock on NASDAQ was $3.75 per share. Market prices for securities of early stage companies have historically been particularly volatile. Such fluctuations could be in response to, among other things, the factors described in this “Risk Factors” section, or other factors, some of which are beyond our control, such as:

- fluctuations in our financial results or outlook or those of companies perceived to be similar to us;
- changes in estimates of our financial results or recommendations by securities analysts;
- changes in market valuations of similar companies;
- changes in the prices of commodities associated with our business such as sugar, ethanol and petroleum or changes in the prices of commodities that some of our products may replace, such as oil and other petroleum sourced products;
- changes in our capital structure, such as future issuances of securities or the incurrence of debt;
- announcements by us or our competitors of significant contracts, acquisitions or strategic partnerships;

- regulatory developments in the United States, Brazil, and/or other foreign countries;
- litigation involving us, our general industry or both;
- additions or departures of key personnel;
- investors' general perception of us; and
- changes in general economic, industry and market conditions.

Furthermore, stock markets have experienced price and volume fluctuations that have affected, and continue to affect, the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market fluctuations, as well as general economic, political and market conditions, such as recessions, interest rate changes and international currency fluctuations, may negatively affect the market price of our common stock.

In the past, many companies that have experienced volatility and sustained declines in the market price of their stock have become subject to securities class action and derivative action litigation. We were involved in two such lawsuits which were dismissed in 2014, were involved in one such lawsuit that was dismissed in September 2017, and are currently involved in four such lawsuits, as described in more detail below under "Legal Proceedings," and we may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

If our common stock is delisted from NASDAQ, our business, financial condition, results of operations and stock price could be adversely affected, and the liquidity of our stock and our ability to obtain financing could be impaired.

On June 14, 2016, we received a notice from NASDAQ notifying us that we were not in compliance with the requirement of NASDAQ Listing Rule 5450(a)(1) for continued listing on The NASDAQ Global Market (the Minimum Bid Price Listing Rule), as a result of the closing bid price of our common stock being below $1.00 per share for 30 consecutive business days. In accordance with NASDAQ Listing Rule 5810(c)(3)(A), we had 180 calendar days, or until December 12, 2016, to regain compliance with the Minimum Bid Price Listing Rule. To regain compliance, the closing bid price of our common stock had to be at least $1.00 per share for a minimum of 10 consecutive business days. On November 1, 2016, we received a notice from NASDAQ that we had regained compliance with the Minimum Bid Price Listing Rule. Subsequently, on December 19, 2016, we received a notice from NASDAQ notifying us that we were again not in compliance with the Minimum Bid Price Listing Rule as a result of the closing bid price of our common stock being below $1.00 per share for 30 consecutive business days. In accordance with NASDAQ Listing Rule 5810(c)(3)(A), we had 180 calendar days, or until June 19, 2017, to regain compliance with the Minimum Bid Price Listing Rule. On June 5, 2017, after receiving board and stockholder approval, we amended our certificate of incorporation to implement a 1-for-15 reverse stock split of our common stock as well as a reduction of the total number of authorized shares of our common stock from 500,000,000 to 250,000,000. On June 20, 2017, we received a letter from NASDAQ notifying us that we had regained compliance with the Minimum Bid Price Listing Rule as a result of the closing bid price of our common stock being at $1.00 per share or greater for the 10 consecutive business days from June 6, 2017 to June 19, 2017. There can be no assurance that we will maintain compliance with the Minimum Bid Price Listing Rule in the future or that our common stock

will remain listed on NASDAQ.

Any delisting of our common stock from NASDAQ could adversely affect our ability to attract new investors, decrease the liquidity of our outstanding shares of common stock, reduce our flexibility to raise additional capital, reduce the price at which our common stock trades, and increase the transaction costs inherent in trading such shares with overall negative effects for our stockholders. In addition, the delisting of our common stock could deter broker-dealers from making a market in or otherwise seeking or generating interest in our common stock, and might deter certain institutions and persons from investing in our securities at all. Furthermore, the delisting of our common stock from NASDAQ would constitute a breach under certain of our financing agreements, including agreements governing our outstanding convertible indebtedness, which could result in an acceleration of such indebtedness. If such indebtedness is accelerated, it would generally also constitute an event of default under our other outstanding indebtedness, permitting acceleration of such other outstanding indebtedness as well. For these reasons and others, the delisting of our common stock from NASDAQ could materially adversely affect our business, financial condition and results of operations.

The concentration of our capital stock ownership with insiders will limit the ability of other stockholders to influence corporate matters and presents risks related to the operations of our significant stockholders.

As of December 31, 2017, the company’s significant stockholders held an aggregate total of 51.2% of the company’s total common shares outstanding, as follows: DSM (19%), Foris Ventures, LLC (Foris) (9.4%), Total (9.4%), Maxwell (Mauritius) Pte Ltd (Temasek) (7.2%) and Vivo Capital LLC (Vivo) (6.2%). Furthermore, DSM, Foris, Total, Temasek and Vivo each hold convertible preferred stock, convertible promissory notes and/or warrants, pursuant to which they may acquire additional shares of our common stock and thereby increase their ownership interest in our company. This significant concentration of share ownership may adversely affect the trading price of our common stock because investors often perceive disadvantages in owning stock in companies with stockholders with significant interests. Also, these stockholders, acting together, may be able to control or significantly influence our management and affairs and matters requiring stockholder approval, including the election of directors and the approval of significant corporate transactions, such as mergers, consolidations or the sale of all or substantially all of our assets, and may not act in the best interests of our other stockholders. Consequently, this concentration of ownership may have the effect of delaying or preventing a change of control, or a change in our management or board of directors, or discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of our company, even if such actions would benefit our other stockholders.

The concentration of our capital stock ownership also presents risks related to the operations of our significant stockholders, including their international operations. For example, certain affiliates of Total that we do not control and that may be deemed to be our affiliates solely due to their control by Total may be deemed to have engaged in certain transactions or dealings with the government of Iran in 2017, for which Total has provided disclosure under Section 13(r) of the Exchange Act. Such disclosure is set forth in Exhibit 99.1 to this annual report on Form 10-K and is incorporated herein by reference. Disclosure of such activity, even if such activity is not subject to sanctions under applicable law, and any sanctions actually imposed on Total as a result of these activities or for other violations of applicable laws, such as anti-bribery laws, could harm our reputation and have a negative impact on our business.

In addition, certain of our significant stockholders are also commercial partners, including DSM and Total, and have various rights in connection with their security ownership in us. These stockholders may have interests that are different from those of our other stockholders, including with respect to our company's commercial transactions. While we have a related-party transactions policy that requires certain approvals of any transaction between our company and a significant stockholder or its affiliates, there can be no assurance that our significant stockholders will act in the best interests of our other stockholders, which could harm our results of operations and cause our stock price to decline.

The market price of our common stock could be negatively affected by future sales of our common stock.

If our existing stockholders, particularly our largest stockholders, our directors, their affiliates, or our executive officers, sell a substantial number of shares of our common stock in the public market, the market price of our common stock could decrease significantly. The perception in the public market that these stockholders might sell our common stock could also depress the market price of our common stock and could impair our future ability to obtain capital, especially through an offering of equity securities.

We have in place, or have agreed to file, registration statements for the resale of certain shares of our common stock held by, or issuable to, certain of our largest stockholders. All of our common stock sold pursuant to an offering covered by such registration statements will be freely transferable. In addition, shares of our common stock issued or issuable under our equity incentive plans have been registered on Form S-8 registration statements and may be freely sold in the public market upon issuance, except for shares held by affiliates who have certain restrictions on their ability to sell.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If any of the analysts who cover us change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any analyst who may cover us were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

We do not expect to declare any dividends in the foreseeable future.

We do not anticipate declaring any cash dividends to holders of our common stock in the foreseeable future. In addition, certain of our equipment leases and credit facilities currently restrict our ability to pay dividends. Consequently, investors may need to rely on sales of their shares of our common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. Investors seeking cash dividends should not purchase our common stock.

Anti-takeover provisions contained in our certificate of incorporation and bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

Our certificate of incorporation and bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it more difficult for stockholders to nominate directors and take other corporate actions. These provisions include:

- a staggered board of directors;
- authorizing the board of directors to issue, without stockholder approval, preferred stock with rights senior to those of our common stock;
- authorizing the board of directors to amend our bylaws, to increase the number of directors and to fill board vacancies until the end of the term of the applicable class of directors;
- prohibiting stockholder action by written consent;
- limiting the liability of, and providing indemnification to, our directors and officers;
- eliminating the ability of our stockholders to call special meetings; and
- requiring advance notification of stockholder nominations and proposals.

Section 203 of the Delaware General Corporation Law prohibits, subject to some exceptions, "business combinations" between a Delaware corporation and an "interested stockholder," which is generally defined as a stockholder who becomes a beneficial owner of 15% or more of a Delaware corporation's voting stock, for a three-year period following the date that the stockholder became an interested stockholder. We have agreed to opt out of Section 203 through our certificate of incorporation, but our certificate of incorporation contains substantially similar protections to our company and stockholders as those afforded under Section 203, except that we have agreed with Total that it and its affiliates will not be deemed to be "interested stockholders" under such protections.

In addition, we have an agreement with Total which provides that, so long as Total holds at least 10% of our voting securities, we must inform Total of any offer to acquire us or any decision of our board of directors to sell our company, and we must provide Total with information about the contemplated transaction. In such events, Total will have an exclusive negotiating period of fifteen business days in the event the board of directors authorizes us to solicit offers to buy our company, or five business days in the event that we receive an unsolicited offer to purchase us. This exclusive negotiation period will be followed by an additional restricted negotiation period of ten business days, during which we are obligated to continue to negotiate with Total and will be prohibited from entering into an agreement with any other potential acquirer.

These and other provisions in our certificate of incorporation, our bylaws and in our agreements with Total could discourage potential takeover attempts, reduce the price that investors are willing to pay in the future for shares of our common stock and result in the market price of our common stock being lower than it would be without these provisions.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

The following is a summary of our principal facilities as of December 31, 2017. We lease our principal office and research and development facilities located in Emeryville, California. We hold a 50% ownership interest in a manufacturing facility and related land located in Leland, North Carolina and lease a pilot plant and demonstration facility and related office and laboratory space located in Campinas, Brazil. Our lease agreements expire at various dates through the year 2031.

Location	Approximate Square Feet	Operations
U.S.		
Emeryville, California	136,000	Executive offices; research and development, administrative and pilot plant
Leland, North Carolina	Not applicable (leased by joint venture)	Manufacturing (joint venture with Nikko; see Note 7, "Variable-interest Entities and Unconsolidated Investments" for details)
BRAZIL		
Campinas, Brazil	44,000	Pilot plant, research and development and administrative

In May 2014, pursuant to a sublease agreement and related documents, we agreed to provide Total with access to certain portions of our Emeryville pilot plant facilities for a period of five years. Such subleased area is approximately 22,000 square feet and is composed of two areas, a dedicated area accessible only to Total and a common area which is shared by the Company and Total.

We previously owned an approximately 800,000 square foot manufacturing facility on leased land in Brotas, Brazil, which lease also included approximately 500,000 square feet for a future manufacturing site. In December 2017, we sold the manufacturing facility and transferred the land lease to DSM. See Note 13, "Divestiture" in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K for details. As part of such transaction, DSM agreed to execute a sublease with us for a portion of the land on which we propose to construct a separate manufacturing facility, which we broke ground on in February 2017.

We currently lease approximately 500,000 square feet of land in Pradópolis, Brazil on which we previously began construction of a manufacturing facility with our joint venture partner São Martinho, which was approximately 50% complete when we halted construction in 2013. Notwithstanding the termination of our joint venture with São Martinho, we currently expect to complete construction of this facility and commission it to initially produce our alternative sweetener products.

We believe that our current facilities are suitable and adequate to meet our needs and that suitable additional space will be available to accommodate the foreseeable expansion of our operations. Based on our anticipated volume requirements for 2018 and beyond, we will likely need to identify and secure access to additional production capacity in 2018 and beyond, which we plan to obtain by constructing new facilities and by increasing our use of contract manufacturers, including our collaboration partner, DSM. We are currently making plans to secure such additional capacity.

ITEM 3. LEGAL PROCEEDINGS

In April 2017, a securities class action complaint was filed against the Company and its CEO, John G. Melo, and CFO, Kathleen Valiasek, in the U.S. District Court for the Northern District of California. The complaint sought unspecified damages on behalf of a purported class that would comprise all individuals who acquired the Company's common stock between March 2, 2017 and April 17, 2017. The complaint alleged securities law violations based on statements made by the Company in its earnings press release issued on March 2, 2017 and Form 12b-25 filed with the SEC on April 3, 2017. On September 21, 2017, an Order of Dismissal was entered on the plaintiff’s notice of voluntary dismissal without prejudice.

Subsequent to the filing of the securities class action complaint described above, four separate purported shareholder derivative complaints were filed based on substantially the same facts as the securities class action complaint described above (the Derivative Complaints). The Derivative Complaints name Amyris, Inc. as a nominal defendant and name a number of the Company's current officers and directors as additional defendants. The lawsuits seek to recover, on the Company's behalf, unspecified damages purportedly sustained by the Company in connection with allegedly misleading statements and/or omissions made in connection with the Company's securities filings. The Derivative Complaints also seek a series of changes to the Company's corporate governance policies, restitution to the Company from the individual defendants, and an award of attorneys' fees. Two of the Derivative Complaints were filed in the U.S. District Court for the Northern District of California (together, the Federal Derivative Cases): Bonner v. John Melo, et al., Case No. 4:17-cv-04719, filed August 15, 2017, and Goldstein v. John Melo, et al., Case No. 3:17-cv-04927, filed on August 24, 2017. On September 19, 2017, an order was entered consolidating the Federal Derivative Cases into a single consolidated action, captioned: In re Amyris, Inc., Shareholder Derivative Litigation, Lead Case No. 2:15-cv-04719, and ordering plaintiffs to file a consolidated complaint or designate an operative complaint by November 3, 2017. On November 3, 2017, the plaintiffs in the Federal Derivative Cases filed a Notice of Designation of Operative Complaint designating the complaint filed in the Bonner case as the operative complaint. On December 21, 2017, the defendants filed a motion to dismiss the Federal Derivative Cases. By Order dated March 9, 2018, the Court granted defendants' motion to dismiss the Federal Derivative Cases, and on March 29, 2018, the plaintiffs filed an amended complaint with the Court. The remaining two Derivative Complaints were filed in the Superior Court for the State of California (the State Derivative Cases): Gutierrez v. John G. Melo, et al., Case. No. BC 665782, filed on June 20, 2017, in the Superior Court for the County of Los Angeles, and Soleimani v. John G. Melo, et al., Case No. RG 17865966, filed on June 29, 2017, in the Superior Court for the County of Alameda. On August 31, 2017, the Gutierrez case was transferred to the Superior Court for the State of California, County of Alameda and assigned case number RG17876383. These state cases are in the initial pleadings stage. We believe the Derivative Complaints lack merit, and intend to defend ourselves vigorously. Given the early stage of these proceedings, it is not yet possible to reliably determine any potential liability that could result from this matter.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Market Information for Common Stock

Our common stock is traded on the NASDAQ Global Select Market under the symbol AMRS. The high and low common stock sales prices per share for each period were as follows:

	2017		2016	
Fiscal Quarter Ended	High	Low	High	Low
March 31	$12.45	$6.30	$26.10	$16.20
June 30	$10.65	$2.63	$21.45	$4.65
September 30	$4.32	$1.86	$9.15	$4.80
December 31	$3.90	$2.82	$18.15	$8.55

At March 15, 2018, there were 73 holders of record (not including beneficial holders of stock held in street names) of our common stock.

Dividend Policy

We have never declared or paid any cash dividend on our common stock. We intend to retain any future earnings and do not expect to pay cash dividends in the foreseeable future.

Recent Sales of Unregistered Equity Securities and Use of Proceeds

For information regarding unregistered sales of our equity securities for prior periods within the three years ended December 31, 2017, see our Quarterly Reports on Form 10-Q filed in 2015, 2016 and 2017, and our Annual Reports on Form 10-K for the years ended December 31, 2015 and 2016.

Securities Authorized for Issuance Under Equity Compensation Plans

The information concerning our equity compensation plans is incorporated by reference herein to the section of the Proxy Statement entitled “Equity Compensation Plan Information,” to be filed within 120 days of our December 31, 2017 fiscal year end.

Stock Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Amyris, Inc. under the Securities Act of 1933, as amended, or the Exchange Act.

The following graph shows a five-year comparison of the cumulative total shareholder return on Amyris common stock with the cumulative total returns of the S&P SmallCap 600 Index, and the NASDAQ Clean Edge Green Energy Index. The graph tracks the performance of a $100 investment in the Company’s common stock and in each of the indexes (with the reinvestment of all dividends) on the date specified. Shareholder returns over the indicated period are based on historical data and should not be considered indicative of future shareholder returns.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN*

Among Amyris, Inc.,

the Nasdaq Clean Edge Green Energy Index and the S&P SmallCap 600 Index

	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017
Amyris, Inc.	$ 100	$ 170	$ 66	$ 52	$ 23	$ 8
Nasdaq Clean Edge Green Energy Index	$ 100	$ 194	$ 188	$ 176	$ 171	$ 227
S&P SmallCap 600 Index	$ 100	$ 140	$ 146	$ 141	$ 176	$ 196

*$100 invested on 12/31/2012 in stock or index, including reinvestment of dividends.

ITEM 6. SELECTED FINANCIAL DATA

Five Year Financial Highlights

Years Ended December 31, (In thousands, except shares and per share amounts)	2017	2016	2015	2014	2013
Consolidated Statements of Operations Data:					
Revenue	$143,445	$67,192	$34,153	$43,274	$41,119
Total cost and operating expenses	$182,960	$163,116	$182,686	$143,102	$160,735
Loss from operations	$(39,515)	$(95,924)	$(148,533)	$(99,828)	$(119,616)
Net income (loss)	$(72,329)	$(97,334)	$(218,052)	$2,167	$(234,907)
Net income (loss) attributable to Amyris, Inc. common stockholders	$(93,369)	$(97,334)	$(217,952)	$2,286	$(235,111)
Net income (loss) per share attributable to common stockholders:					
Basic	$(2.89)	$(6.12)	$(26.20)	$0.44	$(46.73)
Diluted	$(2.89)	$(6.55)	$(26.20)	$(13.52)	$(46.73)
Weighted-average shares of common stock outstanding used in computing net income/loss per share of common stock:					
Basic	32,253,570	15,896,014	8,464,106	5,226,674	5,031,518
Diluted	32,253,570	17,642,965	8,464,106	8,123,964	5,031,518

December 31, (In thousands)	2017	2016	2015	2014	2013
Consolidated Balance Sheets Data:					
Cash, cash equivalents, short-term investments and restricted cash	$61,012	$33,807	$14,685	$45,041	$9,944
Working capital (deficit), excluding cash and cash equivalents	$(59,598)	$(77,895)	$(53,139)	$(8,441)	$(7,250)
Property, plant and equipment, net	$13,892	$53,735	$59,797	$118,980	$140,591
Total assets	$151,483	$129,873	$106,116	$216,183	$198,864
Derivative liabilities	$119,978	$6,894	$51,439	$59,736	$134,717
Total indebtedness (notes payable, loans payable, credit facilities and capital leases)[1]	$166,318	$228,299	$156,755	$233,277	$153,305
Total stockholders' deficit	$(199,707)	$(183,508)	$(158,456)	$(125,063)	$(135,848)

[1] In 2016, we adopted ASU 2015-03, "Interest - Imputation of Interest: Simplifying the Presentation of Debt Issuance Costs" and applied the guidance to the December 31, 2016 and 2015 Consolidated Balance Sheets Data, thereby classifying debt issuance costs as a direct reduction of the carrying amount of debt. For the years ending December

31, 2014 and 2013, we did not reclassify debt issuance costs as such amounts were not material.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

Amyris, Inc. (the Company or Amyris) is a leading industrial biotechnology company that applies its technology platform to engineer, manufacture and sell high performance, natural, sustainably sourced products into the Health & Wellness, Clean Skincare, and Flavors & Fragrances markets. Our proven technology platform enables us to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into large volume, high-value ingredients. Our biotechnology platform and industrial fermentation process replace existing complex and expensive manufacturing processes. We have successfully used our technology to develop and produce five distinct molecules at commercial volumes.

We believe that industrial synthetic biology represents a third industrial revolution, bringing together biology and engineering to generate new, more sustainable materials to meet the growing global demand for bio-based replacements for petroleum-based and traditional animal- or plant-derived ingredients. We continue to build demand for our current portfolio of products through an extensive sales network provided by our collaboration partners that represent the leading companies in the world for our target market sectors. We also have a small group of direct sales and distributors who support our Clean Skincare market. Via our partnership model, our partners invest in the development of each molecule to bring it from the lab to commercial scale and use their extensive sales force to sell our ingredients and formulations to their customers as part of their core business. We capture long-term revenue both through the production and sale of the molecule to our partners and through royalty revenues (previously referred to as value share) from our partners' product sales to their customers.

We were founded in 2003 in the San Francisco Bay area by a group of scientists from the University of California, Berkeley. Our first major milestone came in 2005 when, through a grant from the Bill & Melinda Gates Foundation, we developed technology capable of creating microbial strains that produce artemisinic acid, which is a precursor of artemisinin, an effective anti-malarial drug. In 2008, we granted royalty-free licenses to allow Sanofi-Aventis to produce artemisinic acid using our technology. Building on our success with artemisinic acid, in 2007 we began applying our technology platform to develop, manufacture and sell sustainable alternatives to a broad range of markets.

We focused our initial development efforts primarily on the production of Biofene®, our brand of renewable farnesene, a long-chain, branched hydrocarbon molecule that we manufacture through fermentation using engineered microbes. Our farnesene derivatives are sold in hundreds of products as nutraceuticals, skincare products, fragrances, solvents, polymers, and lubricant ingredients. The commercialization of farnesene pushed us to create a more cost efficient, faster and accurate development process in the lab and drive manufacturing costs down. This investment has enabled our technology platform to rapidly develop microbial strains and commercialize target molecules. In 2014, we began manufacturing additional molecules for the Flavors & Fragrances industry; in 2015 we began investing to expand our capabilities to other small molecule chemical classes beyond terpenes via our collaboration with the Defense Advanced Research Projects Agency (DARPA), and in 2016 we expanded into proteins.

We have invested over $500 million in infrastructure and technology to create microbes that produce molecules from sugar or other feedstocks at commercial scale. This platform has been used to design, build, optimize, and upscale strains producing five distinct molecules, leading to more than 15 commercial ingredients used in over 600 consumer products. Our time to market for molecules has decreased from seven years to less than a year for our most recent molecule, mainly due to our ability to leverage the technology platform we have built.

Our technology platform has been in active use since 2008 and has been integrated with our commercial production since 2011, creating an organism development process that we believe makes us an industry leader in the successful scale-up and commercialization of biotech-produced ingredients. The key performance characteristics of our platform that we believe differentiate us include our proprietary computational tools, strain construction tools, screening and analytics tools, and advanced lab automation and data integration. Having this fully integrated with our large scale manufacturing process and capability enables us to always engineer with the end specification and requirements guiding our technology. Our state-of-the-art infrastructure includes industry-leading strain engineering and lab automation located in Emeryville, California, pilot scale production facilities in Emeryville, California and Campinas, Brazil, a demonstration-scale facility in Campinas, Brazil and a commercial-scale production facility in Leland, North Carolina, which is owned and operated by our Aprinnova joint venture to convert our Biofene into squalane and other final products.

We are able to use a wide variety of feedstocks for production, but have focused on accessing Brazilian sugarcane for our large-scale production because of its renewability, low cost and relative price stability. We have also successfully used other feedstocks such as sugar beets, corn dextrose, sweet sorghum and cellulosic sugars at various

manufacturing facilities.

Several years ago, we made the strategic decision to transition our business model from collaborating and commercializing molecules in low margin commodity markets to higher margin specialty markets. We began the transition by first commercializing and supplying farnesene-derived squalene as a cosmetic ingredient sold to formulators and distributors. We also entered into collaboration and supply agreements for the development and commercialization of molecules within the Flavors & Fragrances and Cosmetic Ingredients where we utilize our strain generation technology to develop molecules that meet the customer's rigorous specifications.

During this transition, we solidified the business model of partnering with our customers to create sustainable, high performing, low-cost molecules that replace an ingredient in their supply chain, commercially scale and manufacture those molecules, and share in the profits earned by our customers once our customer sells its product into these specialty markets. These three steps constitute our collaboration revenues, renewable product revenues, and royalty revenues (previously referred to as value share revenues).

During 2017, we completed several development agreements with DSM and others for new products such as Vitamin A, a human nutrition molecule and others. We plan to bring two to three new molecules a year to commercial production.

In the first half of 2017, management made the decision to monetize the use for one of our lower margin molecules, farnesene, in certain fields of use (e.g., the human and animal health and nutrition field) while retaining any associated royalties. We began discussions with our partners and ultimately made the decision to license farnesene to DSM for use in these fields, which we announced in November 2017. During the discussions with DSM, management also made the decision to sell to DSM our manufacturing facility, Brotas 1, which we completed on December 28, 2017.

Brotas 1 was built to batch manufacture one commodity product at a time (originally for high-volume production of biofuels, a business the Company has exited), which is an inefficient manufacturing process that is not suited for the high margin specialty markets in which we operate today. We currently manufacture five specialty products and will be increasing the number of specialty products we manufacture by two to three products a year. The inefficiencies we experienced included having to idle the facility for two weeks at a time to prepare for the next product batch manufacture. These inefficiencies caused our cost of goods sold to be significantly higher. With the sale of Brotas 1, we expect that our gross margins will markedly improve from the reduction in manufacturing costs caused by these inefficiencies. Additionally, we currently are constructing our Brotas 2 facility, which will allow for the manufacture of five products concurrently and over 10 different products annually. Concurrent with the sale of Brotas 1, we contracted with DSM for the use of Brotas 1 to manufacture products for us to fulfill our product supply commitments to our customers until Brotas 2 is completed in 2019. In addition, in 2019, we plan to resume construction of a production facility in Pradópolis, Brazil that we partially built prior to 2013. This facility will support production of our alternative sweetener products.

As discussed above, on December 28, 2017, we completed the sale of Amyris Brasil, which operated our Brotas 1 production facility, to DSM and concurrently entered into a series of commercial agreements and a credit agreement with DSM. At closing, we received $33.0 million in cash for the capital stock of Amyris Brasil, which is subject to certain post-closing working capital adjustments and reimbursements from DSM contingent on DSM’s utilization of certain Brazilian tax benefits it acquired with its purchase of Amyris Brasil. We used $12.6 million of the cash proceeds received to repay certain indebtedness of Amyris Brasil. The total fair value of the consideration in connection with the sales agreement for Amyris Brasil was $56.9 million and resulted in a pretax gain of $5.7 million from continuing operations.

Concurrent with the sale of Amyris Brasil, we entered into a series of commercial agreements with DSM including (i) a license agreement to DSM of its farnesene product for DSM to use in the Vitamin E, lubricant, and Flavors & Fragrances specialty markets; (ii) a value share agreement that DSM will pay specified royalties representing a portion of the profit on the sale of Vitamin E produced from farnesene under the Nenter Supply Agreement assigned to DSM; (iii) a performance agreement to perform research and development to optimize farnesene for production and sale of farnesene products; and (iv) a transition services agreement where we provide finance, legal, logistics, and human resource services to support the Brotas 1 facility under DSM ownership for a six-month period with a DSM option to extend for six additional months. At closing, DSM paid to us a nonrefundable license fee of $27.5 million and a

nonrefundable minimum royalty revenue payment (previously referred to as value share) of $15.0 million. DSM will also pay the Company nonrefundable minimum royalty amounts in 2018 and 2019. The future nonrefundable minimum annual royalty payments were determined to be fixed and determinable with a fair value of $17.8 million, and were included as part of the total arrangement consideration subject to allocation of this overall multiple-element divestiture transaction. See Note 10, “Significant Revenue Agreements”, for a full listing and details of agreements entered into with DSM. Additionally, we entered into a $25.0 million credit agreement with DSM that we used to repay all outstanding amounts under the Guanfu Note (see Note 4, “Debt”).

Sales and Revenue

We recognize revenue from product sales, license fees and royalties, and grants and collaborations.

We have research and development collaboration arrangements for which we receive payments from our collaborators, who include DARPA, DSM Nutritional Products Ltd (DSM), Firmenich SA (Firmenich), Givaudan International SA (Givaudan), and others. Some of our collaboration arrangements provide for advance payments to us in consideration for grants of exclusivity or research efforts that we will perform. In 2017, we signed collaboration agreements for an infant nutrition ingredient, and two vitamins that will contribute to our collaboration revenue and ultimately product sales. Our collaboration agreements, which may require us to achieve milestones prior to receiving payments, are expected to contribute revenues from product sales and royalties (previously referred to as value share) if and when they are commercialized. See Note 10, “Significant Revenue Agreements” in Part II, Item 8 of this Form 10-K for more details.

All of our non-government partnerships include commercial terms for the supply of molecules we successfully upscale and produce at commercial volumes. The first molecule to generate revenue for the Company outside of farnesene was a fragrance molecule launched in 2015. Since the launch, the product has continued to grow in sales year over year. In 2016, we launched our second fragrance molecule and in 2017, we launched our third fragrance molecule as well as our first cosmetic active ingredient. Our partners for these molecules are indicating continued strong growth due to their cost advantaged position, high purity and sustainable production method. We are continuing to identify new opportunities to apply our technology and deliver sustainable access to key molecules. As a result, we have a pipeline that is expected to deliver two new molecules each year over the coming years with one sweetener, a flavor, a cosmetic active ingredient and a fragrance molecule. For 2018, we are currently finalizing the commercial terms for the products; including our Reb-M product that is a superior sweetener and sugar replacement for food and beverages.

As part of the DSM acquisition of our farnesene for vitamin E business, we will receive a royalty payment on all Nenter sales of vitamin E utilizing farnesene produced and sold by DSM from our technology. DSM will pay us minimum royalties totaling $33 million for 2018, 2019 and 2020, the first three years of the agreement.

We have several other collaboration molecules in our development pipeline with partners including DSM, Givaudan and Firmenich that we expect will contribute revenues from product sales and royalties (previously referred to as value share) if and when they are commercialized.

Critical Accounting Policies and Estimates

Management's discussion and analysis of results of operations and financial condition are based on the Company's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the U.S. (U.S. GAAP). We believe that the critical accounting policies described in this section are those that significantly impact our financial condition and results of operations and require the most difficult, subjective or complex judgements, often as a result of the need to make estimates about the effects of matters that are inherently uncertain. Because of this uncertainty, actual results may vary from these estimates.

Our most critical accounting estimates include:

- recognition of revenue involving arrangements with multiple revenue-generating activities;
- the valuation of embedded derivatives, which impacts gains or losses on such derivatives, the carrying value of debt, preferred stock, interest expense and deemed dividends; and
- the evaluation of recoverability of property, plant and equipment, which impacts cost of products sold or operating expenses when we record impairments or accelerate their depreciation or amortization.

For more information about our critical accounting estimates and policies, see Note 1, "Basis of Presentation and Summary of Significant Accounting Policies" in Part II, Item 8 of this Form 10-K.

Sale of Subsidiary and Entry into Commercial Agreements

On December 28, 2017, the Company completed the sale of all the capital stock of Amyris Brasil, a wholly-owned subsidiary, to DSM, which is a related party. Amyris Brasil owned and operated the Company’s production facility (Brotas 1) in Brotas, Brazil. The Company and DSM also entered into a series of commercial agreements and a credit agreement concurrently with the sale of Amyris Brasil. See Note 10, “Significant Revenue Agreements”, Note 11, “Related Party Transactions”, and Note 13, “Divestiture” in Part II, Item 8 of this Form 10-K for further information.

Results of Operations

Revenue

Years Ended December 31, (In thousands)	2017	2016	2015	2017 vs 2016 % Change	2016 vs 2015 % Change
Revenue:					
Renewable products	$42,370	$25,510	$14,506	66 %	76 %
Licenses and royalties	64,477	15,839	390	307 %	3,961%
Grants and collaborations	36,598	25,843	19,257	42 %	34 %
Total revenue	$143,445	$67,192	$34,153	113 %	97 %

2017 Compared to 2016: Total revenue increased by 113% to $143.4 million in 2017, primarily due to revenue in connection with our 2017 collaboration, licensing and royalty agreements with DSM, significant growth in renewable products demand from existing and new customers, and increases in our royalty revenues (previously referred to as value share). Renewable products revenue increased by 66% to $42.4 million in 2017, primarily due to growth in the Clean Skincare and Health & Wellness markets. Licenses and royalty revenue increased by 307% to $64.5 million in 2017, primarily due to $58.0 million of license and royalty revenue from DSM in connection with agreements entered into during 2017. Grants and collaborations revenue increased by 42% to $36.6 million in 2017, primarily due to increases in revenues from our collaborations with Givaudan, DARPA, and DOE as well as revenue recognized upon the acceleration of deferred revenues in connection with the termination of the Company's 2014 collaboration agreement with Manufacture Francaise de Pnematiques Michelin and Braskem S.A. Our revenue are dependent on the timing and nature of arrangements entered into with our customers, which could include multiple elements that require judgement and estimates. Based on the nature of our arrangements, our revenues could vary significantly period over period and as a result we cannot assure that the growth trends can continue.

2016 Compared to 2015: Total revenue increased by 97% to $67.2 million in 2016 primarily due to significant growth in renewable products revenue, licenses and grants and collaborations. Renewable products revenue increased by 76% to $25.5 million in 2016, primarily due to growth in the Flavors & Fragrances and Health & Wellness markets. Licenses and royalty revenue increased by 3,961% to $15.8 million in 2016, primarily due to $15.0 million of license fee revenue from Ginkgo Bioworks, Inc. Grants and collaborations revenue increased by 34% to $25.8 million in 2016, primarily due to $9.7 million of grants revenue resulting from a new contract with DARPA.

Cost and Operating Expenses

Years Ended December 31, (In thousands)	2017	2016	2015	2017 vs 2016 % Change	2016 vs 2015 % Change
Cost of products sold	$62,713	$56,678	$37,374	11 %	52 %
Research and development	56,956	51,412	44,636	11 %	15 %
Sales, general and administrative	63,291	47,721	56,262	33 %	(15)%
Impairment of property, plant and equipment	—	7,305	34,166	(100)%	(79)%
Withholding tax related to conversion of related party notes	—	—	4,723	nm	(100)%
Impairment of intangible assets	—	—	5,525	nm	(100)%
Total cost and operating expenses	$182,960	$163,116	$182,686	12 %	(11)%

———————

nm = not meaningful

Cost of Products Sold

Cost of products sold includes the costs of raw materials, labor and overhead, amounts paid to contract manufacturers, inventory write-downs resulting from applying lower of cost or net realizable value inventory adjustments, and costs related to production scale-up. Because of our product mix, our cost of goods sold does not increase proportionately to increases in our renewable product revenues. As a result of the Brotas 1 divestiture, we expect our cost of products sold to decrease as a percentage of renewable products revenue in the future.

2017 Compared to 2016: Cost of products sold increased by 11% to $62.7 million in 2017, primarily due to a 93% increase in volume of products sold.

2016 Compared to 2015: Cost of products sold increased by 52% to $56.7 million in 2016, primarily due to product mix, an increase in volume of products sold and production scale-up costs.

Research and Development Expenses

2017 Compared to 2016: Research and development expenses increased by 11% to $57.0 million in 2017, primarily due to partnership payments, consulting costs incurred in connection with collaboration projects and increased spending to support the growth in revenues.

2016 Compared to 2015: Research and development expenses increased by 15% to $51.4 million in 2016, primarily due to increases in consulting costs incurred in connection with collaboration projects and increases in personnel expenses necessary to support the growth in collaboration projects.

Sales, General and Administrative Expenses

2017 Compared to 2016: Sales, general and administrative expenses increased by 33% to $63.3 million in 2017, primarily due to increased headcount, sales and marketing expenses to support Biossance™ growth, ASC 606 implementation costs, costs incurred to support the DSM transaction in December 2017, and an exclusivity termination fee of $2.5 million paid to Nenter & Co., Inc.

2016 Compared to 2015: Sales, general and administrative expenses decreased by 15% to $47.7 million in 2016, primarily due to decreases in professional services, personnel expense and stock-based compensation.

Impairment of Property, Plant and Equipment

2017 Compared to 2016: There were no impairments of property, plant and equipment in 2017, compared to $7.3 million in 2016, as described immediately below.

2016 Compared to 2015: Impairment of property, plant and equipment decreased by 79% to $7.3 million in 2016. The $7.3 million in 2016 was comprised of $4.2 million related to the termination of our joint venture with São Martinho in Brazil, and $3.1 million related to assets at our previous contract manufacturer's site in Brazil that could not be utilized in our Brotas manufacturing facility. In 2015, we incurred $34.2 million of impairment charges on property, plant and equipment, primarily due to the termination of the São Martinho joint venture and indirect tax allowances.

Withholding tax related to conversion of related party notes

In 2015, we recorded a $4.7 million expense for withholding taxes related to the conversion of related party notes into equity.

Impairment of Intangible Assets

In 2015, we recorded a $5.5 million charge to impair in-process research and development assets related to our 2011 acquisition of Draths Corporation.

Other Income (Expense), Net

Years Ended December 31, **(In thousands)**	2017	2016	2015	2017 vs 2016 % Change	2016 vs 2015 % Change
Gain on divestiture	$5,732	$—	$—	nm	nm
Interest expense	(34,032)	(37,629)	(78,854)	(10)%	(52)%
Gain (loss) from change in fair value of derivative instruments	(1,742)	41,355	16,287	(104)%	154 %
Loss upon extinguishment of debt	(1,521)	(4,146)	(1,141)	(63)%	263 %
Other expense, net	(956)	(437)	(1,159)	119 %	(62)%
Total other expense, net	$(32,519)	$(857)	$(64,867)	3,695 %	(99)%

2017 Compared to 2016: Total other expense, net was $32.5 million in 2017, compared to $0.9 million in 2016. The $31.7 million increase was primarily comprised of a $43.1 million decrease in gain (loss) from change in fair value of derivative instruments and a $2.6 million decrease in loss upon extinguishment of debt, partly offset by a $5.7 million gain on the divestiture of our Brotas, Brazil manufacturing facility to DSM; see Note 13, "Divestiture" in Part II, Item 8 of this Form 10-K.

2016 Compared to 2015: Total other expense, net was $0.9 million in 2016, compared to $64.9 million in 2015. The $64.0 million decrease was primarily comprised of a $41.2 million decrease in interest expense and a $25.1 million increase in gain from change in fair value of derivative instruments.

Income Taxes

On December 22, 2017, the *Tax Cuts and Jobs Act of 2017* (the Act) was signed into law, making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. There have not been any other significant changes within the provision for income taxes.

We have calculated our best estimate of the impact of the Act in its year-end income tax provision in accordance with our understanding of the Act and guidance available as of the date of this filing. The provisional amount related to the remeasurement of certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future was approximately $37.7 million, with a corresponding and fully offsetting adjustment to our valuation allowance for the year ended December 31, 2017. We do not expect a material impact related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings.

On December 22, 2017, Staff Accounting Bulletin No. 118 *Income Tax Accounting Implications of the Tax Cuts and Jobs Ac*t (SAB 118) was issued to address the application of U.S. GAAP in situations when a company does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. Because we are still in the process of analyzing certain provisions of the Act in accordance with SAB 118, the Company has determined that the adjustment to its deferred taxes was a provisional amount and a reasonable estimate at December 31, 2017. The Act creates a new requirement that certain income (i.e., “GILTI”) earned by controlled foreign corporations (CFCs) must be included currently in the gross income of the CFCs’ U.S. shareholder. The Company’s selection of an accounting policy with respect to the new GILTI tax rules will depend, in part, on analyzing its global income to determine whether it expects to have future U.S. inclusions in taxable income related to GILTI and, if so, what the impact is expected to be. Because whether we expect to have future U.S. inclusions in taxable income related to GILTI depends on not only our current structure and

estimated future results of global operations, but also our intent and ability to modify our structure and/or our business, we are not yet able to reasonably estimate the effect of this provision of the Act. Therefore, we have not made any adjustments related to potential GILTI tax in our financial statements and have not made a policy decision regarding whether to record deferred taxes on GILTI.

Given that we are still in the transition period for the accounting for income tax effects of the Act, our current assessment on deferred tax assets is based on currently available information and guidance. If in the future any element of the tax reform changes the related accounting guidance for income tax, such change could affect our income tax position, and we might need to adjust the provision for income taxes accordingly.

See Note 15. "Income Taxes" for additional information.

Liquidity and Capital Resources

December 31, (in thousands)	2017	2016
Working capital deficit, excluding cash and cash equivalents	$(59,598)	$(77,895)
Cash and cash equivalents and short-term investments	$57,059	$28,524
Debt and capital lease obligations	$166,318	$228,299
Accumulated deficit	$(1,206,767)	$(1,134,438)

Years Ended December 31, (In thousands)	2017	2016	2015
Net cash (used in) provided by:			
Operating activities	$(100,617)	$(82,367)	$(85,132)
Investing activities	$51,992	$5,642	$(5,144)
Financing activities	$78,348	$92,199	$61,424

Liquidity. We have incurred significant operating losses since our inception and expect to continue to incur losses and negative cash flows from operations through at least the next 12 months following the issuance of the financial statements. As of December 31, 2017, we had negative working capital of $59.6 million, (compared to negative working capital of $77.9 million as of December 31, 2016), an accumulated deficit of $1.2 billion, and cash and cash equivalents of $57.1 million (compared to $27.2 million as of December 31, 2016).

As of December 31, 2017, our debt (including related party debt), net of deferred discount and issuance costs of $30.4 million, totaled $165.4 million, of which $56.9 million is classified as current. Of the total debt, $21.8 million is mandatorily convertible into equity. The Company's debt service obligations through April 17, 2019 are $129.3 million, including $12.9 million of anticipated cash interest payments. Our debt agreements contain various covenants, including certain restrictions on our business that could cause us to be at risk of defaults, such as restrictions on additional indebtedness, material adverse effect and cross default clauses. A failure to comply with the covenants and other provisions of our debt instruments, including any failure to make a payment when required, would generally result in events of default under such instruments, which could permit acceleration of a substantial portion of such indebtedness. If such indebtedness is accelerated, it would generally also constitute an event of default

under our other outstanding indebtedness, resulting in acceleration of a substantial portion of such other outstanding indebtedness.

During the year ended December 31, 2017, we improved our liquidity as follows:

- In January, February and May 2017, debt obligations totaling $21.0 million were extended to dates from November 2017 to April 2019;
- In May 2017, we sold shares of Series A 17.38% Convertible Preferred Stock, par value $0.0001 per share (the Series A Preferred Stock), shares of Series B 17.38% Convertible Preferred Stock, par value $0.0001 per share (the Series B Preferred Stock), and warrants to purchase common stock for net proceeds of $50.7 million;
- In April and May 2017, convertible debt obligations totaling $35.8 million were converted into shares of common stock pursuant to their terms or exchanged for shares of Series B Preferred Stock and warrants to purchase common stock;
- In May 2017, additional debt obligations totaling $29.0 million were exchanged for shares of Series B Preferred Stock and warrants to purchase common stock;
- In May 2017, we made debt principal payments of $21.8 million, which in combination with the debt conversions and exchanges described above, reduced debt obligations by a total of $86.6 million;
- In August 2017, we sold shares of common stock, shares of Series D Convertible Preferred Stock, par value $0.0001 per share (the Series D Preferred Stock), and warrants to purchase common stock for net proceeds of $24.8 million; and
- In August 2017, we sold shares of Series B Preferred Stock, warrants to purchase common stock, dilution warrants and a make-whole provision for net proceeds of $25.9 million; and
- In December 2017, we closed a transaction with DSM under which we sold our Amyris Brasil subsidiary which operated our Brotas production facility and also included entering into a series of commercial transactions including, among others, a license agreement to DSM, a value share agreement under which we will receive royalties, a development agreement, and other arrangements. The cash proceeds in December were $75.5 million. The value share agreement includes guaranteed royalty minimums in 2018 and 2019 totaling $18.1 million.

See Note 4, “Debt” and Note 7, “Stockholders’ Deficit” to our unaudited condensed consolidated financial statements included in this report for more information regarding these transactions.

Our consolidated financial statements as of and for the year ended December 31, 2017 have been prepared on the basis that we will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. Due to the factors described above, there is substantial doubt about our ability to continue as a going concern within one year after the date that these financial statements are issued. Our ability to continue as a going concern will depend, in large part, on our ability to achieve positive cash flows from operations during the 12 months from the date of this filing, to extend existing debt maturities, which is uncertain, and to convert certain debt obligations into equity, which conversion is within the control of the Company. The financial statements do not include any adjustments that might result from the outcome of this uncertainty, which could have a material adverse effect on our financial condition. In addition, if we are unable to continue as a going concern, we may be unable to meet our obligations under our existing debt facilities, which could result in an acceleration of our obligation to repay all amounts outstanding under those facilities, and we may be forced to liquidate our assets. In such a scenario, the values we receive for our assets in liquidation or dissolution could be significantly lower than the values reflected in our financial statements.

Our operating plan for 2018 contemplates a significant reduction in our net cash outflows, resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) significantly increased royalty

revenues (previously referred to as value share revenues) (iii) reduced production costs as a result of manufacturing and technical developments, and (iv) cash inflows from grants and collaborations. In addition, in the first half of 2018, we plan to restructure a majority of our convertible debt to extend maturities, and obtain project financing for Brotas 2 facility construction. All of the factors noted above are expected to improve our liquidity.

If we are unable to generate sufficient cash contributions from product sales, payments from existing and new collaboration partners, and draw sufficient funds from certain financing commitments due to contractual restrictions and covenants, we may need to obtain additional funding from equity or debt financings, which may not occur timely or on reasonable terms, if at all, agree to burdensome covenants, grant further security interests in our assets, enter into collaboration and licensing arrangements that require us to relinquish commercial rights, or grant licenses on terms that are not favorable.

If we do not achieve our planned operating results, our ability to continue as a going concern would be jeopardized and we may need to take the following actions to support our liquidity needs in 2018:

- Shift focus to existing products and customers with significantly reduced investment in new product and commercial development efforts;
- Reduce expenditures for third party contractors, including consultants, professional advisors and other vendors;
- Reduce or delay uncommitted capital expenditures, including non-essential facility and lab equipment, and information technology projects; and
- Closely monitor our working capital position with customers and suppliers, as well as suspend operations at pilot plants and demonstration facilities.

Implementing this plan could have a negative impact on our ability to continue our business as currently contemplated, including, without limitation, delays or failures in our ability to:

- Achieve planned production levels;
- Develop and commercialize products within planned timelines or at planned scales; and
- Continue other core activities.

We expect to fund operations for the foreseeable future with cash and investments currently on hand, cash inflows from collaborations, grants, product sales, license and royalties and equity and debt financings, to the extent necessary. Some of our research and development collaborations are subject to risk that we may not meet milestones. Future equity and debt financings, if needed, are subject to the risk that we may not be able to secure financing in a timely manner or on reasonable terms, if at all. Our planned working capital and capital expenditure needs for 2018 are dependent on significant inflows of cash from renewable product sales, license and royalties and existing collaboration partners, as well as additional funding from new collaborations.

For details, see the following Notes in “Notes to Consolidated Financial Statements” included in this Annual Report on Form 10-K:

- Note 4, "Debt"
- Note 5, "Mezzanine Equity"
- Note 6, "Stockholders' Deficit"
- Note 13, "Divestiture"

Cash Flows during the Years Ended December 31, 2017, 2016 and 2015

Cash Flows from Operating Activities

Our primary uses of cash from operating activities are for costs related to production and sales of our products and personnel-related expenditures, offset by cash received from product sales, license fees and royalties, and grants and collaborations. Cash used in operating activities was $100.6 million, $82.4 million and $85.1 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Net cash used in operating activities of $100.6 million for the year ended December 31, 2017 was attributable to our net loss of $72.3 million, offset by net non-cash charges of $15.8 million and net change in our operating assets and liabilities of $44.1 million. Net non-cash charges of $15.8 million for the year ended December 31, 2017 consisted primarily of $12.5 million of amortization of debt discount and issuance costs, $11.4 million of depreciation and amortization expenses, $6.3 million of stock-based compensation, $1.5 million of loss from extinguishment of debt, and $1.7 million of loss from the change in the fair value of derivative instruments associated with the issuance of our convertible promissory notes, convertible preferred stock and related warrants, and cross-currency interest rate swap derivative liability, partially offset by $8.0 million noncash license revenue, a gain on divestiture of $5.7 million and by revenue recognized of $2.7 million which was received in the form of equity in another company in connection with a collaboration arrangement and $1.2 million of gain on foreign currency exchange rate. The increase in net operating assets and liabilities of $44.1 million was primarily comprised of a $19.6 million increase in accounts receivable, a $19.3 million increase in prepaid expenses, a $7.9 million increase in unbilled receivable, a $7.2 million decrease in deferred revenue and a $3.1 million increase in inventory offset by a $13.2 million increase in accounts payable and accrued liabilities.

Net cash used in operating activities of $82.4 million for the year ended December 31, 2016 was attributable to our net loss of $97.3 million, offset by net non-cash charges of $4.0 million and net change in our operating assets and liabilities of $10.9 million. Net non-cash charges of $4.0 million for the year ended December 31, 2016 consisted primarily of $14.4 million of amortization of debt discount and issuance costs, $11.4 million of depreciation and amortization expenses, $7.3 million of asset impairment charges, $7.3 million of stock-based compensation, $4.1 million of loss from extinguishment of debt, $0.9 million of loss on foreign currency exchange rates, partially offset by $41.4 million of gain from the change in the fair value of derivative instruments related to the embedded derivative liabilities associated with certain of our convertible promissory notes and cross-currency interest rate swap derivative liability and $0.1 million of gain on disposition of property, plant and equipment. Net change in operating assets and liabilities of $10.9 million for the year ended December 31, 2016 primarily consisted of a $19.1 million increase in accounts payable and accrued other liabilities, a $5.7 million decrease in inventory and a $0.7 million increase in deferred revenue related to funds received under collaboration agreements, partially offset by a $5.7 million increase in prepaid expenses and other assets and deferred rent and a $8.9 million increase in accounts receivable and related party accounts receivable.

Net cash used in operating activities of $85.1 million for the year ended December 31, 2015 was attributable to our net loss of $218.1 million, offset by net non-cash charges of $113.8 million and net change in our operating assets and liabilities of $19.1 million. Net non-cash charges of $113.8 million for the year ended December 31, 2015 consisted primarily of a $58.6 million of amortization of debt discount and issuance costs, including a $36.6 million charge due to acceleration of accretion of debt discount on the Total and Temasek convertible notes converted to equity in July 2015, $16.3 million of loss from the change in the fair value of derivative instruments related to the embedded derivative liabilities associated with our senior convertible promissory notes and cross-currency interest rate swap derivative liability, $12.9 million of depreciation and amortization expenses, $34.2 million of loss on purchase commitments and impairment of production assets, $9.1 million of stock-based compensation, $5.5 million of impairment of intangible assets, $4.7 million of withholding tax related to conversion of related party note, $4.2 million of loss from investment in affiliates, $1.1 million of loss from extinguishment of debt, $0.4 million of other non-cash expenses and $0.2 million on disposition of property, plant and equipment. Net change in operating assets and liabilities of $19.1 million for the year ended December 31, 2015 primarily consisted of a $15.3 million increase in accounts payable and accrued other liabilities and a $4.3 million decrease in accounts receivable and related party accounts receivable and a $4.5 million increase in inventory, partially offset by a $4.9 million decrease in prepaid expenses and other assets and deferred rent and $0.1 million decrease in deferred revenue related to the funds received under collaboration agreements.

Cash Flows from Investing Activities

Net cash provided from investing activities of $52.0 million for the year ended December 31, 2017, was primarily due to the sale of Amyris Brasil to DSM, which operated the Company's Brotas 1 production facility, and the series of commercial agreements discussed above, partially offset by $4.4 million of purchase of property, plant and equipment.

Net cash provided from investing activities of $5.6 million for the year ended December 31, 2016, was primarily due to $10.0 million of proceeds on disposal of noncontrolling interest and $6.2 million of maturities of short-term investments, offset by $0.9 million of purchase of property, plant and equipment, a $4.0 million increase in restricted cash and $5.5 million of purchase of short-term investments.

Net cash used in investing activities of $5.1 million for the year ended December 31, 2015, was primarily due to $3.3 million of purchase of property, plant and equipment, $1.6 million of loans to an affiliate, $2.7 million of purchase of short-term investments, offset by $2.3 million of maturities of short-term investments and $0.2 million of change in restricted cash.

Cash Flows from Financing Activities

Net cash provided by financing activities of $78.3 million for the year ended December 31, 2017, was primarily due to the receipt of $101.3 million of proceeds from the sales of common and preferred stock and warrants and $18.9 million of net proceeds from debt issued, partly offset by $37.5 million of principal payments on debt.

Net cash provided by financing activities of $92.2 million for the year ended December 31, 2016, was primarily due to the receipt of $63.9 million from debt financings, $29.7 million from notes payable issued to related parties, $5.0 million from proceeds from exercise of warrants and $5.0 million from proceeds from issuance of contingently redeemable equity, offset by $9.8 million of repayment of debt and $1.6 million of principal payments on capital leases.

Net cash provided by financing activities of $61.4 million for the year ended December 31, 2015, was primarily due to the receipt of $77.7 million from debt financings, of which $10.9 million was from debt issued to a related party, which related to the closing of the final installment of notes issued to Total under the Total Fuel Agreements and the receipt of $24.6 million from the issuance of common stock in private placements, offset by $40.8 million of repayment of debt.

Off-Balance Sheet Arrangements

None.

Contractual Obligations

The following is a summary of our contractual obligations as of December 31, 2017:

Payable by Year Ended December 31, (In thousands)	Total	2018	2019	2020	2021	2022	Thereafter
Principal payments on debt [1]	$195,819	$57,007	$98,943	$231	$25,243	$12,255	$ 2,140
Interest payments on debt [2]	36,013	16,851	9,833	3,896	3,884	1,162	387
Operating leases	44,107	10,127	8,760	7,018	7,242	7,415	3,545
Principal payments on capital leases	941	724	178	39	—	—	—
Interest payments on capital leases	38	31	7	—	—	—	—
Purchase obligations[3]	18,326	7,807	7,667	2,852	—	—	—
Total	$295,244	$92,547	$125,388	$14,036	$36,369	$20,832	$ 6,072

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(1) Principal payments on debt shown above include a total of $21.8 million in 2018 and 2019 subject to a Maturity Treatment Agreement, which will be converted to common stock at maturity, subject to there being no default under the terms of the debt.

(2) Does not include any obligations related to make-whole interest or down-round provisions. The fixed interest rates are more fully described in Note 4, "Debt" in Part II, Item 8 of this Form 10-K.

(3) Purchase obligations include $9.0 million of noncancelable contractual obligations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The market risk inherent in our market risk sensitive instruments and positions is the potential loss arising from adverse changes in: commodity market prices, foreign currency exchange rates, and interest rates as described below.

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our investment portfolio and our outstanding debt obligations, including embedded derivatives therein. We generally invest our cash in investments with short maturities or with frequent interest reset terms. Accordingly, our interest income fluctuates with short-term market conditions. As of December 31, 2017, our investment portfolio consisted primarily of money market funds and certificates of deposit, both of which are highly liquid. Due to the short-term nature of our investment portfolio, we do not believe that an immediate 10% increase in interest rates would have a material effect on the fair value of our portfolio. Since we believe we have the ability to liquidate our investment portfolio, we expect that our operating results or cash flows would not be materially affected by a sudden change in market interest rates on the portfolio.

As of December 31, 2017, 83% of our outstanding debt is in fixed rate instruments. The remaining 17% of our outstanding debt is comprised of variable-rate loans under our Senior Secured Loan Facility for which the interest rate is based on the U.S. Prime Rate, subject to a rate floor (see Note 4, “Debt” and Note 18, “Subsequent Events” in Part II, Item 8 of this Form 10-K for details). As a result, changes in interest rates could affect interest expense and payments in relation to that component of our debt.

In addition, changes in interest rates may significantly change the fair value of our embedded derivative liabilities.

Foreign Currency Risk

Most of our sales contracts are denominated in U.S. dollars, and therefore our revenues are not currently subject to significant foreign currency risk.

The functional currency of our consolidated Brazilian subsidiary is the local currency (Brazilian real), in which recurring business transactions occur. We do not use currency exchange contracts as hedges against our investment in

that subsidiary.

On December 28, 2017, we sold our Brotas, Brazil production facility to DSM; see Note 13, "Divestiture" in Part II, Item 8 of this Form 10-K for details. Subsequent to the divestiture, we continue to employ approximately 30 people in Brazil to manage our supply chain, provide manufacturing support to DSM and construct new production facilities.

Our permanent investment in Brazil was $17.8 million as of December 31, 2017 and $119.4 million as of December 31, 2016, using the exchange rate at each date; the decrease is due to the sale of our Brotas production facility. A hypothetical 10% adverse change in Brazilian real exchange rates would have had an adverse impact to Other Comprehensive Loss of $1.8 million as of December 31, 2017 and $11.9 million as of December 31, 2016.

Prior to our December 2017 sale of the Brotas production facility, we made use of a cross-currency interest rate swap arrangement to manage exposure to foreign currency exchange rate and interest rate fluctuations related to our note payable to Banco Pine; see Note 4, "Debt" in Part II, Item 8 of this Form 10-K for details. As of December 31, 2017, the balances of the loan and the associated cross-currency interest rate swap were zero.

We have also evaluated foreign currency exposure in relation to our other non-U.S. Dollar denominated assets and liabilities and determined that there would be an immaterial effect on our results of operations from 10% exchange rate fluctuations between those currencies and the U.S. Dollar.

Commodity Price Risk

Our primary exposure to market risk for changes in commodity prices relates to our procurement of products from contract manufacturers and other suppliers whose prices are affected by the price of sugar feedstocks. Our suppliers manage exposure to this risk primarily through the use of feedstock pricing agreements.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

AMYRIS, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm – KPMG LLP

To the Stockholders and Board of Directors of

Amyris, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of Amyris, Inc. and subsidiaries (the Company) as of December 31, 2017, the related consolidated statements of operations, comprehensive loss, stockholders' deficit and mezzanine equity, and cash flows for the year then ended, and the related notes and financial statement schedule (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017, and the results of its operations and its cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations and has current debt service requirements that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of

material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2017.

San Francisco, California

April 17, 2018

Report of Independent Registered Public Accounting Firm – PricewaterhouseCoopers LLP

To the Board of Directors and Stockholders of

Amyris, Inc.:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of Amyris, Inc. and its subsidiaries at December 31, 2016 and December 31, 2015, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and on the financial statement schedule based on our audits. We conducted our audits of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has suffered recurring losses from operations and has a net stockholders’ deficit that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ PricewaterhouseCoopers LLP

San Jose, California

April 17, 2017

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AMYRIS, INC.

CONSOLIDATED BALANCE SHEETS

December 31, **(In thousands, except shares and per share amounts)**	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	$57,059	$27,150
Restricted cash	2,994	4,326
Short-term investments	—	1,374
Accounts receivable, net of allowance of $642 and $501, respectively	33,621	13,977
Inventories	5,408	6,213
Prepaid expenses and other current assets	5,525	6,083
Total current assets	104,607	59,123
Property, plant and equipment, net	13,892	53,735
Unbilled receivable	7,940	—
Restricted cash, noncurrent	959	957
Recoverable taxes from Brazilian government entities	1,445	13,723
Other assets	22,640	2,335
Total assets	$151,483	$129,873
Liabilities, Mezzanine Equity and Stockholders' Deficit		
Current liabilities:		
Accounts payable	$15,921	$15,315
Accrued and other current liabilities	29,402	30,110
Deferred revenue	4,880	5,288
Debt, current portion	36,924	25,853
Related party debt, current portion	20,019	33,302
Total current liabilities	107,146	109,868
Long-term debt, net of current portion	61,893	128,744
Related party debt, net of current portion	46,541	39,144
Derivative liabilities	119,978	6,894
Other noncurrent liabilities	10,632	23,731
Total liabilities	346,190	308,381
Commitments and contingencies (Note 9)		
Mezzanine equity:		
Contingently redeemable common stock (Note 5)	5,000	5,000
Stockholders’ deficit:		
Preferred stock - $0.0001 par value, 5,000,000 shares authorized as of December 31, 2017 and 2016, and 22,171 and 0 shares issued and outstanding as of December 31, 2017 and December 31, 2016, respectively	—	—
Common stock - $0.0001 par value, 250,000,000 and 500,000,000 shares authorized as of December 31, 2017 and 2016, respectively; 45,637,433 and 18,273,921 shares issued and	5	2

outstanding as of December 31, 2017 and December 31, 2016, respectively		
Additional paid-in capital - common stock and other	1,048,274	990,895
Accumulated other comprehensive loss	(42,156)	(40,904)
Accumulated deficit	(1,206,767)	(1,134,438)
Total Amyris, Inc. stockholders’ deficit	(200,644)	(184,445)
Noncontrolling interest	937	937
Total stockholders' deficit	(199,707)	(183,508)
Total liabilities, mezzanine equity and stockholders' deficit	$151,483	$129,873

See accompanying notes to consolidated financial statements.

AMYRIS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

Years Ended December 31, **(In thousands, except shares and per share amounts)**	2017	2016	2015
Revenue			
Renewable products (includes related party revenue of $1,291, $1,562 and $865, respectively)	$42,370	$25,510	$14,506
Licenses and royalties (includes related party revenue of $57,972, $0 and $0, respectively)	64,477	15,839	390
Grants and collaborations (includes related party revenue of $1,679, $0 and $0, respectively)	36,598	25,843	19,257
Total revenue	143,445	67,192	34,153
Cost and operating expenses			
Cost of products sold	62,713	56,678	37,374
Research and development	56,956	51,412	44,636
Sales, general and administrative	63,291	47,721	56,262
Impairment of property, plant and equipment	—	7,305	34,166
Withholding tax related to conversion of related party notes	—	—	4,723
Impairment of intangible assets	—	—	5,525
Total cost and operating expenses	182,960	163,116	182,686
Loss from operations	(39,515)	(95,924)	(148,533)
Other income (expense)			
Gain on divestiture	5,732	—	—
Interest expense	(34,032)	(37,629)	(78,854)
Gain (loss) from change in fair value of derivative instruments	(1,742)	41,355	16,287
Loss upon extinguishment of debt	(1,521)	(4,146)	(1,141)
Other expense, net	(956)	(437)	(1,159)
Total other expense, net	(32,519)	(857)	(64,867)
Loss before income taxes and loss from investments in affiliates	(72,034)	(96,781)	(213,400)
Provision for income taxes	(295)	(553)	(468)
Net loss before loss from investments in affiliates	(72,329)	(97,334)	(213,868)
Loss from investments in affiliates	—	—	(4,184)
Net loss	(72,329)	(97,334)	(218,052)
Net loss attributable to noncontrolling interest	—	—	100
Net loss attributable to Amyris, Inc.	(72,329)	(97,334)	(217,952)
Less deemed dividend on capital distribution to related parties	(8,648)	—	—
Less deemed dividend related to beneficial conversion feature on Series A preferred stock	(562)	—	—
Less deemed dividend related to beneficial conversion feature on Series B preferred stock	(634)	—	—
	(5,757)	—	—

Less deemed dividend related to beneficial conversion feature on Series D preferred stock			
Less cumulative dividends on Series A and Series B preferred stock	(5,439)	—	—
Net loss attributable to Amyris, Inc. common stockholders	$(93,369)	$(97,334)	$(217,952)
Net loss per share attributable to Amyris, Inc. common stockholders:			
Basic	$(2.89)	$(6.12)	$(26.20)
Diluted	$(2.89)	$(6.55)	$(26.20)
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock:			
Basic	32,253,570	15,896,014	8,464,106
Diluted	32,253,570	17,642,965	8,464,106

See accompanying notes to consolidated financial statements.

AMYRIS, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

Years Ended December 31, **(In thousands)**	2017	2016	2015
Comprehensive loss:			
Net loss	$(72,329)	$(97,334)	$(218,052)
Foreign currency translation adjustment, net of tax	(1,252)	6,294	(16,901)
Total comprehensive loss	(73,581)	(91,040)	(234,953)
Net loss attributable to noncontrolling interest	—	—	100
Foreign currency translation adjustment attributable to noncontrolling interest	—	—	(320)
Comprehensive loss attributable to Amyris, Inc.	$(73,581)	$(91,040)	$(235,173)

See accompanying notes to consolidated financial statements.

AMYRIS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIT AND MEZZANINE EQUITY

(In thousands, except number of shares)	Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Noncontrolling Interest	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount					
December 31, 2014	—	$—	5,281,459	$1	$724,676	$(29,977)	$(819,152)	$(611)	$(1
Issuance of common stock in private placement, net of issuance costs	—	—	1,068,377	—	24,626	—	—	—	24
Issuance of common stock upon conversion of debt	—	—	4,146,148	1	96,621	—	—	—	96
Issuance of warrants on conversion of debt	—	—	—	—	51,704	—	—	—	51
Issuance of common stock upon exercise of warrants	—	—	3,158,832	—	19,194	—	—	—	19
Issuance of common stock from restricted stock settlement	—	—	60,592	—	(333)	—	—	—	(3
Issuance of common stock upon ESPP purchase	—	—	25,727	—	595	—	—	—	59
Issuance of common stock upon exercise of stock options	—	—	884	—	18	—	—	—	18
Stock-based compensation	—	—	—	—	9,134	—	—	—	9,
Foreign currency translation adjustment	—	—	—	—	—	(17,221)	—	320	(1
Net loss	—	—	—	—	—	—	(217,952)	(100)	(2
December 31, 2015	—	$—	13,742,019	$2	$926,235	$(47,198)	$(1,037,104)	$(391)	$(1
Issuance of common stock upon conversion of debt	—	—	1,048,601	—	14,366	—	—	—	14
Issuance of common stock for settlement of debt principal payments	—	—	2,381,588	—	17,414	—	—	—	17
Issuance of common stock upon exercise of warrants	—	—	666,667	—	10,435	—	—	—	10
Issuance of common stock from restricted stock settlement	—	—	120,234	—	(254)	—	—	—	(2
Issuance of common stock upon ESPP purchase	—	—	22,405	—	180	—	—	—	18
Issuance of common stock upon exercise of stock options	—	—	9	—	—	—	—	—	—
Issuance of contingently redeemable common stock	—	—	292,398	—	—	—	—	—	—
	—	—	—	—	4,387	—	—	—	4,

Issuance of warrants with debt private placement and collaboration agreements								
Contribution upon restructuring of Total Amyris BioSolutions B.V.	—	—	—	4,252	—	—	—	4,
Acquisitions of noncontrolling interests	—	—	—	(2,508)	—	—	391	(2
Disposal of noncontrolling interest in Aprinnova LLC	—	—	—	9,063	—	—	937	10
Stock-based compensation	—	—	—	7,325	—	—	—	7,
Foreign currency translation adjustment	—	—	—	—	6,294	—	—	6,
Net loss	—	—	—	—	—	(97,334)	—	(9
December 31, 2016	—	$—	18,273,921	$2	$990,895	$(40,904)	$(1,134,438)	$937	$(1
Issuance of Series A preferred stock for cash, net of issuance costs of $562	22,140	—	—	—	—	—	—	—	—
Issuance of Series B preferred stock upon conversion of debt, net of issuance costs of $0	40,204	—	—	—	—	—	—	—	—
Issuance of Series B preferred stock for cash, net of issuance costs of $860	55,700	—	—	—	5,476	—	—	—	5,
Issuance of Series D preferred stock for cash, net of issuance costs of $176	12,958	—	—	—	6,197	—	—	—	6,
Issuance of common stock due to rounding from reverse stock split	—	—	6,473	—	—	—	—	—	—
Issuance of common stock for cash	—	—	2,826,711	—	5,527	—	—	—	5,
Issuance of common stock upon conversion of preferred stock	(108,831)	—	17,274,017	3	(1)	—	—	—	2
Issuance of common stock upon conversion of debt	—	—	2,257,786	—	6417,	—	—	—	6,
Issuance of common stock for settlement of debt principal payments	—	—	1,246,165	—	10,708	—	—	—	10
Issuance of common stock for settlement of debt interest payments	—	—	400,967	—	3,436	—	—	—	3,
Issuance of common stock upon exercise of warrants	—	—	3,148,097	—	9,557	—	—	—	9,
Issuance of common stock upon restricted stock settlement	—	—	156,104	—	(385)	—	—	—	(3
Issuance of common stock upon ESPP purchase	—	—	47,058	—	—	—	—	—	—
Issuance of common stock upon exercise of stock options	—	—	134	—	—	—	—	—	—
Beneficial conversion feature of Series A preferred stock	—	—	—	—	562	—	—	—	56
Deemed dividend on beneficial conversion feature of Series A preferred stock	—	—	—	—	(562)	—	—	—	(5
Beneficial conversion feature to related party of Series B preferred stock	—	—	—	—	634	—	—	—	63
Deemed dividend to related party on beneficial conversion feature of Series B preferred stock	—	—	—	—	(634)	—	—	—	(6
Beneficial conversion feature of Series D preferred stock	—	—	—	—	5,757	—	—	—	5,

Deemed dividend on beneficial conversion feature of Series D preferred stock	—	—	—	(5,757)	—	—	—	(5
Reclassification from mezzanine equity to permanent equity	—	—	—	12,830	—	—	—	12
Deemed dividend on capital distribution to related parties	—	—	—	(8,648)	—	—	—	(8
Stock-based compensation	—	—	—	6,265	—	—	—	6,
Foreign currency translation adjustment	—	—	—	—	(1,252)	—	—	(1
Net loss	—	—	—	—	—	(72,329)	—	(7
December 31, 2017	22,171	$—	45,637,433	$5	$1,048,274	$(42,156)	$(1,206,767)	$937	$(1

See accompanying notes to consolidated financial statements.

AMYRIS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

Years Ended December 31, **(In thousands)**	2017	2016	2015
Operating activities			
Net loss	$(72,329)	$(97,334)	$(218,052)
Adjustments to reconcile net loss to net cash used in operating activities:			
Gain on divestiture	(5,732)	—	—
Depreciation and amortization	11,358	11,374	12,920
Loss on impairment of property, plant and equipment	—	7,305	34,166
Impairment of intangible assets	—	—	5,525
Withholding tax related to conversion of related party notes	—	—	4,723
Loss from investments in affiliates	—	—	4,184
Loss (gain) on disposal of property, plant and equipment	142	(161)	154
Stock-based compensation	6,265	7,325	9,134
Amortization of debt discount	12,490	14,445	58,559
Loss upon extinguishment of debt	1,521	4,146	1,141
Receipt of noncash consideration in connection with license revenue	(8,046)	—	—
Receipt of equity in connection with collaboration arrangements revenue	(2,661)	—	—
Loss (gain) from change in fair value and extinguishment of derivative instruments	1,742	(41,355)	(16,287)
(Gain) loss on foreign currency exchange rates	(1,230)	557	1,328
Other non-cash expenses	—	442	(1,741)
Changes in assets and liabilities:			
Accounts receivable	(19,647)	(8,959)	4,271
Inventories	(3,126)	5,686	4,470
Prepaid expenses and other assets	(19,336)	(4,913)	(4,297)
Unbilled receivable	(7,940)	—	—
Accounts payable	5,858	6,442	4,373
Accrued and other liabilities	7,295	11,919	10,386
Deferred revenue	(7,241)	714	(89)
Net cash used in operating activities	(100,617)	(82,367)	(85,132)
Investing activities			
Proceeds from divestiture	54,827	—	—
Purchase of short-term investments	(11,786)	(5,559)	(2,759)
Maturities of short-term investments	12,403	6,187	2,321
Sale of short-term investments	95	—	—
Purchases of property, plant and equipment	(4,412)	(922)	(3,367)
Proceeds on disposal of noncontrolling interest	—	10,000	—
Change in restricted cash	865	(4,040)	240
Loan to affiliate	—	—	(1,579)
Change in restricted stock	—	(24)	—
Net cash provided by (used in) investing activities	51,992	5,642	(5,144)

Financing activities			
Proceeds from sale of convertible preferred stock in May 2017 Offerings, net of issuance costs	50,411	—	—
Proceeds from sale of convertible preferred stock in August 2017 Vivo Offering, net of issuance costs	24,768	—	—
Proceeds from sale of convertible preferred stock in August 2017 DSM Offering, net of issuance costs	25,945	—	—
Proceeds from issuance of common stock in private placements, net of issuance costs	—	—	24,625
Proceeds from debt issued	18,925	63,911	66,931
Proceeds from debt issued to related parties	—	29,699	10,850
Principal payments on debt	(37,500)	(9,759)	(40,819)
Payment on early redemption of debt	(1,909)	—	—
Proceeds from issuance of contingently redeemable common stock	—	5,000	—
Proceeds from exercise of warrants	—	5,000	285
Proceeds from exercises of common stock options, net of repurchases	160	180	614
Principal payments on capital leases	—	(1,579)	(729)
Change in restricted cash related to contingently redeemable common stock	1,046	—	—
Payment of swap termination	(3,113)	—	—
Employees' taxes paid upon vesting of restricted stock units	(385)	(253)	(333)
Net cash provided by financing activities	78,348	92,199	61,424
Effect of exchange rate changes on cash and cash equivalents	186	(316)	(1,203)
Net increase (decrease) in cash and cash equivalents	29,909	15,158	(30,055)
Cash and cash equivalents at beginning of period	27,150	11,992	42,047
Cash and cash equivalents at end of period	$57,059	$27,150	$11,992

Amyris, Inc.

CONSOLIDATED STATEMENTS OF CASH FLOWS, Continued

Years Ended December 31, (In thousands)	2017	2016	2015
Supplemental disclosures of cash flow information:			
Cash paid for interest	$11,539	$9,983	$9,425
Supplemental disclosures of non-cash investing and financing activities:			
Acquisition of property, plant and equipment under accounts payable, accrued liabilities and notes payable	$221	$(1,252)	$(465)
Financing of equipment	$—	$2,136	$613
Acquisition of noncontrolling interest in Glycotech via debt	$—	$3,906	$—
Financing of insurance premium under note payable	$(467)	$(123)	$53
Issuance of debt in exchange for prepaid royalties	$6,847	$—	$—
Issuance of note payable in exchange for debt extinguishment with third party	$16,954	$—	$—
Settlement of debt principal by a related party	$(25,000)	$—	$—
Issuance of common stock for settlement of debt principal and interest payments	$3,436	$17,410	$—
Issuance of convertible preferred stock upon conversion of debt	$40,204	$—	$—
Issuance of common stock upon conversion of debt	$28,702	$14,364	$—
Issuance of common stock for settlement of debt	$10,708	$—	$—
Receipt of antidilution warrants	$9,549	$—	$—
Deemed dividend on capital distribution to related parties	$8,468	$—	$—
Accrued interest added to debt principal	$2,816	$3,147	$6,354
Revenue recognized from noncash consideration received	$2,661	$—	$—
Cancellation of debt and accrued interest on disposal of interest in affiliate	$—	$4,252	$—

See accompanying notes to consolidated financial statements.

Amyris, Inc.

Notes to Consolidated Financial Statements

1. Basis of Presentation and Summary of Significant Accounting Policies

Business Description

Amyris, Inc. (Amyris or the Company) is a leading industrial biotechnology company that applies its technology platform to engineer, manufacture and sell high performance, natural, sustainably sourced products into the Health & Wellness, Clean Skincare, and Flavors & Fragrances markets. The Company's proven technology platform enables the Company to rapidly engineer microbes and use them as catalysts to metabolize renewable, plant-sourced sugars into large volume, high-value ingredients. The Company's biotechnology platform and industrial fermentation process replace existing complex and expensive manufacturing processes. The Company has successfully used its technology to develop and produce five distinct molecules at commercial volumes.

The Company believes that industrial synthetic biology represents a third industrial revolution, bringing together biology and engineering to generate new, more sustainable materials to meet the growing global demand for bio-based replacements for petroleum-based and traditional animal- or plant-derived ingredients. The Company continues to build demand for its current portfolio of products through an extensive sales network provided by its collaboration partners that represent the leading companies in the world for its target market sectors. The Company also has a small group of direct sales and distributors who support the Company’s Clean Skincare market. With its partnership model, the Company’s partners invest in the development of each molecule to bring it from the lab to commercial scale and use their extensive sales force to sell the Company’s ingredients and formulations to their customers as part of their core business. The Company captures long-term revenue both through the production and sale of the molecule to its partners and through royalty revenues (previously referred to as value share) from its partners' product sales to their customers.

On December 28, 2017, the Company completed the sale of Amyris Brasil, which operated the Company’s Brotas 1 production facility, to DSM and concurrently entered into a series of commercial agreements and a credit agreement with DSM. At closing, the Company received $33.0 million in cash for the capital stock of Amyris Brazil, which is subject to certain post-closing working capital adjustments; and reimbursements contingent upon DSM’s utilization of certain Brazilian tax benefits it acquired with its purchase of Amyris Brasil. The Company used $12.6 million of the cash proceeds received to repay certain indebtedness of Amyris Brasil. The total fair value of the consideration to be received by the Company for Amyris Brasil was $56.9 million and resulted in a pretax gain of $5.7 million from continuing operations.

Concurrent with the sale of Amyris Brasil, the Company and DSM entered into a series of commercial agreements including (i) a license agreement to DSM of its farnesene product for DSM to use in the Vitamin E, lubricant, and flavor and fragrance markets; (ii) a value share agreement that DSM will pay the Company specified royalties representing a portion of the profit on the sale of Vitamin E produced from farnesene under the Nenter Supply Agreement assigned to DSM; (iii) a performance agreement for the Company to perform research and development to optimize farnesene for production and sale of farnesene products; and (iv) a transition services agreement for the Company to provide finance, legal, logistics, and human resource services to support the Brotas 1 facility under DSM ownership for a six-month period with a DSM option to extend for six additional months. At closing, DSM paid the Company a nonrefundable license fee of $27.5 million and a nonrefundable royalty payment (previously referred to as value share) of $15.0 million. DSM will also pay the Company nonrefundable minimum annual royalty payments in 2018 and 2019. The future nonrefundable minimum annual royalty payments were determined to be fixed and determinable with a fair value of $17.8 million, and were included as part of the total arrangement consideration subject to allocation of this overall multiple-element divestiture transaction. See Note 10, “Significant Revenue Agreements”, for a full listing and details of agreements entered into with DSM. Additionally, the Company and DSM entered into a $25.0 million credit agreement that the Company used to repay all outstanding amounts under the Guanfu Note (see Note 4, “Debt”).

Liquidity

The Company has incurred significant operating losses since its inception and expects to continue to incur losses and negative cash flows from operations for at least the next 12 months following the issuance of the financial statements. As of December 31, 2017, the Company had negative working capital of $59.6 million, (compared to negative working capital of $77.9 million as of December 31, 2016), and an accumulated deficit of $1.2 billion.

As of December 31, 2017, the Company's debt (including related party debt), net of deferred discount and issuance costs of $30.4 million, totaled $165.4 million, of which $56.9 million is classified as current and $21.8 million of which is mandatorily convertible into equity and within the control of the Company. The Company's debt service obligations through April 17, 2019 are $129.3 million, including $12.9 million of anticipated cash interest payments. The Company's debt agreements contain various covenants, including certain restrictions on the Company's business that could cause the Company to be at risk of defaults, such as restrictions on additional indebtedness, material adverse effect and cross default clauses. A failure to comply with the covenants and other provisions of the Company’s debt instruments, including any failure to make a payment when required, would generally result in events of default under such instruments, which could permit acceleration a substantial portion of such indebtedness. If such indebtedness is accelerated, it would generally also constitute an event of default under the Company’s other outstanding indebtedness, permitting acceleration of a substantial portion of such other outstanding indebtedness.

Cash and cash equivalents of $57.1 million as of December 31, 2017 and cash proceeds from the Warrant Exchange and Exercise on April 12, 2018 (see Note 18), are not sufficient to fund expected future negative cash flows from operations and cash debt service obligations through March 31, 2019. These factors raise substantial doubt about the Company’s ability to continue as a going concern within one year after the date that these financial statements are issued. The financial statements do not include any adjustments that might result from the outcome of this uncertainty. The Company's ability to continue as a going concern will depend, in large part, on its ability to extend existing debt maturities by restructuring a majority of its convertible debt, which is uncertain and outside the control of the Company, in addition to the conversion of certain debt obligations into equity, which conversion is within the control of the Company. Further, the Company's operating plan for 2018 contemplates a significant reduction in its net operating cash outflows as compared to the year ended December 31, 2017, resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) significantly increased royalty revenues (previously referred to as value share revenues) (iii) reduced production costs as a result of manufacturing and technical developments, and (iv) cash inflows from grants and collaborations. Finally, in the first half of 2018, the Company plans to obtain project financing for the Brotas 2 facility construction. If the Company is unable to complete these actions, it expects to be unable to meet its operating cash flow needs and its obligations under its existing debt facilities. This could result in an acceleration of its obligation to repay all amounts outstanding under those facilities, and it may be forced to liquidate its assets or obtain additional equity or debt financing, which may not occur timely or on reasonable terms, if at all.

Basis of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with the accounting principles generally accepted in the United States (U.S. GAAP). The consolidated financial statements include the accounts of Amyris, Inc. and its wholly-owned and partially-owned subsidiaries in which the Company has a controlling interest after elimination of all significant intercompany accounts and transactions.

Investments and joint venture arrangements are assessed to determine whether the terms provide economic or other control over the entity requiring consolidation of the entity. Entities controlled by means other than a majority voting interest are referred to as variable-interest entities (VIEs) and are consolidated when Amyris has both the power to direct the activities of the VIE that most significantly impact its economic performance and the obligation to absorb losses or the right to receive benefits that could potentially be significant to the entity. For any investment or joint venture in which (i) the Company does not have a majority ownership interest, (ii) the Company possesses the ability to exert significant influence and (iii) the entity is not a VIE for which the Company is considered the primary beneficiary, the Company accounts for the investment or joint venture using the equity method. Investments in which the Company does not possess the ability to exert significant influence over the investee and are not VIEs for which the Company is considered the primary beneficiary are accounted for using the cost method. For investments that the Company accounts for under the cost method, earnings from the investment are equal to dividends received from the investee.

Sale of Subsidiary and Entry into Commercial Agreements

On December 28, 2017, the Company completed the sale of all the capital stock of Amyris Brasil, a wholly-owned subsidiary, to DSM Produtos Nutricionais Brasil S.A (DSM), a related party. Amyris Brasil owned and operated the Company’s production facility (Brotas 1) in Brotas, Brazil. The transaction resulted in a pretax gain of $5.7 million from continuing operations. The transaction did not result in presenting Amyris Brasil as a discontinued operation in the consolidated financial statements because (a) the transaction did not represent a strategic shift in accordance with U.S. GAAP or (b) result in the release of Amyris Brasil’s $29.7 million cumulative translation adjustment from stockholders’ equity, as the transaction was not a substantial liquidation in accordance with U.S. GAAP due to the Company’s continuing commercial presence and reinvestment in a new production facility (Brotas 2) under construction in Brazil and its continuing operation, SMA, in Brazil. The Company and DSM also entered into a series of commercial agreements and a credit agreement concurrently with the sale of Amyris Brasil. See Note 10, “Significant Revenue Agreements”, Note 11, “Related Party Transactions”, and Note 13, “Divestiture” for further information.

Use of Estimates and Judgements

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates, judgements and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates, and such differences may be material to the consolidated financial statements.

Reverse Stock Split

On June 5, 2017, the Company effected a 1 for 15 reverse stock split (Reverse Stock Split) of the Company's common stock, par value $0.0001 per share, as well as a reduction in the total number of authorized shares of common stock from 500,000,000 to 250,000,000. Unless otherwise noted, all common stock share quantities and per-share amounts for all periods presented in the financial statements and notes thereto have been retroactively adjusted for the Reverse Stock Split as if such Reverse Stock Split had occurred on the first day of the first period presented. Certain amounts in the notes to the financial statements may be slightly different from previously reported due to rounding of fractional shares as a result of the Reverse Stock Split.

The par value, number of shares outstanding and number of authorized shares of preferred stock were not adjusted as a result of the reverse stock split.

Reclassifications

Certain prior period amounts have been reclassified to conform to the current period presentation in the Company's consolidated financial statements and the accompanying notes to the consolidated financial statements. The consolidated statements of operations previously presented license fee revenue in combination with grants and collaborations revenue, and royalties (formerly referred to as "value share") were previously presented in combination with renewable products revenue. Licenses and royalties revenue is presented as a separate line within the consolidated statements of operations. The reclassifications reflect the growth in the Company's business model to license its technology and earn royalties from customers utilizing the Company's technology in the products it produces and sells. The reclassifications had no impact on total revenue. Additional information is disclosed in the notes if material.

Significant Accounting Policies

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original or remaining maturity of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents are maintained with various financial institutions.

Inventories

Inventories, which consist of farnesene-derived products and flavors and fragrances ingredients, are stated at the lower of cost or net realizable value and are categorized as finished goods, work in process or raw material inventories. The Company evaluates the recoverability of its inventories based on assumptions about expected demand and net realizable value. If the Company determines that the cost of inventories exceeds their estimated net realizable value, the Company records a write-down equal to the difference between the cost of inventories and the estimated net realizable value. If actual net realizable values are less favorable than those projected by management, additional inventory write-downs may be required that could negatively impact the Company's operating results. If actual net realizable values are more favorable, the Company may have favorable operating results when products that have been previously written down are sold in the normal course of business. The Company also evaluates the terms of its agreements with its suppliers and establishes accruals for estimated losses on adverse purchase commitments as necessary, applying the same lower of cost or net realizable value approach that is used to value inventory. Cost is computed on a first-in, first-out basis. Inventory costs include transportation costs incurred in bringing the inventory to its existing location.

Property, Plant and Equipment, Net

Property and equipment are recorded at cost. Depreciation and amortization are computed straight-line based on the estimated useful lives of the related assets, ranging from 3 to 15 years for machinery, equipment and fixtures, and 15 years for buildings. Leasehold improvements are amortized over their estimated useful lives or the period of the related lease, whichever is shorter.

The Company expenses costs for maintenance and repairs and capitalizes major replacements, renewals and betterments. For assets retired or otherwise disposed, both cost and accumulated depreciation are eliminated from the asset and accumulated depreciation accounts, and gains or losses related to the disposal are recorded in the statement of operations for the period.

Impairment of Long-Lived Assets

Long-lived assets that are held and used by the Company are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability of long-lived assets is based on an estimate of the undiscounted future cash flows resulting from the use of the asset and its eventual disposition. Measurement of an impairment loss for long-lived assets that management expects to hold and use is based on the difference between the fair value of the asset and its carrying value. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less costs to sell.

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Recoverable Taxes from Brazilian Government Entities

Recoverable taxes from Brazilian government entities represent value-added taxes paid on purchases in Brazil, which are reclaimable from the Brazilian tax authorities, net of reserves for amounts estimated not to be recoverable.

Fair Value Measurements

The Company measures certain financial assets and liabilities at fair value based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Where available, fair value is based on or derived from observable market prices or other observable inputs. Where observable prices or inputs are not available, valuation techniques are applied. These valuation techniques involve some level of management estimation and judgement, the degree of which is dependent on the price transparency for the instruments or market and the instruments' complexity.

The carrying amounts of certain financial instruments, such as cash equivalents, short-term investments, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their relatively short maturities. The fair values of loans payable, convertible notes and credit facilities are based on the present value of expected future cash flows and assumptions about current interest rates and the creditworthiness of the Company. The loans payable, convertible notes and credit facilities are carried on the consolidated balance sheet on a historical cost basis, because the Company has not elected to recognize the fair value of these liabilities. However, the Remaining Notes subject to the Maturity Treatment Agreement were revalued to fair value on July 29, 2015; see Note 4, "Debt" for details.

Changes in the inputs into these valuation models have a significant impact on the estimated fair value of the embedded and freestanding derivatives. For example, a decrease (increase) in the estimated credit spread for the Company results in an increase (decrease) in the estimated fair value of the embedded derivatives. Conversely, a decrease (increase) in the stock price results in a decrease (increase) in the estimated fair value of the embedded derivatives. The changes during 2017, 2016 and 2015 in the fair values of the bifurcated compound embedded derivatives are primarily related to the change in price of the Company's common stock and are reflected in the consolidated statements of operations as "Gain from change in fair value of derivative instruments."

Derivatives

The Company has made limited use of derivative instruments, including cross-currency interest rate swap agreements, to manage the Company's exposure to foreign currency exchange rate fluctuations and interest rate fluctuations related to the Company's Banco Pine S.A. loan, which the Company repaid in full in December 2017; see Note 4, "Debt". Changes in the fair value of the cross-currency interest rate swap derivative were recognized in the consolidated statements of operations in "Gain (loss) from change in fair value of derivative instruments". As of December 31, 2017, the balances of the loan and the associated cross-currency interest rate swap were zero.

Embedded derivatives that are required to be bifurcated from the underlying debt instrument (i.e., host) are accounted for and valued as separate financial instruments. The Company evaluated the terms and features of its convertible notes payable and convertible preferred stock and identified compound embedded derivatives requiring bifurcation and accounting at fair value because the economic and contractual characteristics of the embedded derivatives met the criteria for bifurcation and separate accounting due to the instruments containing conversion options, “make-whole interest” provisions, down round conversion price adjustment provisions and conversion rate adjustments. Cash and anti-dilution warrants issued in conjunction with the convertible debt and equity financings are freestanding financial instruments which are also classified as derivative liabilities.

Noncontrolling Interest

Noncontrolling interests represent the portion of the Company's net income (loss), net assets and comprehensive income (loss) that is not allocable to the Company, in situations where the Company consolidates its equity investment in a joint venture for which there are other owners. The amount of noncontrolling interest is comprised of the amount of such interests at the date of the Company's original acquisition of an equity interest in a joint venture, plus the other shareholders' share of changes in equity since the date the Company made an investment in the joint venture.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist primarily of cash and cash equivalents, short-term investments and accounts receivable. The Company places its cash equivalents and investments (primarily certificates of deposits) with high credit quality financial institutions and, by policy, limits the amount of credit exposure with any one financial institution. Deposits held with banks may exceed the amount of insurance provided on such deposits. The Company has not experienced any losses on its deposits of cash and cash equivalents and short-term investments.

The Company performs ongoing credit evaluation of its customers, does not require collateral, and maintains allowances for potential credit losses on customer accounts when deemed necessary.

Customers representing 10% or greater of accounts receivable were as follows:

As of December 31,	2017	2016

Customer A (related party)	38%	*
Customer B	10%	33%
Customer C	**	22%
Customer E	15%	**

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** Less than 10%

Customers representing 10% or greater of revenue were as follows:

Years Ended December 31,	2017	2016	2015
Customer A (related party)	42%	*	*
Customer B	12%	27%	37%
Customer C	10%	**	*
Customer D	**	22%	*
Customer E	**	14%	**
Customer G	**	**	10%

_____

* Not a customer

** Less than 10%

Revenue Recognition

The Company recognizes revenue from the sale of renewable products, licenses of and royalties from intellectual property, and grants and collaborative research and development services. Revenue is recognized when all of the following criteria are met: persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the fee is fixed or determinable, and collectability is reasonably assured.

If sales arrangements contain multiple elements, the Company evaluates whether the components of each arrangement represent separate units of accounting.

Renewable Product Sales

The Company’s renewable product sales do not include rights of return. Returns are only accepted if the product does not meet product specifications and such nonconformity is communicated to the Company within a set number of days of delivery. The Company offers a two year standard warranty provision for squalane products sold after March 31, 2012, if the products do not meet Company-established criteria as set forth in the Company’s trade terms. The Company bases its return reserve on a historical rate of return for the Company’s squalane products. Revenues are recognized, net of discounts and allowances, once passage of title and risk of loss has occurred and contractually specified acceptance criteria have been met, provided all other revenue recognition criteria have also been met.

Licenses and Royalties

License fees for intellectual property transferred to other parties, representing non-refundable payments received at the time of signature of license agreements, are recognized as revenue upon signature of the license agreements when the Company has no significant future performance obligations and collectability of the fees is assured. Upfront payments received at the beginning of licensing agreements with future service obligations are deferred and recognized as revenue on a systematic basis over the period during which the related services are rendered and all obligations are performed.

Royalties from intellectual property licenses that allow Amyris's customers to use the Company’s intellectual property to produce and sell their products in which the Company shares in the profits are recognized in the period the royalty report is received.

Grants and Collaborative Research and Development Services

Revenues from collaborative research and development services are recognized as the services are performed consistent with the performance requirements of the contract. In cases where the planned levels of research and development services fluctuate over the research term, the Company recognizes revenues using the proportional performance method based upon actual efforts to date relative to the amount of expected effort to be incurred by us. When up-front payments are received and the planned levels of research and development services do not fluctuate over the research term, revenues are recorded on a ratable basis over the arrangement term, up to the amount of cash received. When up-front payments are received and the planned levels of research and development services fluctuate over the research term, revenues are recorded using the proportional performance method, up to the amount of cash received. Where arrangements include milestones that are determined to be substantive and at risk at the inception of the arrangement, revenues are recognized upon achievement of the milestone and is limited to those amounts whereby collectability is reasonably assured.

Grants are agreements that generally provide cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues from grants are recognized in the period during which the related costs are incurred, provided that the conditions under which the grants were provided have been met and only perfunctory obligations are outstanding.

Cost of Products Sold

Cost of products sold includes the production costs of renewable products, which include the cost of raw materials, amounts paid to contract manufacturers and period costs including inventory write-downs resulting from applying lower of cost or net realizable value inventory adjustments. Cost of products sold also includes certain costs related to the scale-up of production. Shipping and handling costs charged to customers are recorded as revenues. Outbound shipping costs incurred are included in cost of products sold. Such charges were not material for any of the periods presented.

Research and Development

Research and development costs are expensed as incurred and include costs associated with research performed pursuant to collaborative agreements and government grants, including internal research. Research and development costs consist of direct and indirect internal costs related to specific projects, as well as fees paid to others that conduct certain research activities on the Company’s behalf.

Debt Extinguishment

The Company accounts for the income or loss from extinguishment of debt in accordance with ASC 470, *Debt,* which indicates that for all extinguishment of debt, the difference between the reacquisition price and the net carrying amount of the debt being extinguished should be recognized as gain or loss when the debt is extinguished. The gain or loss from debt extinguishment is recorded in the consolidated statements of operations under "other income (expense)" as "gain (loss) from extinguishment of debt."

Stock-based Compensation

The Company accounts for stock-based employee compensation plans under the fair value recognition and measurement provisions of U.S. GAAP. Those provisions require all stock-based payments to employees, including grants of stock options and restricted stock units (RSUs), to be measured using the grant-date fair value of each award. The Company recognizes stock-based compensation expense net of expected forfeitures over each award's requisite service period, which is generally the vesting term. Expected forfeiture rates are based on the Company's historical experience. Stock-based compensation plans are described more fully in Note 12, "Stock-based Compensation".

Income Taxes

The Company is subject to income taxes in the United States and foreign jurisdictions and uses estimates to determine its provisions for income taxes. The Company uses the asset and liability method of accounting for income taxes, whereby deferred tax asset or liability account balances are calculated at the balance sheet date using current tax laws and rates in effect for the year in which the differences are expected to affect taxable income.

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. The Company recognizes a valuation allowance against its net deferred tax assets unless it is more likely than not that such deferred tax assets will be realized. This assessment requires judgement as to the likelihood and amounts of future taxable income by tax jurisdiction.

The Company applies the provisions of Financial Accounting Standards Board (FASB) guidance on accounting for uncertainty in income taxes. The Company assesses all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability, and the tax benefit to be recognized is measured at the largest amount of benefit that is greater than 50 percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and the Company will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgement, and such judgements may change as new information becomes available.

Foreign Currency Translation

The assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, are translated from their respective functional currencies into U.S. dollars at the rates in effect at each balance sheet date, and revenue and expense amounts are translated at average rates during each period, with resulting foreign currency translation adjustments recorded in other comprehensive loss, net of tax, in the consolidated statements of stockholders' deficit. As of December 31, 2017 and 2016, cumulative translation losses, net of tax, were $42.2 million and $40.9 million, respectively.

Where the U.S. dollar is the functional currency, remeasurement adjustments are recorded in other income (expense), net in the accompanying consolidated statements of operations. Net losses resulting from foreign exchange transactions were $0.4 million, $0.6 million, and $1.3 million for the years ended December 31, 2017, 2016, and 2015, respectively.

Recently Adopted Accounting Standards

During the year ended December 31, 2017 the Company adopted the following Accounting Standards Updates (ASUs):

- ASU 2015-11, *Inventory (Topic 330): Simplifying the Measurement of Inventory.* Under ASU 2015-11, inventory is measured at the lower of cost or net realizable value (NRV). NRV is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Under the previous guidance, inventory was measured at the lower of cost or market, with market defined as NRV less a normal profit margin.

- ASU 2016-06*, Derivatives and Hedging (Topic 815): Contingent Put and Call Options in Debt Instruments.* The Company did not elect a one-time option, as of January 1, 2017, to irrevocably elect to measure the Company's debt instruments at fair value with changes in fair value recognized in earnings.

- ASU 2016-09, *Compensation–Stock Compensation (Topic 718): Improvements to Employee Share-based Payment Accounting.* ASU 2016-09 simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, classification on the statement of cash flows and an entity can now make an entity-wide election to either estimate the number of awards expected to vest or account for forfeitures when they occur. The Company elected to continue to estimate expected forfeitures using historical experience and will revise its estimated forfeiture rate if actual forfeitures differ from initial estimates. Upon adoption, the Company recognized previously unrecognized excess tax benefits using the modified retrospective transition method. The previously unrecognized excess tax effects were recorded as a deferred tax asset, which was fully offset by a valuation allowance. Without the valuation allowance, the Company’s deferred tax assets would have increased by $40.1 million.

None of the adopted ASUs had a material impact on the Company’s consolidated financial statements and related disclosures.

Recently Issued Accounting Standards Not Yet Adopted

Revenue Recognition

In May 2014, the FASB issued Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), which will become effective for the Company beginning in the first quarter of 2018. The standard's core principle is that a reporting entity will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The FASB issued supplemental adoption guidance and clarification to ASU 2014-09 in March 2016, April 2016, May 2016 and December 2016 within ASU 2016-08, *Revenue from Contracts with Customers: Principal versus Agent Considerations*, ASU 2016-10, *Revenue from Contracts with Customers: Identifying Performance Obligations and Licensing*, ASU 2016-12, *Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients*, and ASU 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers*, respectively.

The Company is adopting these standards using the modified retrospective approach applied only to contracts that are not completed at the adoption date of January 1, 2018. The cumulative effect of adopting these standards will be recorded to retained earnings on January 1, 2018. The Company has made substantial progress towards completing its assessment of the effect of adoption and, based on that assessment, the standard will impact the measurement and timing of recognition of royalty revenues (previously referred to as value share) and the measurement and timing of recognition of certain variable incentive payments payable by the Company. Under the new standard, the Company will be required to measure the variable consideration in the transaction price of royalty revenues and accelerate recognition of royalty revenues that have been recognized during the period the royalty report was received to the periods during which the renewable product sales occur, subject to the constraint on variable consideration. The Company also will be required to measure certain variable incentive payments payable by the Company as part of the transaction price. Adoption of the standard will result in a pretax adjustment to retained earnings on January 1, 2018 ranging from a decrease of $1.0 million to an increase of $2.0 million, primarily from the measurement of the variable consideration in the transaction price of royalty revenues and the acceleration of royalty revenue recognition. Adoption of these standards also will result in additional revenue-related disclosures in the notes to the condensed consolidated financial statements for the first quarter of 2018.

Financial Instruments

In January 2016, the FASB issued ASU 2016-01, *Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*, which changes the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. ASU 2016-01 requires, among other things, that equity investments (other than those accounted for using

the equity method of accounting) be measured at fair value through earnings. However, entities can elect a measurement alternative if the equity investment does not have a readily determinable fair value. Under this alternative method, the equity investment is recorded at cost and remeasured to fair value when there is an observable transaction involving the same or similar equity investment or an impairment. ASU 2016-01 became effective January 1, 2018, and the transition provisions generally require adoption using the modified retrospective approach. However, ASU 2016-01 is applied prospectively to equity investments without a readily determinable fair value that exist as of the date of adoption. The election to apply to measurement alternative is made upon the adoption of ASU 2016-01, and subsequently upon the purchase or acquisition of an equity investment.

In February 2018, the FASB issued ASU 2018-03, *Technical Corrections and Improvements to Financial Instruments - Recognition and Measurement of Financial Assets and Financial Liabilities*. ASU 2018-03 provides reporting entities with the option to move from the measurement alternative to fair value through current earnings but stipulates that once the voluntary election is made to stop using the measurement alternative it can no longer be applied to any identical or similar investment from the same issuer. ASU 2018-03 also clarifies that when applying the measurement alternative to equity investments that do not have a readily determinable fair value the equity investment is remeasured to its fair value as of the date of the observable price/transaction. ASU 2018-03 is effective for fiscal years beginning after December 15, 2017, and interim periods beginning after June 15, 2018, but may be adopted concurrently with ASU 2016-01.

The Company will be adopting ASU 2016-01 and ASU 2018-03 concurrently on January 1, 2018. The Company is currently evaluating the adoption impact of these standards, including whether to elect the measurement alternative for the investment in the unregistered shares of SweeGen, Inc. The Company does not expect the impact of adoption to be material to the consolidated financial statements.

Leases

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842),* with fundamental changes as to how entities account for leases. Lessees will need to recognize a right-of-use asset and a lease liability for virtually all of their leases (other than leases that meet the definition of a short-term lease). The liability will be equal to the present value of lease payments. The asset will be based on the liability, subject to adjustment, such as for initial direct costs. Additional disclosures for leases will also be required. The accounting standard update will be effective beginning in the first quarter of fiscal 2019 using a modified retrospective approach, which requires lessees and lessors to recognize and measure leases at the beginning of the earliest period presented. The Company is in the initial stages of evaluating the impact of the new standard on its consolidated financial statements.

Classification of Cash Flow Elements

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230) - *Classification of Certain Cash Receipts and Cash Payments*. The new standard amends the existing standards for the statement of cash flows to

provide guidance on the following cash flow issues: debt prepayment or debt extinguishment costs; settlement of zero-coupon or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies; distributions received from equity method investees; beneficial interests in securitization transactions; separately identifiable cash flows and application of the predominance principle; and restricted cash. ASU 2016-15 became effective January 1, 2018 with adoption required using the retrospective transition method. The Company is evaluating the impact that this standard will have on the consolidated statement of cash flows.

Income Tax Consequences of Intra-Entity Transfers of Assets Other Than Inventory

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers Other than Inventory*, which requires companies to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs, rather than when the asset has been sold to an outside party. The Company will adopt the new standard effective January 1, 2018, using the modified retrospective transition approach through a cumulative-effect adjustment to retained earnings as of the effective date. A cumulative-effect adjustment will capture the write-off of income tax consequences deferred from past intra-entity transfers involving assets other than inventory, new deferred tax assets, and other liabilities for amounts not currently recognized under U.S. GAAP. Based on transactions up to December 31, 2017, the Company anticipates that the effect of adoption of ASU 2016-16 on the consolidated financial statements will be immaterial.

Restricted Cash in Statement of Cash Flows

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): *Restricted Cash*, to address the diversity in the classification and presentation of changes in restricted cash in the statement of cash flows by requiring entities to combine the changes in cash and cash equivalents and restricted cash in one line. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash in the statement of cash flows. Additionally, if more than one line item is recorded on the balance sheet for cash and cash equivalents and restricted cash, a reconciliation between the statement of cash flows and balance sheet is required. ASU 2016-18 became effective January 1, 2018 with adoption required using the retrospective transition method. The Company does not expect the impact of adoption to be material to the consolidated statement of cash flows.

Derecognition of Nonfinancial Assets

In February 2017, the FASB issued ASU 2017-05, *Other Income—Gains and Losses from the Derecognition of Nonfinancial Assets (Subtopic 610-20): Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets,* which requires entities to apply certain recognition and measurement principles in ASC 606 when they derecognize nonfinancial assets and in substance nonfinancial assets, and the counterparty is not a customer. The guidance applies to: (1) contracts to transfer to a noncustomer a nonfinancial asset or group of nonfinancial assets, or an ownership interest in a consolidated subsidiary that does not meet the definition of a business and is not a not-for-profit activity; and (2) contributions of nonfinancial assets that are not a business to a joint venture or other noncontrolled investee. The accounting standard update will be effective beginning in the first quarter of fiscal 2018 on a modified retrospective basis. The Company is assessing the impact to its accounting practices and financial reporting procedures as a result of the issuance of this standard.

Financial Instruments with "Down Round" Features

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share (Topic 260); Distinguishing Liabilities from Equity (Topic 480); Derivatives and Hedging (Topic 815): Accounting for Certain Financial Instruments with Down Round Features*. The amendments of this ASU update the classification analysis of certain equity-linked financial instruments, or embedded features, with down round features, as well as clarify existing disclosure requirements for equity-classified instruments. When determining whether certain financial instruments should be classified as liabilities or equity instruments, a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity's own stock. The accounting standard update will be effective beginning in the first quarter of fiscal 2019 using a modified retrospective approach. The Company is in the initial stages of evaluating the impact of the new standard on its consolidated financial statements.

2. Balance Sheet Details

Accounts Receivable, Net

December 31, (In thousands)	2017	2016
Accounts receivable	$19,572	$13,673
Related party accounts receivable	14,691	805
	34,263	14,478
Less: allowance for doubtful accounts	(642)	(501)
Total accounts receivable, net	$33,621	$13,977

Inventories

December 31, (In thousands)	2017	2016
Raw materials	$819	$3,159
Work in process	364	1,848
Finished goods	4,225	1,206
Total inventories	$5,408	$6,213

Property, Plant and Equipment, net

December 31, (In thousands)	2017	2016
Machinery and equipment	$49,277	$82,688
Leasehold improvements	40,036	38,785
Computers and software	9,555	9,585
Buildings	—	4,699
Furniture and office equipment, vehicles and land	3,415	2,957
Construction in progress	17,438	2,216
	119,721	140,930
Less: accumulated depreciation and amortization	(105,829)	(87,195)
Total property, plant and equipment, net	$13,892	$53,735

Property, plant and equipment, net includes $4.2 million and $3.1 million of machinery and equipment under capital leases as of December 31, 2017 and 2016, respectively. Accumulated amortization of assets under capital leases totaled $1.6 million and $0.6 million as of December 31, 2017 and 2016, respectively.

Depreciation and amortization expense, including amortization of assets under capital leases, was $11.4 million, $11.4 million and $12.9 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Losses (gains) on disposal of property, plant and equipment were $0.1 million, $(0.2) million and $0.2 million for the years ended December 31, 2017, 2016 and 2015, respectively. Such losses or gains were included in the line captioned "Other expense, net" in the consolidated statements of operations.

In December 2017, the Company's sold its Brotas production plant in Brazil to a unit of DSM Nutritional Products Ltd (together with its affiliates, DSM); see Note 13, "Divestiture" for details.

In 2016, the Company recorded an impairment charge of $7.3 million (in "Impairment of property, plant and equipment" in the consolidated statements of operations), related to assets used in a Brazilian joint venture and by a Brazilian contract manufacturer.

Other Assets

December 31, **(In thousands)**	2017	2016
Contingent consideration	$8,151	$—
Prepaid royalty	7,409	—
Cost-method investment in SweeGen	3,233	—
Deposits	2,462	409
Goodwill	560	560
Other	825	1,366
Total other assets	$22,640	$2,335

Accrued and Other Current Liabilities

December 31, **(In thousands)**	2017	2016
Accrued interest	$8,213	$4,847
Payroll and related expenses	7,238	6,344
Tax-related liabilities	5,837	2,610
SMA relocation accrual	3,587	3,641
Other	2,633	5,792
Professional services	1,894	6,876
Total accrued and other current liabilities	$29,402	$30,110

Other Noncurrent Liabilities

December 31, **(In thousands)**	2017	2016
Deferred rent, net of current portion	$7,818	$8,906
Deferred revenue, net of current portion	383	6,650
Capital lease obligation, net of current portion	217	334
Accrued interest, net of current portion	—	5,542
Other liabilities	2,214	2,299
Total other noncurrent liabilities	$10,632	$23,731

3. Fair Value Measurement

Assets and liabilities are measured and reported at fair value per related accounting standards that define fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value. An asset's or liability's level is based on the lowest level of input that is significant to the fair value measurement. Assets and liabilities carried at fair value are valued and disclosed in one of the following three levels of the valuation hierarchy:

- Level 1: Quoted market prices in active markets for identical assets or liabilities.
- Level 2: Observable market-based inputs or unobservable inputs that are corroborated by market data.
- Level 3: Unobservable inputs that are not corroborated by market data.

As of December 31, 2017 and 2016, the Company’s financial assets and financial liabilities measured at fair value on a recurring basis were classified within the fair value hierarchy as follows:

December 31, (In thousands)	2017				2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets								
Money market funds	$53,199	$ —	$—	$53,199	$1,549	$—	$—	$1,549
Certificates of deposit	7,813	—	—	7,813	1,373	—	—	1,373
Total assets measured and recorded at fair value	$61,012	$ —	$—	$61,012	$2,922	$—	$—	$2,922
Liabilities								
Embedded derivatives in connection with issuance of debt and equity instruments	$—	$ —	$4,203	$4,203	$—	$—	$2,283	$2,283
Freestanding derivative instruments in connection with issuance of equity instruments	—	—	$115,775	$115,775	—	—	1,852	1,852
Cross-currency interest rate swap derivative liability[(1)]	—		—	—	—	3,343	—	3,343
Total liabilities measured and recorded at fair value	$—	$ —	$119,978	$119,978	$—	$3,343	$4,135	$7,478

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(1) The balance of the cross-currency interest rate swap derivative liability at December 31, 2017 was zero, subsequent to the Company's December 2017 repayment in full of the Banco Pine loan.

There were no transfers between the levels during 2017 or 2016.

The Company’s assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgements and consider factors specific to the asset or liability. The fair values of money market funds and certificates of deposit are based on fair values of identical assets. The fair values of the loans payable, convertible notes, credit facilities and cross-currency interest rate swap are based on the present value of expected future cash flows and assumptions about current interest rates and the creditworthiness of the Company. The method of determining the fair value of the compound embedded derivative liabilities is described subsequently in this note. Market risk associated with the fixed and variable rate long-term loans payable, credit facilities and convertible notes relates to the potential reduction in fair value and negative impact to future earnings, from an increase in interest rates. Market risk associated with the compound embedded derivative liabilities relates to the potential reduction in fair value and negative impact to future earnings from a decrease in interest rates.

At December 31, 2017 and December 31, 2016, the carrying value of certain financial instruments, such as cash equivalents, accounts receivable, prepaid expenses and other current assets, accounts payable and other current accrued liabilities, approximate fair value due to their relatively short maturities and low market interest rates, if applicable.

Derivative Instruments

The following table provides a reconciliation of the beginning and ending liability balances associated with both freestanding and compound embedded derivatives measured at fair value using significant unobservable inputs (Level 3):

(in thousands)	2017	2016
Balance at January 1	$4,135	$46,430
Additions	130,957	2,050
(Gain) loss from change in fair value of derivative liabilities	31,600	(41,459)
Derecognition upon conversion or extinguishment	(46,714)	(2,886)
Balance at December 31	$119,978	$4,135

The liabilities associated with freestanding and compound embedded derivatives represent the fair value of the equity conversion options, make-whole provisions, down round conversion price or conversion rate adjustment provisions and antidilution provisions in some of the Company's debt, preferred stock, cash warrants and antidilution warrants; see Note 4, "Debt", and Note 6, "Stockholders' Deficit. There is no current observable market for these types of derivatives and, as such, the Company determined the fair value of the freestanding or embedded derivatives using the

binomial lattice model. The binomial lattice model was used to value the embedded and freestanding derivatives.

A Monte Carlo simulation valuation model combines expected cash outflows with market-based assumptions regarding risk-adjusted yields, stock price volatility, probability of a change of control and the trading information of the Company's common stock into which the notes are or may be convertible. A binomial lattice model generates two probable outcomes - one up and another down - arising at each point in time, starting from the date of valuation until the maturity date.

A lattice model was used to determine if a convertible note or share of convertible preferred stock would be converted, called or held at each decision point. Within the lattice model, the following assumptions are made: (i) the convertible note or share of convertible preferred stock will be converted early if the conversion value is greater than the holding value and (ii) the convertible note or share of convertible preferred stock will be called if the holding value is greater than both (a) redemption price and (b) the conversion value at the time. If the convertible note or share of convertible preferred stock is called, the holder will maximize their value by finding the optimal decision between (1) redeeming at the redemption price and (2) converting the convertible note or share of convertible preferred stock. Using this lattice method, the Company valued the embedded and freestanding derivatives using the "with-and-without method", where the fair value of each related convertible note or share of convertible preferred stock including the embedded derivative is defined as the "with", and the fair value of the convertible note excluding the embedded derivatives is defined as the "without". This method estimates the fair value of the embedded and freestanding derivatives by looking at the difference in the values between each convertible note or share of convertible preferred stock with the embedded and freestanding derivatives and the fair value of such convertible note or share of convertible preferred stock without the embedded and freestanding derivatives. The lattice model uses the stock price, conversion price, maturity date, risk-free interest rate, estimated stock volatility and estimated credit spread. The Company marks the compound embedded derivatives to market due to the conversion price not being indexed to the Company's own stock.

The market-based assumptions and estimates used in valuing the compound embedded and freestanding derivative liabilities include amounts in the following ranges/amounts:

December 31,	2017			2016		
Risk-free interest rate	1.68%	-	2.40%	0.55%	-	1.31%
Risk-adjusted yields	18.40%	-	28.53%	12.80%	-	22.93%
Stock price volatility	45%	-	80%	45%		
Probability of change in control	5%			5%		
Stock price	$3.75			$10.95		
Credit spread	16.63%	-	26.70%	11.59%	-	21.64%
Estimated conversion dates	2018	-	2025	2017	-	2019

Changes in valuation assumptions can have a significant impact on the valuation of the embedded and freestanding derivative liabilities. For example, all other things being equal, a decrease/increase in the Company’s stock price, probability of change of control, credit spread, term to maturity/conversion or stock price volatility decreases/increases the valuation of the liabilities, whereas a decrease/increase in risk adjusted yields or risk-free interest rates increases/decreases the valuation of the liabilities. Certain of the convertible notes and shares of convertible preferred stock also include conversion price adjustment features and, for example, certain issuances of common stock by the Company at prices lower than the current conversion price result in a reduction of the conversion price of such notes or convertible preferred stock, which increases the value of the embedded and freestanding derivative liabilities; see Note 4, "Debt" for details.

In June 2012, the Company entered into a cross-currency interest rate swap arrangement with Banco Pine with respect to the repayment of R$22.0 million (approximately U.S. $6.6 million based on the exchange rate as of December 31, 2017) of the Banco Pine Note. The swap arrangement exchanged the principal and interest payments under the Banco Pine Note (see Note 4, "Debt") for alternative principal and interest payments that are subject to adjustment based on fluctuations in the foreign currency exchange rate between the U.S. dollar and Brazilian real. The swap had a fixed interest rate of 3.94%. Changes in the fair value of the swap were recognized in the consolidated statements of operations, in “Gain (loss) from change in fair value of derivative instruments". As of December 31, 2017, the balances of the loan and the associated cross-currency interest rate swap were zero.

On July 29, 2015, Maxwell (Mauritius) Pte Ltd (Temasek) exchanged its Tranche I Notes and Tranche II Notes (see the "August 2013 Financing Convertible Notes" subsection of Note 4, "Debt") and Total exchanged $70 million in principal amount of R&D Notes (see the "R&D Note" subsection of Note 4, "Debt") for shares of the company's common stock (the “Exchange”). As part of the Exchange transaction, the Company granted a warrant to Temasek to purchase the Company’s common stock (the Temasek Funding Warrant). The terms of the Temasek Funding Warrant provide for an adjustment to the number of shares issuable in the future based on the number of any additional shares for which certain of the Company’s outstanding convertible promissory notes may become exercisable as a result of a reduction to the conversion price of such notes, including down-round provisions. As a result of the future adjustment feature (for reduction to the conversion price of outstanding convertible notes), the Company determined the Temasek

Funding Warrant would not meet the conditions in ASC 815-40-15 to be considered indexed to the Company's own equity. Consequently, the Temasek Funding Warrant is a derivative and is marked to market each reporting period. The Temasek Funding Warrant is valued using a Black-Scholes valuation model with the following assumptions (in addition to the Company's share price):

	Initial recognition (July 29, 2015)	
Expected dividend yield	—	%
Risk-free interest rate	2	%
Expected term (in years)	10.0	
Expected volatility	74	%

The Company recognized a derivative liability for the Temasek Funding Warrant of $19.4 million on July 29, 2015. On December 15, 2015, Temasek exercised the Temasek Funding Warrant for cash of $0.1 million. At the day of exercise, the Temasek Funding Warrant was valued at $18.9 million, which was the fair value of the 12.7 million shares issued upon exercise of the warrant. In February and May 2016, as a result of adjustments to the conversion price of the Tranche I Notes and the Tranche II Notes (see Note 4, "Debt"), the Temasek Funding Warrant became exercisable for an additional 164,169 shares of common stock. Following the issuance by the Company of shares of convertible preferred stock and warrants to purchase common stock in May 2017 and August 2017 (see Note 6, "Stockholders' Deficit), and corresponding adjustments to the conversion price of the Tranche I Notes and Tranche II Notes (see Note 4, "Debt"), the Temasek Funding Warrant became exercisable for an additional 1,125,755 and 600,062 shares of common stock, respectively.

The May 2017 Series A Preferred Stock and Series B Preferred Stock, the August 2017 DSM Offering and the August 2017 Vivo Offering (see Note 6, "Stockholder's Deficit") included make whole provisions, which are accounted for as embedded derivatives. Cash and antidilution warrants, classified as freestanding financial instruments, were also issued in conjunction with the financings and are classified as derivative liabilities. The total derivative liability recorded for the May 2017 Warrants, May 2017 Offering make whole provision, August 2017 DSM Offering warrants and make whole provision and August 2017 Vivo Offering was $123.0 million. The value of the embedded and freestanding derivatives at December 31, 2017 was $120.0 million. The Company recorded a gain of $1.1 million in fiscal year 2017 for the change in value and extinguishments of these derivative liabilities. See Note 6, "Stockholders' Deficit" for additional details.

Derivative instruments measured at fair value on a recurring basis as of December 31, 2017 and 2016, and their classification on the consolidated balance sheets are as follows:

December 31, **(In thousands)**	2017	2016
Swap obligation, at fair market value:		
Current portion	$—	$584
Noncurrent portion	—	2,759
Total swap obligation	—	3,343
Freestanding or compound embedded derivative liabilities, at fair value	119,978	4,135
Total derivative liabilities	$119,978	$7,478

Assets and Liabilities Recorded at Carrying Value

Financial Assets and Liabilities

The carrying amounts of certain financial instruments, such as cash equivalents, accounts receivable, accounts payable and accrued liabilities, approximate fair value due to their relatively short maturities and low market interest rates, if applicable. Loans payable, credit facilities and convertible notes are recorded at carrying value, which is representative of fair value at the date of acquisition. The Company estimates the fair value of loans payable and credit facilities using observable market-based inputs (Level 2) and estimates the fair value of convertible notes based on rates currently offered for instruments with similar maturities and terms (Level 3). The carrying amount of the Company's debt at December 31, 2017 was $165.4 million. The fair value of such debt at December 31, 2017 was $156.9 million, and was determined by discounting expected cash flows using the Company's weighted-average cost of capital of 27%.

Cost-method Investment

In April 2017, the Company received 850,115 unregistered shares of SweeGen common stock in satisfaction of the payment obligation of Phyto Tech Corp. (d/b/a Blue California) under the Intellectual Property License and Strain Access Agreement entered into between Blue California and the Company in December 2016. The Company obtained an independent valuation of the shares that established acquisition-date fair value of $3.2 million using an income approach under which cash flows were discounted to present value at 40%.

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4. Debt

December 31, (In thousands)	2017			2016		
	Principal	Unamortized Debt (Discount) Premium	Net	Principal	Unamortized Debt (Discount) Premium	Net
Convertible notes payable						
2015 Rule 144A convertible notes	$37,887	$ (6,872)	$31,015	$40,478	$ (17,712)	$22,766
2014 Rule 144A convertible notes	24,004	(3,170)	20,834	27,404	(5,399)	22,005
December 2016, April 2017, June 2017 and December 2017 convertible notes	5,000	(25)	4,975	10,000	(78)	9,922
August 2013 financing convertible notes	4,009	(2,918)	1,091	13,826	(4,579)	9,247
Fidelity notes	—	—	—	15,309	(326)	14,983
	70,900	(12,985)	57,915	107,017	(28,094)	78,923
Related party convertible notes payable						
August 2013 financing convertible notes	21,711	897	22,608	19,781	2,033	21,814
2014 Rule 144A convertible notes	24,705	(3,784)	20,921	24,705	(7,380)	17,325
R&D note	3,700	(18)	3,682	3,700	(80)	3,620
	50,116	(2,905)	47,211	48,186	(5,427)	42,759
Loans payable and credit facilities						
Senior secured loan facility	28,566	(253)	28,313	28,566	(908)	27,658
Ginkgo notes	12,000	(4,983)	7,017	8,500	—	8,500
Nossa Caixa and Banco Pine notes	—	—	—	11,135	—	11,135
Other loans payable	6,463	(1,277)	5,186	8,305	(1,361)	6,944
Guanfu credit facility	—	—	—	25,000	(5,436)	19,564
Other credit facilities	381	—	381	1,869	—	1,869
	47,410	(6,513)	40,897	83,375	(7,705)	75,670
Related party loans payable						
DSM note	25,000	(8,039)	16,961	—	—	—
February 2016 private placement	2,000	—	2,000	20,000	(1,309)	18,691
Other DSM loan	393	—	393	—	—	—
June and October 2016 private placements	—	—	—	11,000	—	11,000
	27,393	(8,039)	19,354	31,000	(1,309)	29,691
Total debt	$195,819	$ (30,442)	165,377	$269,578	$ (42,535)	227,043
Less: current portion			(56,943)			(59,155)
Long-term debt, net of current portion			$108,434			$167,888

Future minimum payments under the debt agreements as of December 31, 2017 are as follows:

Years Ending December 31, (In thousands)	Convertible Notes	Related Party Convertible Notes	Loans Payable and Credit Facilities	Related Party Loans Payable	Total
2018	$ 11,060	$ 20,835	$36,465	$5,423	$73,783
2019	69,334	35,238	1,704	2,500	108,776
2020	—	—	1,627	2,500	4,127
2021	—	—	1,627	27,500	29,127
2022	—	—	13,417	—	13,417
Thereafter	—	—	2,528	—	2,528
Total future minimum payments[1]	80,394	56,073	57,368	37,923	231,758
Less: amount representing interest[2]	(22,479)	(8,862)	(16,471)	(18,569)	(66,381)
Present value of minimum debt payments	57,915	47,211	40,897	19,354	165,377
Less: current portion	(4,932)	(17,626)	(31,992)	(2,393)	(56,943)
Noncurrent portion of debt	$ 52,983	$ 29,585	$8,905	$16,961	$108,434

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(1) Including $5.8 million in 2018 related to the $5 Million Note that, at the Company's election, may be settled in cash or shares, and an aggregate of $25.0 million in 2018 and 2019 that a holder of the Tranche Notes has agreed to convert to common stock at maturity, subject to there being no default under the terms of the debt; see "Maturity Treatment Agreement" below for details.

(2) Including net debt discount of $30.4 million that will be amortized to interest expense under the effective interest method over the term of the debt.

Convertible Notes Payable

2015 Rule 144A Convertible Notes

In October 2015, the Company sold $57.6 million aggregate principal amount of 9.50% convertible senior notes due 2019 (the 2015 144A Notes) to certain qualified institutional buyers in a private placement. Net proceeds from the offering were $54.4 million after payment of offering expenses and placement agent fees, which together are treated as a debt discount and are being amortized over the remaining loan term. The Company used $18.3 million of the net proceeds to repurchase $22.9 million aggregate principal amount of outstanding 2014 144A Notes as discussed below. The 2015 144A Notes bear interest at a rate of 9.50% per year, payable semiannually in arrears on April 15 and October 15 of each year. Interest on the 2015 144A Notes is payable, at the Company's option, entirely in cash or entirely in common stock valued at 92.5% of a market-based price. The Company elected to make the April 15, 2016 and 2017 interest payments in shares of common stock and the October 15, 2016 and 2017 interest payments in cash.

The 2015 144A Notes will mature on April 15, 2019 unless earlier converted or repurchased.

The 2015 144A Notes are convertible into shares of the Company's common stock at a conversion rate of 58.2076 shares per $1,000 principal amount of 2015 144A Notes (which conversion rate is subject to adjustment in certain circumstances), representing an effective conversion price of approximately $17.18 per share as of December 31, 2017. If converted prior to maturity, noteholders are entitled to receive a payment (the Early Conversion Payment) equal to the present value of the remaining scheduled payments of interest on the 2015 144A Notes being converted through April 15, 2019, computed using a discount rate of 0.75%. The Company may make the Early Conversion Payment, at its election, either in cash or, subject to certain conditions, in common stock valued at 92.5% of a market-based price. Through December 31, 2017, the Company has elected to make each Early Conversion Payment in shares of common stock.

In January 2017, the Company issued an additional $19.1 million in aggregate principal amount of 2015 144A Notes (the Additional 2015 144A Notes) in exchange for the cancellation of $15.3 million in aggregate principal amount of outstanding Fidelity Notes, as further described below under “Fidelity Notes,” with the same terms as the 2015 144A Notes; provided, that the aggregate number of shares issued with respect to the Additional 2015 144A Notes (and any other transaction aggregated for such purpose) cannot exceed 3,652,935 shares of common stock (the Additional 2015 144A Notes Exchange Cap) without prior stockholder approval. The exchange was accounted for as an extinguishment of debt, resulting in a $0.1 million gain in the year ended December 31, 2017.

In May 2017, the Company exchanged $3.7 million in aggregate principal amount of 2015 144A Notes for shares of its Series B 17.38% Convertible Preferred Stock and warrants to purchase common stock, as described in more detail in Note 6, “Stockholders’ Deficit”. The exchange was accounted for as an extinguishment of debt, resulting in a $2.0 million loss in the year ended December 31, 2017.

2014 Rule 144A Convertible Notes

In May 2014, the Company sold $75.0 million in aggregate principal amount of 6.50% Convertible Senior Notes due 2019 (the 2014 144A Notes) to qualified institutional buyers in a private placement. The net proceeds from the offering were $72.0 million after payment of initial purchaser discounts and offering expenses, which together are treated as a debt discount and are being amortized over the remaining loan term. The Company used $9.7 million of the net proceeds to repay convertible notes previously issued to an affiliate of Total S.A. (together with its affiliates, Total), representing the amount of 2014 144A Notes purchased by Total. Certain of the Company's affiliated entities (including Total) purchased $24.7 million in aggregate principal amount of 2014 144A Notes. The 2014 144A Notes bear interest at an annual rate of 6.5%, payable semiannually in arrears on May 15 and November 15 of each year in cash. The 2014 144A Notes mature on May 15, 2019, unless earlier converted or repurchased.

The 2014 144A Notes are convertible into shares of the Company's common stock at a conversion rate of 17.8073 shares per $1,000 principal amount of 2014 144A Notes (which conversion rate is subject to adjustment in certain circumstances), representing an effective conversion price of approximately $56.16 per share as of December 31, 2017. See the "Maturity Treatment Agreement" section below for details of the impact of that agreement on the 2014 144A Notes.

In May 2017, the Company exchanged $3.4 million in aggregate principal amount of 2014 144A Notes for shares of its Series B 17.38% Convertible Preferred Stock and warrants to purchase common stock, as described in more detail in Note 6, “Stockholders’ Deficit". The exchange was accounted for as an extinguishment, resulting in a $1.8 million loss for the year ended December 31, 2017.

Maturity Treatment Agreement

In July 2015, the Company entered into an Exchange Agreement (the 2015 Exchange Agreement) with Total and Temasek pursuant to which Temasek exchanged $71.0 million in principal amount of outstanding Tranche Notes and Total exchanged $70.0 million in principal amount of outstanding convertible notes for shares of the Company's common stock at a price of $34.50 per share (2015 Exchange). At the closing of the 2015 Exchange, the Company, Total and Temasek also entered into a Maturity Treatment Agreement dated July 29, 2015, pursuant to which Total

and Temasek agreed to convert any Tranche Notes or 2014 144A Notes held by them that were not canceled in the 2015 Exchange (Remaining Notes) into shares of the Company's common stock in accordance with the terms of such Remaining Notes at or prior to maturity, provided that certain events of default had not occurred with respect to the applicable Remaining Notes. In May 2017, the Company entered into separate letter agreements with each of Total and Temasek, pursuant to which the Company agreed that the Remaining Notes consisting of 2014 144A Notes held by Total ($9.7 million in principal amount as of December 31, 2017) and Temasek ($10.0 million in principal amount as of December 31, 2017) would no longer be subject to mandatory conversion at or prior to the maturity of such Remaining Notes. Accordingly, the Company will be required to pay any portion of such Remaining Notes that remain outstanding at maturity in cash in accordance with the terms of such Remaining Notes. As of December 31, 2017, after giving effect to such letter agreements, Temasek did not hold any Remaining Notes and Total held $21.8 million in principal amount of Remaining Notes (consisting of Tranche Notes). The 2015 Exchange Agreement contains customary terms, covenants and restrictions, including a limit on the Company’s debt of the greater of $200 million or 50% of its consolidated total assets and the Company’s secured debt of the greater of $125 million or 30% of its consolidated total assets, subject to certain exceptions. In addition, the Maturity Treatment Agreement provides that, as long as Total or Temasek holds at least $5 million of Remaining Notes, the Company shall not incur any material debt, prepay any material debt or materially amend any debt.

December 2016, April 2017, June 2017 and December 2017 Convertible Notes

In December 2016, the Company entered into a securities purchase agreement (December 2016 Purchase Agreement) with a private investor (Purchaser) and issued and sold a convertible note in principal amount $10.0 million (the December 2016 Convertible Note) to the Purchaser, resulting in net proceeds to the Company of $9.9 million. The December 2016 Convertible Note was fully repaid in May 2017, and no gain or loss was recorded upon extinguishment.

In April 2017, the Company entered into a securities purchase agreement (April 2017 Purchase Agreement) with the Purchaser relating to the sale of up to an additional $15.0 million aggregate principal amount of convertible notes (the April 2017 Convertible Notes). In April 2017, the Company issued and sold an April 2017 Convertible Note in the principal amount of $7.0 million to the Purchaser, for proceeds to the Company of $6.9 million. This note was fully repaid in May 2017, and a $1.4 million loss was recorded upon extinguishment for the year ended December 31, 2017.

In May 2017, in connection with the Purchaser agreeing to extend the time period for certain obligations of the Company under the April 2017 Purchase Agreement, the Company and the Purchaser entered into an Amendment Agreement (Amendment Agreement) with respect to the December 2016 Purchase Agreement, the December 2016 Convertible Note, the April 2017 Purchase Agreement and the April 2017 Convertible Notes (the Amended Notes). Pursuant to the Amendment Agreement, the Company and the Purchaser agreed, among other things, to (i) reduce the price at which the Company may pay monthly installments under the Amended Notes in common stock to a 20% discount to a market-based price and (ii) reduce the price floor related to any such payment to 70% of a market-based price. No accounting impact was recorded in May 2017.

In June 2017, the Company issued and sold an Amended Note under the April 2017 Purchase Agreement in the principal amount of $3.0 million to the Purchaser, for proceeds to the Company of $3.0 million. This note was fully repaid in August 2017, and a $0.5 million loss was recorded upon extinguishment.

In December 2017, in connection with the Purchaser exercising its right to purchase the remaining Notes under the April 2017 Purchase Agreement, the Company issued and sold an Amended Note under the April 2017 Purchase Agreement in the principal amount of $5.0 million (the $5 Million Note) to the Purchaser, for proceeds to the Company of $5.0 million. In connection with the Purchaser granting certain waivers under the April 2017 Purchase Agreement and the December 2016 Purchase Agreement, the parties agreed to provide for a maturity date of June 1, 2018 for the $5 Million Note. Upon issuance of the $5 Million Note, all of the Notes provided for in the April 2017 Purchase Agreement had been issued and sold. The $5 Million Note is payable in monthly installments, in either cash at 118% of such installment amount or, at the Company's option, subject to the satisfaction of certain equity conditions, shares of common stock at a discount to the then-current market price, subject to a price floor, as described above. In addition, in the event that the Company elects to pay all or any portion of a monthly installment in common stock, the holder of the $5 Million Note has the right to require that the Company repay in common stock an additional amount of the Amended Notes not to exceed 50% of the aggregate amount by which the dollar-weighted trading volume of the Company's common stock for all trading days during the applicable installment period exceeds $200,000. The Company has the right to redeem the $5 Million Note for cash in full or in part at any time at a price equal to 118% of the principal amount being redeemed. The $5 Million Note is convertible at the election of the holder into common stock at a conversion price of $28.50 per share as of December 31, 2017 (which conversion price is subject to adjustment in certain circumstances). The conversion of the $5 Million Note and the repayment of the $5 Million Note in common stock is subject to a beneficial ownership limitation of 4.99% (or such other percentage not to exceed 9.99%, provided that any increase will not be effective until 61 days after notice thereof from the holder), and the aggregate number of shares issued with respect to the $5 Million Note (and any other transaction aggregated for such purpose) cannot exceed 3,645,118 shares of common stock without prior stockholder approval. For as long as it holds the $5 Million Note or shares of common stock issued under the $5 Million Note, the holder may not sell any shares of common stock at a price less than the price floor applicable to the installment period with respect to which such shares were issued. The April 2017 Purchase Agreement and the $5 Million Note contain customary terms, covenants and restrictions, including certain events of default after which the $5 Million Note may become due and payable immediately. At December 31, 2017, the principal balance outstanding was $5.0 million.

August 2013 Financing Convertible Notes

In August 2013, the Company entered into a Securities Purchase Agreement (the August 2013 SPA) with Total and Temasek to sell up to $73.0 million in convertible notes in private placements (the August 2013 Financing). The August 2013 SPA provided for the August 2013 Financing to be divided into two tranches, each with differing closing conditions. The Tranche I Notes are due sixty months from the date of issuance (October 16, 2018). Interest accrues on the Tranche I Notes at 5% per six months, compounded semiannually, and is payable in kind by adding to the principal or in cash. Through December 31, 2017, the Company has elected to pay interest on the Tranche I Notes in kind. The Tranche I Notes may be prepaid in full or in part without penalty or premium every six months at the date of payment of the semiannual coupon.

The Tranche II Notes are due sixty months from the date of issuance (January 15, 2019). Interest accrues on the Tranche II Notes at 10% per annum, compounded annually, and is payable in kind by adding to the principal or in cash. Through December 31, 2017, the Company has elected to pay interest on the Tranche II Notes in kind.

The conversion price of the Tranche Notes is $5.2977 per share as of December 31, 2017 (which conversion price is subject to adjustment in certain circumstances, including certain price-based anti-dilution adjustments). The August 2013 SPA and the Tranche Notes contain customary terms, covenants and restrictions, including a limit on the Company’s debt of the greater of $200 million or 50% of its consolidated total assets and the Company’s secured debt of the greater of $125 million or 30% of its consolidated total assets, subject to certain exceptions. The SPA also requires the Company to obtain the consent of the holders of a majority of these notes before completing any change of control transaction or purchasing assets in one transaction or in a series of related transactions in an amount greater than $20.0 million, in each case while the Tranche Notes are outstanding. In addition, the Tranche Notes contain certain events of default after which the Tranche Notes may become due and payable immediately.

Fidelity Notes

In 2012, the Company sold $25.0 million in aggregate principal amount of convertible promissory notes to entities affiliated with Fidelity (the Fidelity Notes) in a private placement. The Fidelity Notes had a March 1, 2017 maturity date, bore interest at 3.0% per annum and had an initial conversion price equal to $106.02 per share of the Company's common stock. In October 2015, as discussed above, the Company issued $57.6 million of 2015 144A Notes and used approximately $8.8 million of the proceeds therefrom to repurchase $9.7 million aggregate principal amount of outstanding Fidelity Notes. In January 2017, the Company issued $19.1 million in aggregate principal amount of its 2015 144A Notes to the holders of the Fidelity Notes in exchange for the cancellation of the $15.3 million of outstanding Fidelity Notes in a private exchange (the Fidelity Exchange), representing an exchange ratio of approximately 1:1.25 (i.e., each $1.00 of Fidelity Notes was exchanged for approximately $1.25 of additional 2015 144A Notes). The Company did not receive any cash proceeds from the Fidelity Exchange. The Fidelity Exchange was accounted for as an extinguishment of debt, and a gain of $0.1 million was recognized during the year ended December 31, 2017.

Related Party Convertible Notes Payable

August 2013 Financing Convertible Notes

Certain of the August 2013 Financing Convertible Notes are held by related parties. See Note 11, "Related Party Transactions" for details.

2014 Rule 144A Convertible Notes

Certain of the 2014 Rule 144A Convertible Notes are held by related parties. See Note 11, "Related Party Transactions" for details.

R&D Note

In March 2016, as a result of the restructuring of the Company’s fuels joint venture with Total, Total Amyris BioSolutions B.V., the Company issued to Total an unsecured convertible note (the R&D Note) in the principal

amount of $3.7 million, representing the remaining portion of the $105.0 million convertible note facility between the Company and Total initially established in 2012. In February 2017, the Company and Total agreed to extend the maturity of the R&D Note from March 1, 2017 to May 15, 2017. In May 2017, the Company and Total amended the R&D Note to (i) extend the maturity from May 15, 2017 to March 31, 2018, (ii) increase the interest rate from 1.5% to 12.0%, beginning May 16, 2017, and (iii) provide that accrued and unpaid interest will be payable on December 31, 2017 and the maturity date. In March 2018, the Company and Total amended the R&D Note to extend the maturity from March 31, 2018 to May 31, 2018, with accrued and unpaid interest payable on March 31, 2018 and May 31, 2018. The R&D Note is convertible into the Company's common stock, at a conversion price of $46.20 per share as of December 31, 2017 (which conversion price is subject to adjustment in certain circumstances), (i) within 10 trading days prior to maturity, (ii) on a change of control of the Company, and (iii) on a default by the Company. The R&D Note contains customary terms, covenants and restrictions, including a limit on the Company’s debt of the greater of $200 million or 50% of its consolidated total assets and the Company’s secured debt of the greater of $125 million or 30% of its consolidated total assets, subject to certain exceptions. In addition, the R&D Note contains certain events of default after which the R&D Note may become due and payable immediately.

Loans Payable and Credit Facilities

Senior Secured Loan Facility

In March 2014, the Company entered into a Loan and Security Agreement (LSA) with Hercules Technology Growth Capital, Inc. (Hercules) to make available to the Company a secured loan facility (the Senior Secured Loan Facility) in an initial aggregate principal amount of up to $25.0 million. The LSA was subsequently amended in June 2014, March 2015 and November 2015 to (i) extend additional credit facilities to the Company in an aggregate amount of up to $31.0 million, of which $16.0 million was drawn by the Company, (ii) extend the maturity date of the loans, and (iii) remove, add and/or modify certain covenants and agreements under the LSA. In connection with such amendments, the Company paid aggregate fees of $1.5 million to Hercules.

In June 2016, Hercules transferred and assigned its rights and obligations under the Senior Secured Loan Facility to Stegodon Corporation (Stegodon), an affiliate of Ginkgo Bioworks, Inc. (Ginkgo), and in connection with the execution by the Company and Ginkgo of an initial strategic partnership agreement, the Company received a deferment from Stegodon of all scheduled principal repayments under the Senior Secured Loan Facility, as well as a waiver of a covenant in the LSA requiring the Company to maintain unrestricted, unencumbered cash in defined U.S. bank accounts in an amount equal to at least 50% of the principal amount of the loans then outstanding under the Senior Secured Loan Facility (the Minimum Cash Covenant). In October 2016, in connection with the execution by the Company and Ginkgo of a definitive collaboration agreement (the Ginkgo Collaboration Agreement), the Company and Stegodon entered into a fourth amendment of the LSA, pursuant to which the parties agreed to (i) extend the maturity date of the Senior Secured Loan Facility, subject to the Company extending the maturity of certain of its other outstanding indebtedness (the Extension Condition), (ii) make the Senior Secured Loan Facility interest-only until maturity, subject to the requirement that the Company apply certain monies received by it under the Ginkgo Collaboration Agreement to repay the amounts outstanding under the Senior Secured Loan Facility, up to a maximum amount of $1 million per month and (iii) waive the Minimum Cash Covenant until the maturity date of the Senior Secured Loan Facility.

In January 2017, the maturity date of the Senior Secured Loan Facility was extended to October 15, 2018 due to the Extension Condition being met as a result of the Fidelity Exchange; see above under "Fidelity Notes" for additional details. This modification of the Senior Secured Loan Facility was accounted for as a troubled debt restructuring with the future undiscounted cash flows being greater than the carrying value of the debt prior to extension. No gain was recorded, and a new effective interest rate was established based on the carrying value of the debt and the revised future cash flows. In addition, in January 2017, in connection with Stegodon granting certain waivers and releases under the LSA in connection with the formation of the Aprinnova JV (as defined below) (see Note 7, "Variable-interest Entities and Unconsolidated Investments"), the Company and Stegodon entered into a fifth amendment of the LSA, pursuant to which the Company agreed to apply additional monies received by it under the Ginkgo Collaboration Agreement towards repayment of the outstanding loans under the Senior Secured Loan Facility, up to a maximum amount of $3 million.

In December 2017, in connection with Stegodon granting waivers of certain covenants under the LSA in connection with the sale of the Company's Brotas production facility to DSM (see Note 13, “Divestiture”), the Company and Stegodon entered into a sixth amendment of the LSA, pursuant to which the parties agreed, among other things, to (i) amend the maturity date of the LSA from October 15, 2018 to July 15, 2018 (the LSA Maturity Date), (ii) require the Company to make principal repayments of $1.3 million in January 2018 and $5.5 million in March 2018, prior to the July 15, 2018 LSA Maturity Date, (iii) remove the requirement that the Company apply certain monies received by the Company under the Ginkgo Collaboration Agreement towards repayment of the outstanding loans under the Senior Secured Loan Facility, and (iv) require the Company to pledge 65% of its equity interest in SMA and 100% of its equity interest in Novvi LLC as security for the loans under the LSA. The sixth amendment of the LSA was accounted for as a troubled debt restructuring. No gain was recorded, and a new effective interest rate was established based on the carrying value of the debt and the revised future cash flows.

On March 30, 2018, the Company and Stegodon amended the Senior Secured Loan Facility to extend the date for a $5.5 million principal payment from March 31, 2018 to May 31, 2018. Under the extension, the interest rate from April 1, 2018 through the date of payment for the $5.5 million principal will be the previously agreed interest rate plus 5.0%.

Certain of the loans under the Senior Secured Loan Facility bear interest at a rate per annum equal to the greater of (i) the prime rate reported in the Wall Street Journal plus 6.25% and (ii) 9.50%, and certain of the loans under the Senior Secured Loan Facility bear interest at a rate per annum equal to the greater of (i) the prime rate reported in the Wall Street Journal plus 5.25% and (ii) 8.5%, in each case payable monthly. The Company may prepay the loans under the Senior Secured Loan Facility in whole at a price equal to 101% of the principal amount plus an end of term charge equal to $3.3 million. In addition, the Company (i) recorded a fee of $425,000 payable to Stegodon during the year ended December 31, 2017 and (ii) agreed to pay a fee of $450,000 to Stegodon on or prior to the maturity date of the Senior Secured Loan Facility, in connection with Stegodon granting certain waivers and releases under the LSA in connection with the formation of the Aprinnova JV; see Note 7, "Variable-interest Entities and Unconsolidated Investments". The fees paid to Stegodon are treated as a debt discount and are being amortized over the remaining loan term. The Senior Secured Loan Facility is secured by first-priority liens on substantially all of the Company's assets, including Company intellectual property. The LSA includes customary terms, covenants and restrictions, including restrictions on the Company’s ability to incur additional debt and liens, subject to certain exceptions. In addition, the LSA contains certain events of default after which the loans thereunder may become due and payable immediately.

Ginkgo Notes

In November 2017, the Company issued an unsecured promissory note in the principal amount of $12.0 million to Ginkgo (the November 2017 Ginkgo Note) in connection with the termination of the Ginkgo Collaboration Agreement, which is described in Note 10, "Significant Revenue Agreements." The November 2017 Ginkgo Note bears interest at 10.5% per annum, payable monthly, and has a maturity date of October 19, 2022. The November 2017 Ginkgo Note represents advanced payments to be made to Ginkgo under the Partnership Agreement entered into in 2017. The Company determined the fair value of the Note to be $6.8 million, which has been recorded as a prepaid expense. The remaining $5.2 million is treated as a debt discount and will be amortized over the loan term. The November 2017 Ginkgo Note may be prepaid in full without penalty or premium at any time, provided that certain payments have been made under the Company’s partnership agreement with Ginkgo. The November 2017 Ginkgo Note contains customary terms, covenants and restrictions, including certain events of default after which the note may become due and payable immediately.

In October 2016, the Company issued and sold a secured promissory note in the principal amount of $8.5 million to Ginkgo. In April 2017, the Company issued a further secured promissory note to Ginkgo, in the principal amount of $3.0 million, in satisfaction of certain payments owed by the Company under the Ginkgo Collaboration Agreement. Each of the notes bore interest at 13.50% per annum, payable at maturity, and had a maturity date of May 15, 2017. The notes were repaid in full at maturity and the security interests relating thereto were terminated, and no gain or loss was realized upon extinguishment.

Nossa Caixa and Banco Pine Notes

In July 2012, Amyris Brasil entered into a Note of Bank Credit and a Fiduciary Conveyance of Movable Goods Agreement (or, together, the July 2012 Bank Agreements) with each of Nossa Caixa Desenvolvimento (Nossa Caixa) and Banco Pine S.A. (Banco Pine).

Under the July 2012 Bank Agreements, the Company could borrow an aggregate of R$52.0 million (U.S. $15.7 million based on the exchange rate as of December 31, 2017) as financing for capital expenditures relating to the Company's manufacturing facility located in Brotas, Brazil. The funds for the loans were provided by the Brazilian Development Bank (BNDES), but were guaranteed by the lenders. Under the July 2012 Bank Agreements, the Company pledged certain farnesene production assets as collateral for loans (separately, the Nossa Caixa Note and the Banco Pine Note) totaling R$52.0 million (U.S. $15.7 million based on the exchange rate as of December 31, 2017). The Company's total acquisition cost for such pledged assets was R$68.0 million (U.S. $20.6 million based on the exchange rate as of December 31, 2017). The loans have a final maturity date of July 15, 2022 and bore interest at 5.5% per annum.

As of December 31, 2017, outstanding balances for Nossa Caixa and Banco Pine Notes were zero.

Other Loans Payable

Salisbury Note: In December 2016, in connection with the Company’s purchase of a manufacturing facility in Leland, North Carolina and related assets (the Glycotech Assets), the Company issued a purchase money promissory note in the principal amount of $3.5 million (the Salisbury Note) in favor of Salisbury Partners, LLC. The Salisbury Note (i) bore interest at 5.0% per year, (ii) had a term of 13 years, (iii) was payable in equal monthly installments of principal and interest beginning on January 1, 2017 and (iv) was secured by a purchase money lien on the Glycotech Assets. In January 2017, the Salisbury Note was repaid with proceeds from the Nikko Note (as defined below) and the security interest relating thereto was terminated. No gain or loss was recorded upon termination, as the Nikko Note was substantially similar, and the Salisbury Note was considered to be exchanged for the Nikko Note.

Nikko Note: In December 2016, in connection with the Company's formation of its cosmetics joint venture (the Aprinnova JV) with Nikko Chemicals Co., Ltd. (Nikko), as discussed in Note 7, "Variable-interest Entities and Unconsolidated Investments," Nikko made a loan to the Company in the principal amount of $3.9 million and the Company issued a promissory note (the Nikko Note) to Nikko in an equal principal amount. The proceeds of the Nikko Note were used to satisfy the Company's remaining liabilities related to the Company's purchase of the Glycotech Assets, including liabilities under the Salisbury Note. The Nikko Note (i) bears interest at 5% per year, (ii) has a term of 13 years, (iii) is payable in equal monthly installments of principal and interest beginning on January 1, 2017 and (iv) is secured by a first-priority lien on 10% of the Aprinnova JV interests owned by the Company. In addition, (i) the Company repaid $400,000 of the Nikko Note in equal monthly installments of $100,000 as required on January 1, 2017, February 1, 2017, March 1, 2017 and April 1, 2017 and (ii) the Company is required to repay the Nikko Note with any profits distributed to the Company by the Aprinnova JV, beginning with the distributions for the fourth fiscal year of the Aprinnova JV, until the Nikko Note is fully repaid. The Nikko Note may be prepaid in full or in part at any time without penalty or premium. The Nikko Note contains customary terms and provisions, including certain events of default after which the Nikko Note may become due and payable immediately.

Aprinnova Working Capital Loans: In February 2017, in connection with the formation of the Aprinnova JV, Nikko made a working capital loan to the Aprinnova JV in the principal amount of $1.5 million and received a promissory note from the Aprinnova JV in an equal amount (the First Aprinnova Note). The First Aprinnova Note was repayable in $375,000 installments plus accrued interest on May 1, 2017, August 1, 2017, November 1, 2017 and February 1, 2018. The First Aprinnova Note was fully repaid in February 2018. In August 2017, Nikko made a second working capital loan to the Aprinnova JV in the principal amount of $1.5 million and received a promissory note from the Aprinnova JV in an equal amount (the Second Aprinnova Note). The Second Aprinnova Note is payable in full on July 31, 2018, with interest payable quarterly. Both notes bear interest at 2.75% per annum.

Guanfu Credit Facility

In October 2016, the Company and Guanfu Holding Co., Ltd. (Guanfu), an existing commercial partner of the Company, entered into a credit agreement to make available to the Company an unsecured credit facility (the Guanfu Credit Facility) in an aggregate principal amount of up to $25.0 million; in connection therewith, the Company granted to Guanfu the global exclusive purchase right with respect to a certain Company product. On December 31, 2016, the Company borrowed the full amount under the Guanfu Credit Facility and issued to Guanfu a note in the principal amount of $25.0 million (the Guanfu Note). The Guanfu Note had a term of five years and accrued interest at 10% per annum, payable quarterly beginning March 31, 2017. In December 2017, the Company repaid the Guanfu Note in full with the proceeds of the DSM Note (as defined below).

Other Credit Facilities

FINEP Credit Facility: In November 2010, the Company entered into a credit facility with Financiadora de Estudos e Projetos (FINEP Credit Facility). The FINEP Credit Facility was extended to partially fund expenses related to the Company's research and development project on sugarcane-based biodiesel and provided for loans of up to an aggregate principal amount of R$6.4 million (U.S. $1.9 million based on the exchange rate as of December 31, 2017). Loaned amounts bore interest at 5% per annum. The Company borrowed R$6.4 million against the credit facility. As of December 31, 2017, the outstanding balance was zero.

BNDES Credit Facility: In December 2011, the Company entered into a credit facility with the Brazilian Development Bank (BNDES Credit Facility) in the amount of R$22.4 million (U.S.6.8 million based on the exchange rate as of December 31, 2017). The BNDES Credit Facility was extended as project financing for a production site in Brazil. Loaned amounts bore interest at 7% per annum. The Company borrowed R$19.1 million against the credit facility and paid the final installment in December 2017.

Related Party Loans Payable

DSM Note

In December 2017, the Company and DSM entered into a credit agreement (the DSM Credit Agreement) to make available to the Company an unsecured credit facility of $25.0 million. On December 28, 2017, the Company borrowed $25.0 million under the DSM Credit Agreement, representing the entire amount available thereunder, and

issued a promissory note to DSM in an equal principal amount (the DSM Note). The Company used the proceeds of the amounts borrowed under the DSM Credit Agreement to repay all outstanding principal under the Guanfu Note. Due to the multiple-element arrangement entered into with DSM, the Company fair valued the DSM Note to determine the arrangement consideration that should be allocated to the DSM Note. The fair value of the DSM Note was discounted using a Company specific weighted average cost of capital rate that resulted in a debt discount of $8.0 million. The debt discount will be amortized over the loan term.

The DSM Note (i) is an unsecured obligation of the Company, (ii) matures on December 31, 2021 and (iii) accrues interest from and including December 28, 2017 at 10% per annum, payable quarterly beginning on December 31, 2017. The DSM Note may be prepaid in full or in part at any time without penalty or premium. In addition, the Company is required to use certain payments received by the Company from DSM under the Value Sharing Agreement (see Note 10, “Significant Revenue Agreements”) to repay amounts outstanding under the DSM Credit Agreement. The DSM Credit Agreement and the DSM Note contain customary terms, covenants and restrictions, including certain events of default after which the DSM Note may become due and payable immediately.

February 2016 Private Placement

In February 2016, the Company issued and sold $20.0 million in aggregate principal amount of promissory notes (the February 2016 Notes), as well as warrants to purchase an aggregate of 190,477 shares of the Company's common stock, exercisable at a price of $0.15 per share as of December 31, 2017 (the February 2016 Warrants), resulting in aggregate proceeds to the Company of $20.0 million, in a private placement to certain existing stockholders of the Company that are affiliated with members of the Company's Board of Directors (the Board): Foris Ventures, LLC (Foris, an entity affiliated with director John Doerr of Kleiner Perkins Caufield & Byers, a current stockholder), which purchased $16.0 million aggregate principal amount of the February 2016 Notes and warrants to purchase 152,381 shares of the Company's common stock; Naxyris S.A. (Naxyris, an investment vehicle owned by Naxos Capital Partners SCA Sicar; director Carole Piwnica is Director of NAXOS UK, which is affiliated with Naxos Capital Partners SCA Sicar, and was designated as a director of the Company by Naxyris), which purchased $2.0 million aggregate principal amount of the February 2016 Notes and warrants to purchase 19,048 shares of the Company's common stock; and Biolding Investment SA (Biolding, a fund affiliated with director HH Sheikh Abdullah bin Khalifa Al Thani, who was designated as a director of the Company by Biolding), which purchased $2.0 million aggregate principal amount of the February 2016 Notes and warrants to purchase 19,048 shares of the Company's common stock.

The February 2016 Notes bear interest at 13.50% per annum and had an initial maturity date of May 15, 2017. In May 2017, the February 2016 Notes purchased by Foris and Naxyris were exchanged for shares of the Company's Series B 17.38% Convertible Preferred Stock and warrants to purchase common stock; see Note 6, "Stockholders' Deficit".

In May 2017, the Company and Biolding amended the February 2016 Note issued to Biolding (the Biolding Note) to extend the maturity of the Biolding Note to November 15, 2017, and on November 13, 2017, the Company and Biolding further amended the Biolding Note to extend maturity to December 31, 2017. The Company paid the Biolding Note in full on January 2, 2018.

The February 2016 Warrants each have five-year terms. The February 2016 Warrants purchased by Naxyris were fully exercised in the year ended December 31, 2017, and a gain of $0.1 million was recorded in earnings. As of December 31, 2017, none of the February 2016 Warrants purchased by Foris or Biolding have been exercised.

June and October 2016 Private Placements

In June and October 2016, the Company issued and sold secured promissory notes to Foris in an aggregate principal amount of $11.0 million (the Foris Notes) in private placements. The Foris Notes bore interest at 13.50% per annum and had a maturity date of May 15, 2017. In May 2017, the Foris Notes were exchanged for shares of the Company's Series B 17.38% Convertible Preferred Stock and warrants to purchase common stock (see Note 6, "Stockholders' Deficit"), and the security interests relating thereto were terminated. The debt exchange for shares did not result in a gain or loss, as the transaction was with a related party.

Letters of Credit

In June 2012, the Company entered into a letter of credit agreement for $1.0 million under which it provided a letter of credit to the landlord for its headquarters in Emeryville, California in order to cover the security deposit on the lease. This letter of credit is secured by a certificate of deposit. Accordingly, the Company has $1.0 million of restricted cash, noncurrent in connection with this arrangement as of December 31, 2017 and 2016.

5. Mezzanine Equity

Mezzanine equity at December 31, 2017 and 2016 is comprised of proceeds from common shares sold on May 10, 2016 to the Bill & Melinda Gates Foundation (the Gates Foundation). On April 8, 2016, the Company entered into a Securities Purchase Agreement with the Gates Foundation, pursuant to which the Company agreed to sell and issue 292,398 shares of its common stock to the Gates Foundation in a private placement at a purchase price per share of $17.10, the average of the daily closing price per share of the Company's common stock on the NASDAQ Stock Market for the twenty consecutive trading days ending on April 7, 2016, for aggregate proceeds to the Company of approximately $5.0 million (the Gates Foundation Investment). The Securities Purchase Agreement includes customary representations, warranties and covenants of the parties.

In connection with the entry into the Securities Purchase Agreement, on April 8, 2016, the Company and the Gates Foundation entered into a Charitable Purposes Letter Agreement, pursuant to which the Company agreed to expend an aggregate amount not less than the amount of the Gates Foundation Investment to develop a yeast strain that produces artemisinic acid and/or amorphadiene at a low cost and to supply such artemisinic acid and amorphadiene to companies qualified to convert artemisinic acid and amorphadiene to artemisinin for inclusion in artemisinin combination therapies used to treat malaria commencing in 2017. The Company is currently conducting the project. If the Company defaults in its obligation to use the proceeds from the Gates Foundation Investment as set forth above or defaults under certain other commitments in the Charitable Purposes Letter Agreement, the Gates Foundation will have the right to request that the Company redeem, or facilitate the purchase by a third party of, the Gates Foundation Investment shares then held by the Gates Foundation at a price per share equal to the greater of (i) the closing price of the Company's common stock on the trading day prior to the redemption or purchase, as applicable, or (ii) an amount equal to $17.10 plus a compounded annual return of 10%.

6. Stockholders' Deficit

May 2017 Offerings

In May 2017, the Company issued and sold an aggregate of 22,140 shares of Series A Preferred Stock, 70,904 shares of Series B Preferred Stock, and warrants to purchase an aggregate of 7,384,190 shares of common stock at an exercise price of $7.80 per share, warrants to purchase an aggregate of 7,384,190 shares of common stock at an exercise price of $9.30 per share, and warrants to purchase a number of shares of common stock sufficient to provide full-ratchet anti-dilution protection with respect to the effective price paid for the common stock underlying the Series A Preferred Stock and Series B Preferred Stock (collectively, the May 2017 Warrants) in separate offerings, certain of which were registered under the Securities Act or others of which were private placements (collectively, the May 2017 Offerings).

The net proceeds to the Company from the May 2017 Offerings were $50.7 million after payment of offering expenses and placement agent fees. The Series A Preferred Stock and May 2017 Warrants relating thereto were sold to the purchasers thereof in exchange for aggregate cash consideration of $22.1 million, and the Series B Preferred Stock and May 2017 Warrants relating thereto were sold to the purchasers thereof in exchange for (i) aggregate cash consideration of $30.7 million and (ii) the cancellation of $40.2 million of outstanding indebtedness (including accrued interest thereon) owed by the Company to certain purchasers, of which $33.1 million was from related parties, as further described below.

Series A Preferred Stock

Each share of Series A Preferred Stock has a stated value of $1,000 and is convertible at any time, at the option of the holder, into common stock at a conversion price of $17.25 per share (the Preferred Stock Conversion Rate). The Preferred Stock Conversion Rate is subject to adjustment in the event of any dividends or distributions of common stock, or any stock split, reverse stock split, recapitalization, reorganization or similar transaction. If not previously converted at the option of the holder, each share of Series A Preferred Stock automatically converted on October 9, 2017, the 90th day following the date that the Company announced that Stockholder Approval was obtained and effected, subject to the May 2017 Offerings Beneficial Ownership Limitation (as defined below).

Dividends, at a rate per year equal to 17.38% of the stated value of the Series A Preferred Stock, will be payable semiannually from the issuance of the Series A Preferred Stock until the tenth anniversary of the date of issuance, on each October 15 and April 15, beginning October 15, 2017, on a cumulative basis, at the Company's option, in cash, out of any funds legally available for the payment of dividends, or, subject to the satisfaction of certain conditions, in

Common Stock at the Preferred Stock Conversion Rate, or a combination thereof. In addition, upon the conversion of the Series A Preferred Stock prior to the tenth anniversary of the date of issuance, the holders of the Series Preferred A Stock shall be entitled to a payment equal to $1,738 per $1,000 of stated value of the Series A Preferred Stock, less the amount of all prior semiannual dividends paid on such converted Series A Preferred Stock prior to the relevant conversion date (the Make-Whole Payment), at the Company's option, in cash, out of any funds legally available for the payment of dividends, or, subject to the satisfaction of certain conditions, in common stock at the Preferred Stock Conversion Rate, or a combination thereof. If the Company elects to pay any dividend in the form of cash, it shall provide each holder with notice of such election not later than the first day of the month of prior to the applicable dividend payment date.

Unless and until converted into common stock in accordance with its terms, the Series A Preferred Stock has no voting rights, other than as required by law or with respect to matters specifically affecting the Series A Preferred Stock.

Upon any liquidation, dissolution or winding-up of the Company, the holders of the Series A Preferred Stock shall be entitled to receive out of the assets of the Company the same amount that a holder of Common Stock would receive if the Series A Preferred Stock were fully converted to common stock immediately prior to such liquidation, dissolution or winding-up (without regard to whether such Series A Preferred Stock is convertible at such time), which amount shall be paid *pari passu* with all holders of Common Stock.

The conversion of the Series A Preferred Stock is subject to a beneficial ownership limitation of 4.99% (or such other percentage not to exceed 9.99%, provided that any increase will not be effective until 61 days after notice thereof by the holder) of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon conversion of such Series A Preferred Stock (the May 2017 Offerings Beneficial Ownership Limitation). In addition, prior to obtaining the July 2017 Stockholder Approval (as defined below), the aggregate number of shares issued with respect to the Series A Preferred Stock (and any other transaction aggregated for such purpose) could not exceed 3,792,778 shares of common stock (the May 2017 Exchange Cap).

The Series A Preferred Stock is classified as permanent equity, as the Company controls all actions or events required to settle the optional and mandatory conversion feature in shares. The Make-Whole Payment was determined to be an embedded derivative requiring bifurcation and separate recognition as a derivative liability recognized at its fair value as of the issuance date with subsequent changes in fair value recorded in earnings until the Series A Preferred Stock is converted into common stock and the Make-Whole Payment is paid or until the Make-Whole Payment is paid through declared dividends or cash. A derivative liability was recognized at fair value on the date of issuance for the Make-Whole Payment in the amount of $11.0 million. The Series A Preferred Stock also contains a beneficial conversion feature which was recognized up to the amount of $0.6 million of proceeds allocated to the preferred stock. Net proceeds allocated to the Series A Preferred Stock were $0.

As of December 31, 2017, 22,140 shares of Series A Preferred Stock have been converted into common stock (with the Make-Whole Payment in each case being made in the form of common stock) and zero shares of Series A Preferred Stock were outstanding. For the year ended December 31, 2017, the Company recognized a gain of $10.5 million for the reduction in fair value of the derivative liabilities in connection with the 22,140 shares of Series A Preferred Stock converted into common stock.

Series B Preferred Stock

The Series B Preferred Stock has substantially identical terms to the Series A Preferred Stock, except that (i) the conversion of the Series B Preferred Stock was subject to the July 2017 Stockholder Approval and (ii) the May 2017 Offerings Beneficial Ownership Limitation does not apply to DSM. The Series B Preferred Stock is classified as permanent equity at December 31, 2017, which is a change from the mezzanine classification at June 30, 2017. As described in more detail below under “July 2017 Stockholder Approval,” in July 2017 the Company’s stockholders approved removing a restriction preventing the Series B Preferred Stock issued in the May 2017 Offerings from being convertible into common stock. As a result of the July 2017 Stockholder Approval, the Company now controls all actions or events required to settle an optional or mandatory conversion feature in shares and has reclassified $12.8 million from mezzanine to permanent equity.

The investors that purchased shares of the Series B Preferred Stock included related parties affiliated with members of the Board: Foris exchanged an aggregate principal amount of $27.0 million of indebtedness, plus accrued interest thereon, for 30,729 shares of Series B Preferred Stock and May 2017 Warrants to purchase 4,877,386 shares of Common Stock and Naxyris exchanged an aggregate principal amount of $2.0 million of indebtedness, plus accrued interest thereon, for 2,333 shares of Series B Preferred Stock and May 2017 Warrants to purchase 370,404 shares of common stock. The fair value of the Series B Preferred Stock, embedded make whole payment and related warrants exceeded the carrying value of the related party debt and accrued interest exchanged by $8.6 million which was recorded as a reduction to Additional Paid in Capital and considered a deemed dividend, increasing net loss attributable to Amyris, Inc. common stockholders.

The investors that purchased shares of the Series B Preferred Stock also included non-related party holders of the Company's 2014 144A Notes and 2015 144A Notes. These investors exchanged all or a portion of their holding of such indebtedness, including accrued interest thereon, representing an aggregate of $3.4 million of 2014 144A Notes and $3.7 million of 2015 144A Notes, for Series B Preferred Stock and May 2017 Warrants in the May 2017 Offerings. The fair value of the Series B Preferred Stock, embedded make whole payment and related warrants exceeded the carrying value of the debt and accrued interest exchanged by $1.9 million, which was recognized as a loss on extinguishment of debt in other income (expense).

Upon the closing of the May 2017 Offerings, all of such exchanged indebtedness was canceled and the agreements relating thereto, including any note purchase agreements or unsecured or secured promissory notes (including any security interest relating thereto), were terminated, except to the extent such investors or other investors retain a portion of such indebtedness.

The Series B Preferred Stock issued to DSM in the May 2017 Offerings contains a contingent beneficial conversion feature that was recognized in the three months ending September 30, 2017 upon the July 2017 Stockholder Approval, which eliminated the contingency. As a result, $0.6 million was recorded as a reduction to Additional Paid in Capital and was considered a deemed dividend, increasing net loss attributable to Amyris, Inc. common stockholders. The conversion feature (the right to negotiate the Second Tranche Funding Option) is not a separate unit of account requiring bifurcation.

As of December 31, 2017, 86,691 shares of Series B Preferred Stock (including the Series B Preferred Stock issued in the August 2017 DSM Offering) had been converted into common stock (with the Make-Whole Payment in each case being made in the form of common stock) and 9,213 shares of Series B Preferred Stock were outstanding. A derivative liability was recognized at fair value on the date of issuance for the make whole payment in the amount of $34.7 million. Changes in the fair value of this derivative from the date of issuance through December 31, 2017 have been recorded in earnings. Issuance costs of $1.2 million were netted against the proceeds. Additional issuance costs of $0.2 million were expensed as debt extinguishment costs for debt that was exchanged in the May 2017 Offerings. For the year ended December 31, 2017, the Company recognized a gain of $26.7 million for the reduction in fair value of the derivative liabilities in connection with the 86,691 shares of Series B Preferred Stock converted into common stock.

May 2017 Warrants

The Company issued to each investor in the May 2017 Offerings warrants to purchase a number of shares of common stock equal to 100% of the shares of common stock into which such investor's shares of Series A Preferred Stock or Series B Preferred Stock were initially convertible (including shares of common stock issuable as payment of dividends or the Make-Whole Payment, assuming that all such dividends and the Make-Whole Payment are made in common stock), representing warrants to purchase 14,768,380 shares of common stock in the aggregate for all investors (collectively, the May 2017 Cash Warrants). The exercise price of the May 2017 Cash Warrants is subject to standard adjustments as well as full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the three-year period following the issuance of such warrants (the May 2017 Dilution Period) at a per share price less than the then-current exercise price of the May 2017 Cash Warrants, subject to certain exceptions. As of December 31, 2017, the exercise prices of the May 2017 Cash Warrants were $4.40 per share. As of December 31, 2017, no May 2017 Cash Warrants had been exercised.

In addition, the Company issued to each investor a warrant, with an exercise price of $0.0015 per share as of December 31, 2017 (collectively, the May 2017 Dilution Warrants), to purchase a number of shares of common stock sufficient to provide the investor with full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the May 2017 Dilution Period at a per share price less than $6.30, the effective per share price paid by the investors for the shares of common stock issuable upon conversion of their Series A Preferred Stock or Series B Preferred Stock (including shares of common stock issuable as payment of dividends or the Make-Whole Payment, assuming that all such dividends and the Make-Whole Payment are made in common stock) subject to certain exceptions. As of December 31, 2017, the May 2017 Dilution Warrants were exercisable for an aggregate of 6,377,466 shares, of which 3,103,278 were exercised, resulting in a $9.6 million reduction in the derivative liabilities.

The May 2017 Warrants each have a term of five years from the date such warrants initially became exercisable upon the receipt and effectiveness of the July 2017 Stockholder Approval. The exercise of the May 2017 Warrants (other than the May 2017 Warrants held by DSM) is subject to the May 2017 Offerings Beneficial Ownership Limitation. The May 2017 Cash Warrants are freestanding financial instruments that are accounted for as derivative liabilities and recognized at their fair value on the date of issuance of $39.5 million. As of December 31, 2017, the fair value of the

May 2017 Cash Warrants was $34.1 million based on an independent third-party appraisal using Monte Carlo simulation and Black-Scholes-Merton option value approaches. For the year ended December 31, 2017, the Company recorded a gain of $5.4 million to reflect change in fair value of the May 2017 Cash Warrants. Subsequent changes to the fair value of the May 2017 Cash Warrants will continue to be recorded in earnings until the warrants are exercised or expire in July 2022.

The full-ratchet anti-dilution protection of the May 2017 Cash Warrants are also freestanding financial instruments that have been accounted for as derivative liabilities and recognized at their fair value on the date of issuance of $4.4 million. As of December 31, 2017, the fair value of the full-ratchet anti-dilution protection feature of the May 2017 Cash Warrants was $40.6 million. For the year ended December 31, 2017, the Company recorded a loss of $45.7 million to reflect change in fair value of the derivative liability. Future changes in fair value of the derivative liability will continue to be recorded in earnings until the warrants are exercised or expire in July 2022.

July 2017 Stockholder Approval

In connection with the May 2017 Offerings, the Company agreed to solicit from its stockholders (i) any approval required by the rules and regulations of the NASDAQ Stock Market, including without limitation for the issuance of common stock upon conversion of the Series A Preferred Stock in excess of the May 2017 Exchange Cap, upon conversion of the Series B Preferred Stock and upon exercise of the May 2017 Warrants (the NASDAQ Approval) and (ii) approval to effect the Reverse Stock Split (collectively, the July 2017 Stockholder Approval) at an annual or special meeting of stockholders to be held on or prior to July 10, 2017, and to use commercially reasonable efforts to secure the July 2017 Stockholder Approval. The Reverse Stock Split was approved by the Company's stockholders in May 2017 and the NASDAQ Approval was obtained on July 7, 2017.

August 2017 DSM Offering

On August 7, 2017, the Company issued and sold the following securities to DSM in a private placement (the August 2017 DSM Offering):

- 25,000 shares of Series B Preferred Stock (the August 2017 DSM Series B Preferred Stock) at a price of $1,000 per share;
- a warrant to purchase 3,968,116 shares of common stock at an exercise price of $6.30 per share expiring in five years (August 2017 DSM Cash Warrant); and
- the August 2017 DSM Dilution Warrant (as described below).

Net proceeds to the Company were $25.9 million after payment of offering expenses and the allocation of total fair value received to the elements in the arrangement.

The exercise price of the August 2017 DSM Cash Warrant is subject to standard adjustments as well as full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the three-year period following August 7, 2017 (the DSM Dilution Period) at a per share price less than the then-current exercise price of the August 2017 DSM Cash Warrant, subject to certain exceptions.

The August 2017 DSM Dilution Warrant allows DSM to purchase a number of shares of common stock sufficient to provide DSM with full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the DSM Dilution Period at a per share price less than $6.30, the effective per share price paid by DSM for the shares of common stock issuable upon conversion of its Series B Preferred Stock (including shares of common stock issuable as payment of dividends or the Make-Whole Payment (as defined below), assuming that all such dividends and the Make-Whole Payment are made in common stock), subject to certain exceptions and subject to a price floor of $0.10 per share (the Dilution Floor). The August 2017 DSM Dilution Warrant expires five years from the date it is initially exercisable.

The effectiveness of the anti-dilution adjustment provision of the August 2017 DSM Cash Warrant and the exercise of the August 2017 DSM Dilution Warrant are subject to the August 2017 Stockholder Approval (as defined below). As of December 31, 2017, the August 2017 DSM Cash Warrant had not been exercised for any shares and the August 2017 DSM Dilution Warrant was not exercisable for any shares.

In connection with the August 2017 DSM Offering, the Company also agreed that, subject to certain exceptions, it would not (i) issue any shares of common stock or securities convertible into or exercisable or exchangeable for common stock prior to October 31, 2017, (ii) effect any issuance of securities involving a variable rate transaction until May 11, 2018 or (iii) issue any shares of common stock or securities convertible into or exercisable or exchangeable for common stock at a price below the Dilution Floor without DSM's consent.

In connection with the August 2017 DSM Offering, the Company and DSM also entered into an amendment to the stockholder agreement dated May 11, 2017 (the DSM Stockholder Agreement) between the Company and DSM (the Amended and Restated DSM Stockholder Agreement). Under the DSM Stockholder Agreement, DSM was granted the right to designate one director selected by DSM, subject to certain restrictions and a minimum beneficial ownership level of 4.5%, to the Board. Furthermore, DSM has the right to purchase additional shares of capital stock of the Company in connection with a sale of equity or equity-linked securities by the Company in a capital raising transaction for cash, subject to certain exceptions, to maintain its proportionate ownership percentage in the Company. Pursuant to the DSM Stockholder Agreement, DSM agreed not to sell or transfer any of the Series B Preferred Stock or warrants purchased by DSM in the May 2017 Offerings (as defined below), or any shares of common stock issuable upon conversion or exercise thereof, other than to its affiliates, without the consent of the Company through May 2018 and to any competitor of the Company thereafter. DSM also agreed that, subject to certain exceptions, until three months after there is no DSM director on the Board, DSM will not, without the prior consent of the Board, acquire common stock or rights to acquire common stock that would result in DSM beneficially owning more than 33% of the Company's outstanding voting securities at the time of acquisition. Under the DSM Stockholder Agreement, the Company agreed to use its commercially reasonable efforts to register, via one or more registration statements filed with the Securities and Exchange Commission (the SEC) under the Securities Act of 1933, as amended (the Securities Act), the shares of common stock issuable upon conversion or exercise of the securities purchased by DSM in the May 2017 Offerings. The Amended and Restated DSM Stockholder Agreement provides that (i) DSM has the right to designate a second director to the Board, subject to certain restrictions and a minimum beneficial ownership level of 10%, and (ii) the shares of common stock issuable upon conversion or exercise of the securities purchased by DSM in the August 2017 DSM Offering are (a) entitled to the registration rights provided for in the DSM Stockholder Agreement and (b) subject to the transfer restrictions set forth in the DSM Stockholder Agreement.

In addition, pursuant to the Amended and Restated DSM Stockholder Agreement, the Company and DSM agreed to negotiate in good faith regarding an agreement concerning the development of certain products in the Health and Nutrition field and, in the event that the parties did not reach such agreement prior to 90 days after the closing of the August 2017 DSM Offering (the August 2017 DSM Closing), (a) certain exclusive negotiating rights granted to DSM in connection with the entry into the DSM Stockholder Agreement would expire and (b) on the first anniversary of the August 2017 DSM Closing and each subsequent anniversary thereof, the Company would make a $5.0 million cash payment to DSM, provided that the aggregate amount of such payments would not exceed $25.0 million. In September 2017, the Company and DSM entered into such agreement, and in connection therewith an intellectual property escrow agreement relating to certain intellectual property licenses granted by the Company to DSM upon the August 2017 DSM Closing became effective.

In connection with the August 2017 DSM Offering and its $25.9 million in net proceeds, the Company also entered into a separate intellectual property license with DSM for consideration of $9.0 million in cash, which DSM remitted to the Company on October 28, 2017, and a credit letter (the DSM Credit Letter) to be applied against future collaboration and value share payments owed by DSM to the Company beginning in 2018. The DSM Credit Letter had a fair value of $7.1 million and was recorded as deferred revenue on the transaction date. The total fixed consideration of $34.0 million was allocated to each of the August 2017 DSM Series B Preferred Stock, Make Whole Payment, August 2017 DSM Cash Warrant, August 2017 DSM Dilution Warrant and DSM Credit Letter at fair value based on level 3 inputs. The August 2017 DSM Series B Preferred Stock was recognized at its fair value on the date of issuance of $5.5 million, net of issuance costs of $0.2 million. The Make-Whole Payment is an embedded derivative and was initially recognized at its fair value of $9.9 million. The August 2017 DSM Cash Warrant and August 2017 DSM Dilution Warrant are freestanding financial instruments and have been recognized at their fair value of $10.6 million. The Make Whole Payment, August 2017 DSM Cash Warrant and August 2017 DSM Dilution Warrant have been reported together as derivative liabilities. Changes in the fair value and extinguishments of these derivatives from the date of issuance through December 31, 2017 have been recorded in earnings, with a $2.4 million gain recorded for the year ended December 31, 2017. As of December 31, all of the preferred shares have been converted into common stock, and no preferred shares under the August 2017 DSM Offering remained outstanding. None of the August 2017 DSM Cash warrant or August 2017 DSM Dilution Warrant have been exercised as of December 31, 2017. The Make Whole Payment compound embedded derivative’s value was reduced to zero at December 31, 2017 due to the conversion of the preferred shares into common. A gain of $9.9 million was recognized in earnings resulting from the Make Whole Payment.

The DSM Credit Letter was reported as deferred revenue and its fair value was determined based on the assumptions that DSM would realize its credit over the next 18 months to 4 years with a 50% to 90% likelihood the credit will be utilized, fully discounted at the Company's 8.6% average cost of debt. After allocating the $34.0 million in fixed consideration to the financial instruments noted above and the DSM Credit Letter, $0.7 million was available for recognition as revenue related to the intellectual property licenses delivered to DSM during the year ended December 31, 2017. The DSM Credit Letter was terminated in December 2017, resulting in the reversal of a $7.3 million liability previously recorded as consideration for the DSM License and Collaboration transaction; see Note 10, “Significant Revenue Agreements” for further details.

August 2017 Vivo Offering

On August 3, 2017, the Company issued and sold the following securities to affiliates of Vivo Capital (collectively, Vivo) in a private placement (the August 2017 Vivo Offering):

- 2,826,711 shares of common stock at a price of $4.26 per share;
- 12,958 shares of Series D Preferred Stock at a price of $1,000 per share;
- warrants to purchase an aggregate of 5,575,118 shares of common stock at an exercise price of $6.39 per share, expiring in five years (the August 2017 Vivo Cash Warrants); and
- the August 2017 Vivo Dilution Warrants (as described below).

Net proceeds to the Company were $24.8 million after payment of offering expenses.

Each share of Series D Preferred Stock has a stated value of $1,000 and, subject to the August 2017 Vivo Offering Beneficial Ownership Limitation (as defined below), is convertible at any time, at the option of the holders, into common stock at a conversion price of $4.26 per share. The Series D Conversion Rate is subject to adjustment in the event of any dividends or distributions of the common stock, or any stock split, reverse stock split, recapitalization, reorganization or similar transaction.

The conversion of the Series D Preferred Stock is subject to a beneficial ownership limitation of 9.99% (the August 2017 Vivo Offering Beneficial Ownership Limitation), which limitation may be waived by the holders on 61 days' prior notice.

Prior to declaring any dividend or other distribution of its assets to holders of common stock, the Company shall first declare a dividend per share on the Series D Preferred Stock equal to $0.0001 per share. In addition, the Series D Preferred Stock will be entitled to participate with the common stock on an as-converted basis with respect to any dividends or other distributions to holders of common stock. There were no conversions or dividends declared as of December 31, 2017.

Unless and until converted into common stock in accordance with its terms, the Series D Preferred Stock has no voting rights, other than as required by law or with respect to matters specifically affecting the Series D Preferred Stock. The Series D Preferred Stock is classified as permanent equity, as the Company controls all actions or events required to settle the optional conversion feature in shares.

The August 2017 Vivo Cash Warrants and August 2017 Vivo Dilution Warrants are freestanding derivative instruments in connection with the issuance of equity instruments, which have been recorded as derivative liabilities. These warrants have been recognized at their fair value of $13.0 million as determined by management with the assistance of an independent third party appraisal based on level 3 inputs. Changes in the fair value of these derivative liabilities from the date of issuance through December 31, 2017 have been recorded in earnings, with a $3.1 million loss recorded for the year ended December 31, 2017. The remaining $12.0 million in proceeds received was allocated on a relative fair value basis, resulting in $5.5 million of proceeds being allocated to the common stock sold in the August 2017 Vivo Offering and $6.2 million allocated to the Series D Preferred Stock, net of $0.2 million in issuance costs. The Series D Preferred Stock includes a beneficial conversion feature of $5.8 million as the full fair value of the Series D Preferred Stock of $12.0 million was greater than the $6.2 million allocated to the Series D Preferred Stock.

In the event of a Fundamental Transaction, the holders of the Series D Preferred Stock will have the right to receive the consideration receivable as a result of such Fundamental Transaction by a holder of the number of shares of common stock for which the Series D Preferred Stock is convertible immediately prior to such Fundamental Transaction (without regard to whether such Series D Preferred Stock is convertible at such time), which amount shall be paid *pari passu* with all holders of common stock. A Fundamental Transaction is defined in the Certificate of Designation of Preferences, Rights and Limitations relating to the Series D Preferred Stock as any of the following: (i) merger with or consolidation into another legal entity; (ii) sale, lease, license, assignment, transfer or other disposition of all or substantially all of the Company’s assets in one or a series of related transactions; (iii) purchase offer, tender offer or exchange offer of the Company’s common stock pursuant to which holders of the Company’s common stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding common stock; (iv) reclassification, reorganization or recapitalization of the Company’s stock; or (v) stock or share purchase agreement that results in another party acquiring more than 50% of the Company’s outstanding shares of common stock.

Upon any liquidation, dissolution or winding-up of the Company, the holders of the Series D Preferred Stock shall be entitled to receive out of the assets of the Company the same amount that a holder of common stock would receive if the Series D Preferred Stock were fully converted to common stock immediately prior to such liquidation, dissolution

or winding-up (without regard to whether such Series D Preferred Stock is convertible at such time), which amount shall be paid *pari passu* with all holders of common stock.

The exercise price of the August 2017 Vivo Cash Warrants is subject to standard adjustments as well as full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the three-year period following August 3, 2017 (the Vivo Dilution Period) at a per share price less than the then-current exercise price of the August 2017 Vivo Cash Warrants, subject to certain exceptions.

The August 2017 Vivo Dilution Warrants allow Vivo to purchase a number of shares of common stock sufficient to provide Vivo with full-ratchet anti-dilution protection for any issuance by the Company of equity or equity-linked securities during the Vivo Dilution Period at a per share price less than $4.26, the effective per share price paid by Vivo for the shares of common stock issuable upon conversion of the Series D Preferred Stock, subject to certain exceptions and subject to the Dilution Floor. The August 2017 Vivo Dilution Warrants expire five years from the date they are initially exercisable.

The effectiveness of the anti-dilution adjustment provision of the August 2017 Vivo Cash Warrants and the exercise of the August 2017 Vivo Dilution Warrants were subject to the August 2017 Stockholder Approval (as defined below). As of December 31, 2017, none of the August 2017 Vivo Cash Warrants had been exercised and the August 2017 Vivo Dilution Warrants were not exercisable for any shares.

In connection with the August 2017 Vivo Offering, the Company agreed that it would not issue any shares of common stock or securities convertible into or exercisable or exchangeable for common stock at a price below the Dilution Floor without Vivo's consent.

In connection with the August 2017 Vivo Offering, the Company and Vivo also entered into a Stockholder Agreement (the Vivo Stockholder Agreement) setting forth certain rights and obligations of Vivo and the Company. Pursuant to the Vivo Stockholder Agreement, Vivo will have the right, subject to certain restrictions and a minimum beneficial ownership level of 4.5%, to (i) designate one director selected by Vivo to the Board and (ii) appoint a representative to attend all Board meetings in a nonvoting observer capacity and to receive copies of all materials provided to directors, subject to certain exceptions. Furthermore, Vivo will have the right to purchase additional shares of capital stock of the Company in connection with a sale of equity or equity-linked securities by the Company in a capital raising transaction for cash, subject to certain exceptions, to maintain its proportionate ownership percentage in the Company. Vivo agreed not to sell or transfer any of the shares of common stock, Series D Preferred Stock or warrants purchased by Vivo in the August 2017 Vivo Offering, or any shares of common stock issuable upon conversion or exercise thereof, other than to its affiliates, without the consent of the Company through August 2018 and to any competitor of the Company thereafter. Vivo also agreed that, subject to certain exceptions, until the later of (i) three years from the closing of the August 2017 Vivo Offering and (ii) three months after there is no Vivo director on the Board, Vivo will not, without the prior consent of the Board, acquire common stock or rights to acquire common stock that would result in Vivo beneficially owning more than 33% of the Company’s outstanding voting securities at the time of acquisition. Under the Vivo Stockholder Agreement, the Company agreed to use its commercially reasonable efforts to register, via one or more registration statements filed with the SEC under the Securities Act, the shares of common stock purchased in the August 2017 Vivo Offering as well as the shares of common stock issuable upon conversion or exercise of the Series D Preferred Stock and warrants purchased by Vivo in the August 2017 Vivo Offering.

August 2017 Stockholder Approval

The Company has agreed to solicit from its stockholders such approval as may be required by the applicable rules and regulations of the NASDAQ Stock Market with respect to the anti-dilution provisions of the August 2017 DSM Cash Warrant and the August 2017 Vivo Cash Warrants and the exercise of the August 2017 DSM Dilution Warrant and the August 2017 Vivo Dilution Warrants (the August 2017 Stockholder Approval) at an annual or special meeting of stockholders to be held on or prior to the date of the Company’s 2018 annual meeting of stockholders (the Stockholder Meeting), and to use commercially reasonable efforts to secure the August 2017 Stockholder Approval. DSM and Vivo may, at their option, upon at least 90 days’ prior written notice, require the Company to hold the Stockholder Meeting prior to the Company’s 2018 annual meeting of stockholders. If the Company does not obtain the August 2017 Stockholder Approval at the Stockholder Meeting, the Company will call a stockholder meeting every four months thereafter to seek the August 2017 Stockholder Approval until the earlier of the date the August 2017 Stockholder Approval is obtained or the August 2017 DSM Cash Warrant, the August 2017 Vivo Cash Warrants, the August 2017 Vivo Dilution Warrants and the August 2017 DSM Dilution Warrant are no longer outstanding. In addition, until the August 2017 Stockholder Approval has been obtained and deemed effective, the Company may not issue any shares of common stock or securities convertible into or exercisable or exchangeable for common stock if such issuance would have triggered the anti-dilution adjustment provisions in the August 2017 DSM Cash Warrant,

the August 2017 DSM Dilution Warrant, the August 2017 Vivo Cash Warrants or the August 2017 Vivo Dilution Warrants (if the August 2017 Stockholder Approval had been obtained prior to such issuance) without the prior written consent of DSM and Vivo, respectively.

Warrants in Connection with May and August 2017 Offerings

Warrant activity and balances in connection with the May and August 2017 Offerings are as follows:

	Issued	Exercised	Warrants Outstanding at 12/31/2017
May and August 2017 Cash Warrants			
May 2017	14,768,380	—	14,768,380
August 2017	9,543,234	—	9,543,234
	24,311,614	—	24,311,614
May and August 2017 Dilution Warrants			
May 2017	6,377,466	(3,103,278)	3,274,188
August 2017	—	—	—
	6,377,466	(3,103,278)	3,274,188
	30,689,080	(3,103,278)	27,585,802

May 2017 Exchange of Common Stock for Series C Convertible Preferred Stock

In May 2017, Foris and Naxyris agreed to exchange (the May 2017 Exchange) their outstanding shares of common stock, representing a total of 1,394,706 shares, for 20,921 shares of the Company's Series C Convertible Preferred Stock, par value $0.0001 per share (the Series C Preferred Stock) in a private exchange. In addition, Foris and Naxyris agreed not to convert any of their outstanding convertible promissory notes, warrants or any other equity-linked securities of the Company until the July 2017 Stockholder Approval had been obtained.

Each share of Series C Preferred Stock has a stated value of $1,000 and would automatically convert into common stock, at a conversion price of $15.00 per share (the Series C Conversion Rate), upon the approval by the Company's stockholders and implementation of a reverse stock split.

The Series C Preferred Stock is entitled to participate with the common stock on an as-converted basis with respect to any dividends or other distributions to holders of common stock.

The Series C Preferred Stock shall vote together as one class with the common stock on an as-converted basis, and shall also vote with respect to matters specifically affecting the Series C Preferred Stock.

Upon any liquidation, dissolution or winding-up of the Company, the holders of the Series C Preferred stock shall be entitled to receive out of the assets of the Company an amount equal to the greater of (i) the par value of each share of Series C Preferred Stock, plus any accrued and unpaid dividends or other amounts due on such Series C Preferred Stock, prior to any distribution or payment to the holders of common stock or (ii) the amount that a holder would receive if the Series C Preferred Stock were fully converted to common stock immediately prior to such liquidation, dissolution or winding-up (without regard to whether such Series C Preferred Stock is convertible at such time), which amount shall be paid *pari passu* with all holders of Common Stock.

The shares of Series C Preferred Stock automatically converted to common stock on June 6, 2017 in connection with the effectiveness of the Reverse Stock Split. The Company accounted for the Series C Preferred Stock and the May 2017 Exchange as a non-monetary transaction that had no impact on the consolidated financial statements.

Exchange Agreement Warrants

Under the 2015 Exchange Agreement, Total and Temasek received the following warrants at the closing of the 2015 Exchange:

- Total received a warrant to purchase 1,261,613 shares of common stock (the Total Funding Warrant), which warrant had been fully exercised as of December 31, 2017.
- Total received a warrant to purchase 133,334 shares of the Company's common stock that would only be exercisable if the Company failed, as of March 1, 2017, to achieve a target cost per liter to manufacture farnesene (the Total R&D Warrant). As of March 1, 2017, the Company had not achieved the target cost per liter to manufacture farnesene provided in the Total R&D Warrant, and as a result, on March 1, 2017 the Total R&D Warrant became exercisable in accordance with its terms. As of December 31, 2017, the Total R&D Warrant had not been exercised.
- Temasek received a warrant to purchase 978,525 shares of common stock, which warrant had been fully exercised as of December 31, 2017.
- Temasek received a warrant exercisable for that number of shares of common stock equal to 58,690 multiplied by a fraction equal to the number of shares for which Total exercises the Total R&D Warrant divided by 133,334 (the Temasek R&D Warrant). As of December 31, 2017, the Temasek R&D Warrant was not exercisable for any shares of common stock.
- Temasek received a warrant exercisable for that number of shares of common stock equal to (1) (A) the sum of (i) the number of shares for which Total exercises the Total Funding Warrant plus (ii) the number of any additional shares for which the outstanding Tranche Notes may become exercisable as a result of a reduction in their conversion price as a result of and/or subsequent to the 2015 Exchange plus (iii) the number of additional shares in excess of 133,334, if any, for which the Total R&D Warrant becomes exercisable, multiplied by (B) a fraction equal to 30.6% divided by 69.4% plus (2) (A) the number of any additional shares for which the outstanding 2014 144A Notes may become exercisable as a result of a reduction in their conversion price multiplied by (B) a fraction equal to 13.3% divided by 86.7% (the Temasek Funding Warrant). As of December 31, 2017, the Temasek Funding Warrant had been exercised with respect to 846,683 shares of common stock and was exercisable for 1,889,986 shares of common stock.

The warrants issued to Total in the 2015 Exchange each have five-year terms, and the warrants issued to Temasek in the 2015 Exchange each have ten-year terms. All of such warrants have an exercise price of $0.15 per share as of December 31, 2017.

In addition to the grant of the warrants in the 2015 Exchange, a warrant to purchase 66,667 shares of common stock issued by the Company to Temasek in October 2013 in conjunction with a prior convertible debt financing became exercisable in full upon the completion of the 2015 Exchange. As of December 31, 2017 and 2016, such warrant had been fully exercised.

July 2015 PIPE Warrants

In July 2015, the Company entered into a securities purchase agreement with certain purchasers, including entities affiliated with members of the Board, under which the Company agreed to sell 1,068,379 shares of common stock at a price of $23.40 per share, for aggregate proceeds to the Company of $25.0 million. The sale of common stock was completed on July 29, 2015. In connection with such sale, the Company granted to each of the purchasers a warrant, exercisable at a price of $0.15 per share as of December 31, 2017, to purchase of a number of shares of common stock equal to 10% of the shares of common stock purchased by such investor. The exercisability of the warrants was subject to stockholder approval, which was obtained on September 17, 2015. As of December 31, 2017, such warrants had been exercised with respect to 25,643 shares of common stock and warrants with respect to 81,197 shares of common stock were outstanding.

At Market Issuance Sales Agreement

On March 8, 2016, the Company entered into an At Market Issuance Sales Agreement (the ATM Sales Agreement) with FBR Capital Markets & Co. and MLV & Co. LLC (the Agents) under which the Company may issue and sell shares of its common stock having an aggregate offering price of up to $50.0 million (the ATM Shares) from time to time through the Agents, acting as its sales agents, under the Company's Registration Statement on Form S-3 (File No. 333-203216), effective April 15, 2015. Sales of the ATM Shares through the Agents, if any, will be made by any method that is deemed an "at the market offering" as defined in Rule 415 under the Securities Act, including by means of ordinary brokers' transactions at market prices, in block transactions, or as otherwise agreed by the Company and the Agents. Each time that the Company wishes to issue and sell ATM Shares under the ATM Sales Agreement, the Company will notify one of the Agents of the number of ATM Shares to be issued, the dates on which such sales are anticipated to be made, any minimum price below which sales may not be made and other sales parameters as the Company deems appropriate. The Company will pay the designated Agent a commission rate of up to 3.0% of the gross proceeds from the sale of any ATM Shares sold through such Agent as agent under the ATM Sales Agreement. The ATM Sales Agreement contains customary terms, provisions, representations and warranties. The ATM Sales Agreement includes no commitment by other parties to purchase shares the Company offers for sale.

During the years ended December 31, 2017 and December 31, 2016, the Company did not sell any shares of common stock under the ATM Sales Agreement. As of December 31, 2017, $50.0 million remained available for future sales under the ATM Sales Agreement.

Evergreen Shares for 2010 Equity Incentive Plan and 2010 Employee Stock Purchase Plan

In January 2017, the Company's Board of Directors (Board) approved an increase to the number of shares available for issuance under the Company's 2010 Equity Incentive Plan (Equity Plan). These shares represent an automatic annual increase in the number of shares available for issuance under the Equity Plan of 548,214. This increase is equal to approximately 3.0% of the 18,273,921 total outstanding shares of the Company’s common stock as of December 31, 2016. This automatic increase was effective as of January 1, 2017. Shares available for issuance under the Equity Plan were initially registered on a registration statement on Form S-8 filed with the Securities and Exchange Commission on October 1, 2010 (Registration No. 333-169715). The Company filed a registration statement on Form S-8 on April 17, 2017 (Registration No. 333-217345) with respect to the shares added by the automatic increase on January 1, 2017. The Board did not approve any increase to the number of shares reserved for issuance under the Company’s 2010 Employee Stock Purchase Plan in 2017.

Right of First Investment to Certain Investors

In connection with investments in Amyris, the Company has granted certain investors, including Total and DSM, a right of first investment if the Company proposes to sell securities in certain financing transactions. With these rights, such investors may subscribe for a portion of any such new financing and require the Company to comply with certain notice periods, which could discourage other investors from participating in, or cause delays in its ability to close, such a financing. Further, in certain cases such investors have the right to pay for any securities purchased in connection with an exercise of their right of first investment by canceling all or a portion of the Company’s debt held by them. To the extent such investors exercise these rights, it will reduce the cash proceeds the Company may realize from the relevant financing.

7. Variable-interest Entities and Unconsolidated Investments

Consolidated Variable-interest Entity

Aprinnova, LLC (Aprinnova JV)

In December 2016, the Company, Nikko Chemicals Co., Ltd. an existing commercial partner of the Company, and Nippon Surfactant Industries Co., Ltd., an affiliate of Nikko (collectively, Nikko) entered into a joint venture (the Aprinnova JV Agreement) under the name Neossance, LLC, and later changed the name to Aprinnova, LLC (the Aprinnova JV). Pursuant to the Aprinnova JV agreement, the Company contributed certain assets, including certain intellectual property and other commercial assets relating to its business-to-business cosmetic ingredients business (the Aprinnova JV Business), as well as the Leland Facility described below. The Company also agreed to provide the Aprinnova JV with exclusive (to the extent not already granted to a third party), royalty-free licenses to certain of the Company's intellectual property necessary to make and sell products associated with the Aprinnova JV Business (the Aprinnova JV Products), and, in the event the Company is unable to meet its supply commitments under the Aprinnova JV Supply Agreement (as defined below), or Nikko terminates the Aprinnova JV Supply Agreement due to a material breach or default thereunder by the Company, the Company would be required to grant to the Aprinnova JV and Nikko additional non-exclusive, royalty-free licenses to certain of the Company's intellectual property rights related to the production of farnesene in connection with the manufacture, production and sale of the Aprinnova JV Products.

Nikko purchased a 50% interest in the Aprinnova JV in December 2016 in exchange for the following payments to the Company: (i) an initial payment of $10.0 million and (ii) the profits, if any, distributed to Nikko in cash as members of the Aprinnova JV during the three year period following the date of the Aprinnova JV Agreement, up to a maximum of $10.0 million.

Pursuant to the Aprinnova JV Agreement, the Company and Nikko agreed to make working capital loans to the Aprinnova JV in the amounts of $0.5 million and $1.5 million, respectively. In addition, the Company agreed to guarantee a maximum production cost for certain Aprinnova JV Products to be produced by the Aprinnova JV and to bear any cost of production above such guaranteed costs.

Under the Aprinnova JV Agreement, in the event of a merger, acquisition, sale or other similar reorganization, or a bankruptcy, dissolution, insolvency or other similar event, of the Company, on the one hand, or Nikko, on the other hand, the other member will have a right of first purchase with respect to such member’s interest in the Aprinnova JV, at the fair market value of such interest, in the case of a merger, acquisition, sale or other similar reorganization, and at

the lower of the fair market value or book value of such interest, in the case of a bankruptcy, dissolution, insolvency or other similar event.

The Aprinnova JV operates under an agreement (the Aprinnova Operating Agreement) under which the Aprinnova JV is managed by a Board of Directors that consists of four directors, two appointed by the Company and two appointed by Nikko. In addition, Nikko has the right to designate the Chief Executive Officer of the Aprinnova JV from among the directors and the Company has the right to designate the Chief Financial Officer. The Company determined that it controls the Aprinnova JV because of its significant ongoing involvement in operational decision making and its guarantee of production costs for squalane and hemisqualane. The Company has concluded that the Aprinnova JV is a variable-interest entity (VIE) under the provisions of ASC 810, *Consolidation,* and that the Company is the VIE's primary beneficiary. As a result, the Company accounts for its investment in the Aprinnova JV on a consolidation basis in accordance with ASC 810.

Under the Aprinnova Operating Agreement, profits from the operations of the Aprinnova JV, if any, are distributed as follows: (i) first, to the Company and Nikko (the Members) in proportion to their respective unreturned capital contribution balances, until each Member’s unreturned capital contribution balance equals zero and (ii) second, to the Members in proportion to their respective interests. In addition, any future capital contributions will be made by the Company and Nikko on an equal (50%/50%) basis each time, unless otherwise mutually agreed.

In connection with the contribution of the Leland Facility by the Company to the Aprinnova JV, at the closing of the formation of the Aprinnova JV, Nikko made a loan to the Company in the principal amount of $3.9 million, and the Company in consideration therefore issued a promissory note to Nikko in an equal principal amount, as described in more detail in Note 4, “Debt” under “Nikko Note.”

Purchase of North Carolina Manufacturing Facility and Transfer to Aprinnova JV

In December 2016, the Company purchased a manufacturing facility in Leland, North Carolina from which it had previously purchased production output from a contract manufacturer. The Company's purchase of the facility included the building, land and equipment (collectively, the Leland Facility). The aggregate purchase price was $4.4 million, of which $3.5 million was paid in the form of a promissory note to the sellers. The promissory note is described in more detail in Note 4, “Debt” under "Salisbury Note." In December 2016, the Company transferred the Leland Facility to the Aprinnova JV upon its formation and repaid the Salisbury Note with the proceeds of the Nikko Note.

The following presents the carrying amounts of the Aprinnova JV’s assets and liabilities included in the accompanying consolidated balance sheets. Assets presented below are restricted for settlement of the Aprinnova JV's obligations and all liabilities presented below can only be settled using the Aprinnova JV resources.

December 31, (In thousands)	2017	2016
Assets	$36,781	$30,778
Liabilities	$3,187	$333

The Aprinnova JV's assets and liabilities are primarily comprised of inventory, property, plant and equipment, accounts payable and debt, which are classified in the same categories in the Company's consolidated balance sheets.

The change in noncontrolling interest for the Aprinnova JV for the years ended December 31, 2017 and 2016 is as follows:

(In thousands)	2017	2016
Balance at January 1	$(937)	$391
Income attributable to noncontrolling interest	—	(1,328)
Balance at December 31	$(937)	$(937)

Unconsolidated Investments

Equity-method Investments

Novvi LLC (Novvi)

Novvi is a U.S.-based joint venture among the Company, Cosan US, Inc. (Cosan U.S.), American Refining Group, Inc. (ARG), Chevron U.S.A. Inc. (Chevron) and H&R Group US, Inc. (H&R). Novvi's purpose is to develop, produce and commercialize base oils, additives and lubricants derived from Biofene for use in the automotive, commercial and industrial lubricants markets.

In July 2016, ARG agreed to make an initial capital contribution of up to $10.0 million in cash to Novvi in exchange for a one third ownership stake in Novvi. In connection with such investment, the Company agreed to contribute all outstanding amounts owed by Novvi to the Company under the seven existing member senior loan agreements between the Company and Novvi, as well as certain existing receivables due from Novvi to the Company related to rent and other services performance by the Company, in exchange for receiving additional membership units in Novvi. Likewise, Cosan U.S. agreed to contribute an equal amount to Novvi as the Company in exchange for receiving an equal amount of additional membership interests in Novvi. Following the ARG investment, which was fully funded as of December 31, 2017, and the capital contributions of the Company and Cosan U.S., each of Novvi’s three members (i.e., ARG, the Company and Cosan U.S.) owned one third of Novvi’s issued and outstanding membership units and were represented by two members of Novvi’s Board of Managers.

In November 2016, Chevron made a capital contribution of $1.0 million in cash to Novvi in exchange for a 3% ownership stake in Novvi, which reduced the ownership interests of the Company, Cosan U.S. and ARG pro rata. In connection with its investment in Novvi, for so long as Chevron or its affiliates owns any membership units in Novvi, Chevron shall have the right to purchase up to such additional membership units as would result in Chevron owning the greater of (i) 25% of the aggregate membership units then outstanding held by Chevron, the Company, Cosan U.S. and ARG (including their affiliates and successors-in-interest) following such purchase and (ii) the highest percentage of such membership units held by the Company, Cosan U.S. and ARG (including their affiliates and successors-in-interest) following such purchase. In addition, Chevron was granted the right to purchase up to its pro rata share of all additional membership units that Novvi may, from time to time, propose to sell or issue.

In October 2017, H&R made a capital contribution of $10.0 million in cash to Novvi in exchange for a 24.39% ownership stake in Novvi, which reduced the ownership interests of Amyris, Cosan U.S., ARG and Chevron pro rata. As a result of such investment, as of December 31, 2017, each of Amyris, Cosan U.S., ARG and H&R owned a 24.39% equity ownership interest in Novvi, with Chevron owning the remaining 2.44%.

Additional funding requirements to finance the ongoing operations of Novvi are expected to occur through revolving credit or other loan facilities provided by unrelated parties (i.e., such as financial institutions); cash advances or other credit or loan facilities provided by Novvi’s members or their affiliates; or additional capital contributions by the existing Novvi members or new investors.

The Company has identified Novvi as a VIE and determined that the power to direct activities which most significantly impact the economic success of the joint venture (i.e., continuing research and development, marketing, sales, distribution and manufacturing of Novvi products) are shared among the Company, Cosan U.S., ARG and H&R. Accordingly, The Company accounts for its investment in Novvi under the equity method of accounting, having determined that (i) Novvi is a VIE, (ii) the Company is not Novvi's primary beneficiary, and (iii) the Company has the ability to exert significant influence over Novvi. Under the equity method, the Company's share of profits and losses and impairment charges on investments in affiliates are included in “Loss from investments in affiliates” in the consolidated statements of operations. The carrying amount of the Company's equity investment in Novvi was zero as of December 31, 2017 and 2016 as the result of cumulative equity in losses.

Total Amyris BioSolutions B.V. (TAB)

TAB is a joint venture formed in November 2013 between the Company and Total to produce and commercialize farnesene- or farnesane-based jet and diesel fuels. TAB has not carried out any commercial activity since its inception. As of December 31, 2017, the Company and Total each owned 25% and 75% of the common equity of TAB, respectively. The Company accounts for its investment in TAB under the equity method of accounting, having determined that (i) TAB is a VIE, (ii) the Company is not TAB's primary beneficiary, and (iii) the Company has the ability to exert significant influence over TAB. The carrying value of the Company's investment in TAB as of December 31, 2017 was $0.

Cost-method Investment

In April 2017, the Company received 850,115 unregistered shares of common stock of SweeGen, Inc. (SweeGen) in satisfaction of a payment obligation from Phyto Tech Corp. (d/b/a Blue California), an affiliate of SweeGen, under a revenue agreement entered into between Blue California and the Company in December 2016. The Company obtained an independent valuation of the shares that established acquisition-date fair value of $3.2 million using an income approach under which cash flows were discounted to present value at 40%.

8. Net Loss per Share Attributable to Common Stockholders

The Company computes net loss per share in accordance with ASC 260, “Earnings per Share.” Basic net loss per share of common stock is computed by dividing the Company’s net loss attributable to Amyris, Inc. common stockholders (as adjusted in 2015 to remove the impact of the fair value adjustments for any currently exercisable warrants in which the number of shares are included in the weighted average number of shares of common stock outstanding) by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per share of common stock is computed by giving effect to all potentially dilutive securities, including stock options, restricted stock units and common stock warrants, using the treasury stock method or the as converted method, as applicable. For the years ended December 31, 2017 and 2015, basic net loss per share was the same as diluted net loss per share because the inclusion of all potentially dilutive securities outstanding was anti-dilutive. As such, the numerator and the denominator used in computing both basic and diluted net loss were the same for those years.

The following table presents the calculation of basic and diluted net loss per share of common stock attributable to Amyris, Inc. common stockholders:

Years Ended December 31, **(In thousands, except shares and per share amounts)**	2017	2016	2015
Numerator:			
Net income (loss) attributable to Amyris, Inc.	$(72,329)	$(97,334)	$(217,952)
Less deemed dividend on capital distribution to related parties	(8,648)	—	—
Less deemed dividend related to beneficial conversion feature on Series A preferred stock	(562)	—	—
Less deemed dividend related to beneficial conversion feature on Series B preferred stock	(634)	—	—
Less deemed dividend related to beneficial conversion feature on Series D preferred stock	(5,757)	—	—
Less cumulative dividends on Series A and Series B preferred stock	(5,439)	—	—
Net loss attributable to Amyris, Inc. common stockholders, basic	(93,369)	(97,334)	(217,952)
Adjustment to exclude fair value gain on liability classified warrants[1]	—	—	(3,825)
Net loss attributable to Amyris, Inc. common stockholders for basic net loss per share	(93,369)	(97,334)	(221,777)
Interest on convertible debt	—	4,428	—
Accretion of debt discount	—	2,889	—
Gain from change in fair value of derivative instruments	—	(25,630)	—
Net loss attributable to Amyris, Inc. common stockholders, diluted	$(93,369)	$(115,647)	$(221,777)
Denominator:			
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock, basic	32,253,570	15,896,014	8,464,106
Basic loss per share	$(2.89)	$(6.12)	$(26.20)
Weighted-average shares of common stock outstanding	32,253,570	15,896,014	8,464,106
Effective of dilutive convertible promissory notes	—	1,746,951	—
Weighted-average common stock equivalents used in computing net loss per share of common stock, diluted	32,253,570	17,642,965	8,464,106
Diluted loss per share	$(2.89)	$(6.55)	$(26.20)

(1) The amount represents a net gain related to a change in the fair value of a liability classified common stock warrant included in the Company's consolidated statement of operations for the year ended December 31, 2015. The warrant has a nominal exercise price and shares issuable upon exercise of the warrant are considered equivalent to the Company's common shares for the purpose of computation of basic earnings per share and consequently losses are adjusted to exclude the gain. The warrant was exercised in 2015.

The following outstanding shares of potentially dilutive securities were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have been anti-dilutive:

Years Ended December 31,	2017	2016	2015
Period-end common stock warrants	29,921,844	334,740	193,462
Convertible promissory notes [1]	8,040,828	2,395,596	4,835,821
Period-end stock options to purchase common stock	1,338,367	899,179	862,008
Period-end restricted stock units	685,007	466,076	370,323
Total potentially dilutive securities excluded from computation of diluted net loss per share	39,986,046	4,095,591	6,261,614

(1) The potentially dilutive effect of convertible promissory notes was computed based on conversion ratios in effect as of December 31, 2017. A portion of the convertible promissory notes issued carries a provision for a reduction in conversion price under certain circumstances, which could potentially increase the dilutive shares outstanding. Another portion of the convertible promissory notes issued carries a provision for an increase in the conversion rate under certain circumstances, which could also potentially increase the dilutive shares outstanding.

9. Commitments and Contingencies

Lease Obligations

The Company leases certain facilities and finances certain equipment under operating and capital leases, respectively. Operating leases include leased facilities and capital leases include leased equipment (see Note 2, "Balance Sheet Details"). The Company recognizes rent expense on a straight-line basis over the noncancelable lease term and records the difference between cash rent payments and the recognition of rent expense as a deferred rent liability. Where leases contain escalation clauses, rent abatements, and/or concessions, such as rent holidays and landlord or tenant incentives or allowances, the Company applies them as straight-line rent expense over the lease term. The Company has noncancelable operating lease agreements for office, research and development, and manufacturing space that expire at various dates, with the latest expiration in February 2031. Rent expense under operating leases was $5.1 million, $5.3 million and $5.5 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Future minimum payments under the Company's lease obligations as of December 31, 2017, are as follows:

Years Ending December 31 (In thousands)	Capital Leases	Operating Leases	Total Lease Obligations
2018	$ 755	$ 10,127	$ 10,882
2019	185	8,760	8,945
2020	39	7,018	7,057
2021	—	7,242	7,242
2022	—	7,415	7,415
Thereafter	—	3,545	3,545
Total future minimum payments	979	$ 44,107	$ 45,086
Less: amount representing interest	(38)		
Present value of minimum lease payments	941		
Less: current portion	(724)		
Long-term portion	$ 217		

Sublease Arrangements

The Company subleases certain of its facilities to two of its collaboration partners. Total minimum rentals to be received in the future under noncancelable subleases as of December 31, 2017 were $0.4 million.

Guarantor Arrangements

The Company has agreements whereby it indemnifies its officers and directors for certain events or occurrences while the officer or director is serving in his or her official capacity. The indemnification period remains enforceable for the officer's or director’s lifetime. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company has a director and officer insurance policy that limits its exposure and enables the Company to recover a portion of any future payments. As a result of its insurance policy coverage, the Company believes the estimated fair value of these indemnification agreements is minimal. Accordingly, the Company had no liabilities recorded for these agreements as of December 31, 2017 and 2016.

The Company entered into the FINEP Credit Facility to finance a research and development project on sugarcane-based biodiesel; see Note 4, "Debt". The FINEP Credit Facility is guaranteed by a chattel mortgage on certain equipment of the Company. The Company's total acquisition cost for the equipment under this guarantee is R$6.0 million (approximately U.S. $1.8 million based on the exchange rate as of December 31, 2017). The FINEP Credit Facility was repaid in full in January 2018.

The Company entered into the BNDES Credit Facility to finance a production site in Brazil; see Note 4, "Debt". The BNDES Credit Facility, which was extinguished in December 2017 upon the Company's final installment payment, was collateralized by a first priority security interest in certain of the Company's equipment and other tangible assets with a total acquisition cost of R$24.9 million (approximately U.S. $7.5 million based on the exchange rate as of December 31, 2017). The Company was a parent guarantor for the payment of the outstanding balance under the BNDES Credit Facility. Additionally, the Company was required to provide certain bank guarantees under the BNDES Credit Facility.

In 2012, the Company pledged certain farnesene production assets as collateral for notes payable to Nossa Caixa and Banco Pine totaling R$52.0 million (U.S. $15.7 million based on the exchange rate as of December 31, 2017); see Note 4, "Debt". At December 31, 2017, the Company was also a parent guarantor for payment of outstanding balances under the two loan agreements. In December 2017, the Company repaid the Nossa Caixa and Banco Pine notes in full in connection with the sale of Amyris Brasil to DSM (see Note 13, “Divestiture”), and in January 2018 the pledges and parent guarantees were extinguished.

The Company has a financing agreement with Banco Safra for $1.0 million for a one-year term through June 2018 to fund exports.

The Senior Secured Loan Facility (see Note 4, "Debt") is collateralized by first-priority liens on substantially all of the Company's assets, including Company intellectual property. In addition, as discussed in Note 4, "Debt", the Nikko Note is collateralized by a first-priority lien on 10% of the Aprinnova JV interests owned by the Company.

Purchase Obligations

As of December 31, 2017, the Company had $18.3 million in purchase obligations which included $9.0 million of noncancelable contractual obligations.

Production Cost Commitment

As of December 31, 2017, the Company is committed to supplying squalane and hemisqualane to the Aprinnova JV at specified cost targets. The Company is obligated to pay all product costs above a specified target, but is not obligated to supply squalane and hemisqualane at a loss, and no liability has been accrued for the Company’s commitment to supply at the specified cost target.

Other Matters

Certain conditions may exist as of the date the financial statements are issued, which may result in a loss to the Company but will only be recorded when one or more future events occur or fail to occur. The Company's management assesses such contingent liabilities, and such assessment inherently involves an exercise of judgement. In

assessing loss contingencies related to legal proceedings that are pending against and by the Company or unasserted claims that may result in such proceedings, the Company's management evaluates the perceived merits of any legal proceedings or unasserted claims as well as the perceived merits of the amount of relief sought or expected to be sought.

If the assessment of a contingency indicates that it is probable that a material loss has been incurred and the amount of the liability can be estimated, then the estimated liability would be accrued in the Company's financial statements. If the assessment indicates that a potential material loss contingency is not probable but is reasonably possible, or is probable but cannot be reasonably estimated, then the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material would be disclosed. Loss contingencies considered to be remote by management are generally not disclosed unless they involve guarantees, in which case the guarantee would be disclosed.

In April 2017, a securities class action complaint was filed against the Company and its CEO, John G. Melo, and CFO, Kathleen Valiasek, in the U.S. District Court for the Northern District of California. The complaint sought unspecified damages on behalf of a purported class that would comprise all individuals who acquired the Company's common stock between March 2, 2017 and April 17, 2017. The complaint alleged securities law violations based on statements made by the Company in its earnings press release issued on March 2, 2017 and Form 12b-25 filed with the SEC on April 3, 2017. On September 21, 2017, an Order of Dismissal was entered on the plaintiff’s notice of voluntary dismissal without prejudice.

Subsequent to the filing of the securities class action complaint described above, four separate purported shareholder derivative complaints were filed based on substantially the same facts as the securities class action complaint described above (the Derivative Complaints). The Derivative Complaints name Amyris, Inc. as a nominal defendant and name a number of the Company's current officers and directors as additional defendants. The lawsuits seek to recover, on the Company's behalf, unspecified damages purportedly sustained by the Company in connection with allegedly misleading statements and/or omissions made in connection with the Company's securities filings. The Derivative Complaints also seek a series of changes to the Company's corporate governance policies, restitution to the Company from the individual defendants, and an award of attorneys' fees. Two of the Derivative Complaints were filed in the U.S. District Court for the Northern District of California (together, the Federal Derivative Cases): Bonner v. John Melo, et al., Case No. 4:17-cv-04719, filed August 15, 2017, and Goldstein v. John Melo, et al., Case No. 3:17-cv-04927, filed on August 24, 2017. On September 19, 2017, an order was entered consolidating the Federal Derivative Cases into a single consolidated action, captioned: In re Amyris, Inc., Shareholder Derivative Litigation, Lead Case No. 2:15-cv-04719, and ordering plaintiffs to file a consolidated complaint or designate an operative complaint by November 3, 2017. On November 3, 2017, the plaintiffs in the Federal Derivative Cases filed a Notice of Designation of Operative Complaint designating the complaint filed in the Bonner case as the operative complaint. On December 21, 2017, the defendants filed a motion to dismiss the Federal Derivative Cases. By Order dated March 9, 2018, the Court granted defendants' motion to dismiss the Federal Derivative Cases, and on March 29, 2018, the plaintiffs filed an amended complaint with the Court. The remaining two Derivative Complaints were filed in the Superior Court for the State of California (the State Derivative Cases): Gutierrez v. John G. Melo, et al., Case. No. BC 665782, filed on June 20, 2017, in the Superior Court for the County of Los Angeles, and Soleimani v. John G. Melo, et al., Case No. RG 17865966, filed on June 29, 2017, in the Superior Court for the County of Alameda. On August 31, 2017, the Gutierrez case was transferred to the Superior Court for the State of California, County of Alameda and assigned case number RG17876383. These state cases are in the initial pleadings stage. We believe the Derivative Complaints lack merit, and intend to defend ourselves vigorously. Given the early stage of these proceedings, it is not yet possible to reliably determine any potential liability that could result from this matter.

The Company is subject to disputes and claims that arise or have arisen in the ordinary course of business and that have not resulted in legal proceedings or have not been fully adjudicated. Such matters that may arise in the ordinary course of business are subject to many uncertainties and outcomes are not predictable with reasonable assurance and therefore an estimate of all the reasonably possible losses cannot be determined at this time. Therefore, if one or more of these legal disputes or claims resulted in settlements or legal proceedings that were resolved against the Company for amounts in excess of management's expectations, the Company's consolidated financial statements for the relevant reporting period could be materially adversely affected.

10. Significant Revenue Agreements

For the years ended December 31, 2017, 2016 and 2015, the Company recognized revenue in connection with significant revenue agreements and from all other customers as follows:

Years Ended December 31, (In thousands)	2017				2016		
	Renewable Products	Licenses and Royalties	Grants and Collaborations	TOTAL	Renewable Products	Licenses and Royalties	Grants and Collaborat
Revenue from significant revenue agreements with:							
DSM (related party)	$—	$57,972	$1,679	$59,651	$—	$—	$—
Firmenich	9,621	1,199	5,803	16,623	9,660	745	7,513
Nenter & Co., Inc.	12,057	2,633	—	14,690	6,236	—	—
DARPA	—	—	12,333	12,333	—	—	9,697
Ginkgo	—	—	—	—	—	15,000	—
Subtotal revenue from significant revenue agreements	21,678	61,804	19,815	103,297	15,896	15,745	17,210
Revenue from all other customers	20,692	2,673	16,783	40,148	9,614	94	8,633
Total revenue from all customers	$42,370	$64,477	$36,598	$143,445	$25,510	$15,839	$25,843

Renewable Products

Firmenich Agreements

In 2013, the Company entered into a collaboration agreement with Firmenich SA (Firmenich) (as amended, the Firmenich Collaboration Agreement), for the development and commercialization of multiple renewable flavors and fragrances compounds. In 2014, the Company entered into a supply agreement with Firmenich (the Firmenich Supply Agreement) for compounds developed under the Firmenich Collaboration Agreement. The Firmenich Collaboration Agreement and Firmenich Supply Agreement (the Firmenich Agreements) are considered for revenue recognition purposes to comprise a single multiple-element arrangement.

In July 2017, the Company and Firmenich entered into an amendment of the Firmenich Collaboration Agreement, pursuant to which the parties agreed to exclude certain compounds from the scope of the agreement and to amend certain terms connected with the supply and use of such compounds when commercially produced. In addition, the parties agreed to (i) fix at a 70/30 basis (70% for Firmenich) the ratio at which the parties will share profit margins from sales of two compounds; (ii) set at a 70/30 basis (70% for Firmenich) the ratio at which the parties will share profit margins from sales of a distinct form of compound until Firmenich receives $15.0 million more than the Company in the aggregate from such sales, after which time the parties will share the profit margins 50/50 and (iii) a maximum Company cost of a compound where a specified purchase volume is satisfied, and alternative production and margin share arrangements in the event such Company cost cap is not achieved.

Pursuant to the Firmenich Collaboration Agreement, the Company agreed to pay a one-time success bonus to Firmenich of up to $2.5 million if certain commercialization targets are met. Such targets have not yet been met as of December 31, 2017. The one-time success bonus will expire upon termination of the Firmenich Collaboration Agreement, which has an initial term of 10 years and will automatically renew at the end of such term (and at the end of any extension) for an additional 3-year term unless otherwise terminated. At December 31, 2017, the Company had a $0.3 million liability associated with this one-time success bonus that has been recorded as a reduction to the associated collaboration revenue.

Nenter Agreements

In April 2016, the Company and Nenter & Co., Inc. (Nenter) entered into a renewable farnesene supply agreement (the Nenter Supply Agreement) under which the Company agreed to supply farnesene and provide certain exclusive purchase rights, and Nenter committed to purchase minimum quantities and make quarterly royalty payments to the Company representing a portion of Nenter's profit on the sale of products produced using farnesene purchased under the agreement. The agreement expires December 31, 2020 and will automatically renew for an additional five years unless otherwise terminated. In December 2017, the Company assigned the Nenter Supply Agreement to DSM in connection with the Company's sale of Amyris Brasil, which owns and operates the Brotas 1 production facility; see Note 13, "Divestiture" for details.

In October 2016, the Company and Nenter entered into a separate cooperation agreement. In May 2017, the parties terminated that agreement, and as consideration for the termination, the Company paid Nenter a $2.5 million fee, which is included in Sales, General and Administrative expense for the year ended December 31, 2017.

Licenses and Royalties

DSM Agreements

DSM July and September 2017 Collaboration and Licensing Agreements

In July and September 2017, the Company entered into three separate collaboration agreements with DSM (the DSM Collaboration Agreements) to jointly develop three new molecules in the Health and Nutrition field (the DSM Ingredients) using the Company's technology, which the Company would produce and DSM would commercialize. Pursuant to the DSM Collaboration Agreements, DSM will, subject to certain conditions, provide funding for the development of the DSM Ingredients and, upon commercialization, the parties would enter into supply agreements whereby DSM would purchase the applicable DSM Ingredients from the Company at prices agreed by the parties. The development services will be directed by a joint steering committee with equal representation by DSM and the Company. In addition, the parties will share profit margin from DSM's sales of products that incorporate the DSM Ingredients subject to the DSM Collaboration Agreements.

In connection with the entry into the DSM Collaboration Agreements, the Company and DSM also entered into certain license arrangements (the DSM License Agreements) providing DSM with certain rights to use the technology underlying the development of the DSM Ingredients to produce and sell products incorporating the DSM Ingredients. Under the DSM License Agreements, DSM agreed to pay the Company $9.0 million for a worldwide, exclusive, perpetual, royalty-free license to produce and sell products incorporating one of the DSM Ingredients in the Health and Nutrition field.

In addition, in connection with the entry into the DSM Collaboration Agreements, the Company and DSM entered into the DSM Credit Letter, pursuant to which the Company granted a credit to DSM in an aggregate amount of $12.0 million to be offset against future collaboration payments (in an amount not to exceed $6.0 million) and royalties receivable from DSM beginning in 2018. The fair value of the DSM Credit Letter was $7.1 million at inception. During the three months ended December 31, 2017, the Company and DSM terminated the DSM Credit Letter, eliminating the $12.0 million credit.

The Company received $34.0 million of fixed consideration resulting from the August 2017 DSM Offering and the DSM License Agreements and allocated this consideration to the various elements identified. The Company first allocated $33.3 million of the fixed consideration to the August 2017 DSM Cash Warrants, August 2017 DSM Dilution Warrants, the Make-Whole Payment, the August 2017 DSM Series B Preferred Stock and the DSM Credit Agreement. The remaining $0.7 million was recognized as revenue generated from the delivery of the intellectual property licenses to DSM. At December 31, 2017, there was $7.1 million of deferred revenue in connection with the DSM License and Collaboration Agreements, which became a component of the December 2017 multiple-element arrangement with DSM described below.

DSM Value Sharing Agreement

In December 2017, in conjunction with the Company's divestiture of its Brotas 1 production facility (see Note 13, "Divestiture"), the Company and DSM entered into a value sharing agreement (the Value Sharing Agreement), pursuant to which DSM will make certain royalty payments to the Company representing a portion of the profit on the sale of products produced using farnesene purchased under the Nenter Supply Agreement realized by Nenter and paid to DSM in accordance with the Nenter Supply Agreement. In addition, pursuant to the Value Sharing Agreement, DSM will guarantee certain minimum annual royalty payments for the first three calendar years of the Value Sharing Agreement, subject to future offsets in the event that the royalty payments to which the Company would otherwise have been entitled under the Value Sharing Agreement for such years fall below certain milestones. The fair value of the nonrefundable minimum annual royalty payments were determined to be fixed and determinable, and were included as part of the total arrangement consideration subject to allocation of the overall multiple-element transaction that occurred in December 2017 with DSM. Under the Value Sharing Agreement, the Company is required to use certain value share payments received by the Company with respect to the first three calendar years of the Value Sharing Agreement in excess of the guaranteed minimum annual value share payments for such years, if any, to repay amounts outstanding under the DSM Credit Agreement; see Note 4, "Debt". The Value Sharing Agreement will expire in December 2027, subject to the right of each of the parties to terminate for uncured material breach by the other party or in the event the other party is subject to bankruptcy proceedings, liquidation, dissolution or similar proceedings or other specified events. In March 2018, the Company and DSM amended the Value Sharing Agreement to provide for the use of estimates in calculating quarterly value share payments (subject to true-up) and modify how the guaranteed minimum annual value share payment for 2018 will be offset against value payments accruing during 2018.

DSM Performance Agreement

In December 2017, in connection with the Company's divestiture of its Brotas 1 production facility (see Note 13, "Divestiture"), the Company and DSM entered into a performance agreement (Performance Agreement), pursuant to which the Company will provide certain research and development services to DSM relating to the development of the technology underlying the farnesene-related products to be manufactured at the Brotas 1 facility in exchange for related funding, including certain bonus payments in the event that specific performance metrics are achieved. The

Company will record the bonus payments as earned revenue upon the transfer of the developed technology to DSM. If the Company does not meet the established metrics under the Performance Agreement, the Company will be required to pay $1.8 million to DSM. The Performance Agreement will expire in December 2020, subject to the right of each of the parties to terminate for uncured material breach by the other party or in the event the other party is subject to bankruptcy proceedings, liquidation, dissolution or similar proceedings or other specified events.

DSM November 2017 Intellectual Property License Agreement

In November 2017, in connection with the Company's divestiture of its Brotas 1 production facility (see Note 13, "Divestiture"), the Company and DSM entered into a license agreement covering certain intellectual property of the Company useful in the performance of certain commercial supply agreements assigned by the Company to DSM relating to products currently manufactured at Brotas 1 (the DSM November 2017 Intellectual Property License Agreement). In December 2017, DSM paid the Company an upfront license fee of $27.5 million. In accounting for the Divestiture with DSM, a multiple-element arrangement, the license of intellectual property to DSM was identified as revenue deliverable with standalone value and qualified as a separate unit of accounting. The Company performed an analysis to determine the fair value for of the license, and allocated the non-contingent consideration based on the relative fair value. The Company determined that the license had been fully delivered, and, as such, license revenue of $57.3 million was recognized as revenue.

Ginkgo Agreements

Ginkgo Initial Strategic Partnership Agreement and Collaboration Agreement

In June 2016, the Company entered into a collaboration agreement (the Initial Ginkgo Agreement) with Ginkgo Bioworks, Inc. (Ginkgo), pursuant to which the Company licensed certain intellectual property to Ginkgo in exchange for a fee of $20.0 million to be paid by Ginkgo to the Company in two installments, and a 10% royalty on net revenue, including without limitation net sales, royalties, fees and any other amounts received by Ginkgo related directly to the license. The Company received the first installment of $15.0 million in 2016. However, the Company did not receive the second installment of $5.0 million.

In addition, pursuant to the Initial Ginkgo Agreement, (i) the Company and Ginkgo agreed to pursue the negotiation and execution of a detailed definitive partnership and license agreement setting forth the terms of a commercial partnership and collaboration arrangement between the parties (Ginkgo Collaboration), (ii) the Company agreed to issue to Ginkgo a warrant to purchase 333,334 shares of the Company's common stock at an exercise price of $7.50, exercisable for one year from the date of issuance, in connection with the execution of the definitive agreement for the Ginkgo Collaboration, (iii) the Company received a deferment of all scheduled principal repayments under the Senior Secured Loan Facility, the lender and administrative agent under which is an affiliate of Ginkgo, as well as a waiver of the Minimum Cash Covenant, through October 31, 2016 and (iv) in connection with the execution of the definitive agreement for the Ginkgo Collaboration, the parties would effect an amendment of the LSA (see Note 4, "Debt") to (x) extend the maturity date of all outstanding loans under the Senior Secured Loan Facility, (y) waive any required amortization payments under the Senior Secured Loan Facility until maturity and (z) eliminate the Minimum Cash Covenant under the Senior Secured Loan Facility.

In August 2016, the Company issued to Ginkgo the warrant described above. The warrant was issued prior to the execution of the definitive agreement for the Ginkgo Collaboration in connection with the transfer of certain information technology from Ginkgo to the Company. The warrant expired in August 2017 unexercised.

In September 2016, the Company and Ginkgo entered into a collaboration agreement (the Ginkgo Collaboration Agreement) setting forth the terms of the Ginkgo Collaboration, under which the parties would collaborate to develop, manufacture and sell commercial products, and Ginkgo would pay royalties to the Company. The Ginkgo Collaboration Agreement provided that, subject to certain exceptions, all third-party contracts for the development of chemical small molecule compounds whose manufacture is enabled by the use of microbial strains and fermentation technologies that are entered into by the Company or Ginkgo during the term of the Ginkgo Collaboration Agreement would be subject to the Ginkgo Collaboration and the approval of the other party (not to be unreasonably withheld). Responsibility for the engineering and small-scale process development of the newly developed products would be allocated between the parties on a project-by-project basis, and the Company would be principally responsible for the commercial scale-up and production of such products, with each party generally bearing its own respective costs and expenses relating to the Ginkgo Collaboration, including capital expenditures. Notwithstanding the foregoing, subject to the Company sourcing funding and breaking ground on a new production facility by March 30, 2017, Ginkgo would pay the Company a fee of $5.0 million; however, the Company did not receive the second installment payment.

Under the Ginkgo Collaboration Agreement, subject to certain exceptions, including excluded or refused products and cost savings initiatives, the profit on the sale of products subject to the Ginkgo Collaboration Agreement as well as cost-sharing, milestone and "value-creation" payments associated with the development and production of such products would be shared equally between the parties. The parties also agreed to provide each other with a license and other rights to certain intellectual property necessary to support the development and manufacture of the products under the Ginkgo Collaboration, and also to provide each other with access to certain other intellectual property useful in connection with the activities to be undertaken under the Ginkgo Collaboration Agreement, subject to certain carve-outs.

The initial term of the Ginkgo Collaboration Agreement was three years. $15.0 million was recognized as revenue upon receipt of cash in July 2016. The remaining $5.0 million was never received and was not recognized.

Ginkgo Partnership Agreement

In November 2017, the Company and Ginkgo entered into a partnership agreement (the Ginkgo Partnership Agreement) that supersedes the Ginkgo Collaboration Agreement. Under the Ginkgo Partnership Agreement, the Company and Ginkgo agreed:

- to continue to collaborate on limited research and development;
- to provide each other licenses (with royalties) to specified intellectual property for limited purposes;
- for the Company to pay Ginkgo quarterly fees of $0.8 million (Partnership Payments) beginning on December 31, 2018 and ending on September 30, 2022;
- to share profit margins from sales of a certain product to be developed under the Ginkgo Partnership Agreement on a 50/50 basis, subject to certain conditions, provided that net profits will be payable to Ginkgo for any quarterly period only to the extent that such net profits exceed the sum of (a) quarterly interest payments due under the November 2017 Ginkgo Note (see Note 4, "Debt") and (b) Partnership Payments due in such quarter; and
- for the Company to pay Ginkgo $0.5 million in connection with certain fees previously owed to Ginkgo under the Ginkgo Collaboration Agreement.

The Ginkgo Partnership Agreement provides for an initial term of two years and will automatically renew for successive one-year terms thereafter unless otherwise terminated.

Collaborations

DARPA Technology Investment Agreement

In September 2015, the Company entered into a technology investment agreement (the TIA) with The Defense Advanced Research Projects Agency (DARPA), under which the Company, with the assistance of specialized subcontractors, is working to create new research and development tools and technologies for strain engineering and scale-up activities. The agreement is being funded by DARPA on a milestone basis. Under the TIA, we and our subcontractors could collectively receive DARPA funding of up to $35.0 million over the program's four year term if all of the program's milestones are achieved. In conjunction with DARPA's funding, we and our subcontractors are obligated to collectively contribute approximately $15.5 million toward the program over its four year term (primarily by providing specified labor and/or purchasing certain equipment). For the DARPA agreement, the Company recognizes revenue using the milestone method, based upon achievement of milestones once acknowledged by DARPA.

11. Related Party Transactions

Related Party Divestiture

See Note 13, "Divestiture" for details regarding the sale of Amyris Brasil to DSM in December 2017.

Related Party Debt

See Note 4, "Debt" for details of these related party debt transactions:

- August 2013 Financing Convertible Notes
- 2014 Rule 144A Convertible Notes

- R&D Note (also see Note 18, “Subsequent Events”)
- DSM Note (also see Note 13, "Divestiture")
- February 2016 Private Placement
- June 2016 and October 2016 Private Placements
- Maturity Treatment Agreement

Related party debt was as follows:

December 31, (in thousands)	2017			2016		
	Principal	Unamortized Debt (Discount) Premium	Net	Principal	Unamortized Debt (Discount) Premium	Net
Total						
R&D note	$3,700	$ (18)	$3,682	$3,700	$ (80)	$3,620
August 2013 financing convertible notes	21,711	897	22,608	19,781	2,033	21,814
2014 Rule 144A convertible notes	9,705	(1,538)	8,167	9,705	(2,986)	6,719
	35,116	(659)	34,457	33,186	(1,033)	32,153
DSM						
DSM note	25,000	(8,039)	16,961	—	—	—
Other DSM loan	393	—	393	—	—	—
	25,393	(8,039)	17,354	—	—	—
Biolding						
February 2016 private placement	2,000	—	2,000	2,000	(131)	1,869
Foris						
2014 Rule 144A convertible notes	5,000	(660)	4,340	5,000	(1,316)	3,684
February 2016 private placement	—	—	—	16,000	(1,047)	14,953
June and October 2016 private placements	—	—	—	11,000	—	11,000
	5,000	(660)	4,340	32,000	(2,363)	29,637
Naxyris						
February 2016 private placement	—	—	—	2,000	(131)	1,869
Temasek						
2014 Rule 144A convertible notes	10,000	(1,586)	8,414	10,000	(3,078)	6,922
	$77,509	$ (10,944)	$66,565	$79,186	$ (6,736)	$72,450

The fair value of the derivative liabilities related to the related party R&D Note, related party August 2013 Financing Convertible Notes and related party 2014 Rule 144A Convertible Notes as of December 31, 2017 and 2016 was $0.2 million and $0.8 million, respectively. The Company recognized gains from change in the fair value of these derivative liabilities of $0.6 million, $7.6 million and $10.5 million for the years ended December 31, 2017, 2016 and 2015, respectively; see Note 3, "Fair Value Measurement".

Related Party Revenue

The Company recognized revenue from related parties and from all other customers as follows:

Years Ended December 31, (In thousands)	2017				2016				201
	Renewable Products	Licenses and Royalties	Grants and Collaborations	TOTAL	Renewable Products	Licenses and Royalties	Grants and Collaborations	TOTAL	Ren Proc
Revenue from related parties:									
DSM	$—	$57,972	$1,679	$59,651	$—	$—	$—	$—	$—
Novvi	1,491	—	—	1,491	1,390	—	—	1,390	—
Total	(200)	—	—	(200)	172	—	—	172	86
Subtotal revenue from related parties	1,291	57,972	1,679	60,942	1,562	—	—	1,562	86
Revenue from all other customers	41,079	6,505	34,919	82,503	23,948	15,839	25,843	65,630	13
Total revenue from all customers	$42,370	$64,477	$36,598	$143,445	$25,510	$15,839	$25,843	$67,192	$14

See Note 10, "Significant Revenue Agreements" for details of the Company's revenue agreements with DSM.

Related Party Accounts Receivable

Related party accounts receivable was as follows:

December 31, (In thousands)	2017	2016
DSM	$12,823	$—
Novvi	$1,607	$—
Total	$238	$805
Related party accounts receivable, net	$14,668	$805

In addition to the amounts shown above, there was a $7.9 million unbilled receivable from DSM included in noncurrent assets on the consolidated balance sheet at December 31, 2017.

Related Party Joint Ventures

See Note 7, "Variable-interest Entities and Unconsolidated Investments" for information about the Company's:

- Aprinnova joint venture with Nikko
- TAB joint venture with Total

Pilot Plant and Secondee Agreements

The Company and Total are parties to the following agreements:

- Pilot Plant Agreement, under which the Company leases space in its pilot plants to Total and provides Total with fermentation and downstream separations scale-up services and training to Total employees. In connection with this arrangement, the Company charged Total $0.4 million, $0.4 million and $0.9 million for the years ended December 31, 2017, 2016 and 2015, respectively, which were offset against the Company's cost and operating expenses.

- Secondee Agreement, under which Total assigns certain of its employees to the Company to provide research and development services. In connection with this agreement, Total charged the Company zero, $0.8 million and $0.9

million for the years ended December 31, 2017, 2016 and 2015, respectively.

In February 2017, the Company and Total amended these agreement to provide that the Company would not be charged for the cost of Total's employees on or after May 1, 2016, other than overhead charges. Net amounts payable to Total under these two arrangements were $1.4 million and $2.2 million as of December 31, 2017 and 2016, respectively. The Secondee Agreement expired on December 31, 2017, and the Pilot Plant Agreement expires in April 2019.

Office Sublease

The Company subleases certain office space to Novvi, for which the Company charged Novvi $0.5 million, $0.4 million (net of $0.4 million forgiven) and $0.7 million for the years ended December 31, 2017, 2016 and 2015, respectively.

12. Stock-based Compensation

Stock-based Compensation Expense Related to All Plans

Stock-based compensation expense related to all employee stock compensation plans, including options, restricted stock units and ESPP, was as follows:

Years Ended December 31,			
(In thousands)	2017	2016	2015
Research and development	$2,204	$1,948	$2,306
Sales, general and administrative	4,061	5,377	6,828
Total stock-based compensation expense	$6,265	$7,325	$9,134

Plans

2010 Equity Incentive Plan

The Company's 2010 Equity Incentive Plan (the 2010 Equity Plan) became effective on September 28, 2010 and will terminate in 2020. The 2010 Equity Plan provides for the granting of common stock options, restricted stock awards, stock bonuses, stock appreciation rights, restricted stock units and performance awards. It allows for time-based or performance-based vesting for the awards. Options granted under the 2010 Equity Plan may be either incentive stock

options (ISOs) or non-statutory stock options (NSOs). ISOs may be granted only to Company employees (including officers and directors who are also employees). NSOs may be granted to Company employees, non-employee directors and consultants. The Company will be able to issue no more than 2,000,000 shares pursuant to the grant of ISOs under the 2010 Equity Plan. Options under the 2010 Equity Plan may be granted for periods of up to ten years. All options issued to date have had a ten year life. Under the plan, the exercise price of any ISOs and NSOs may not be less than 100% of the fair market value of the shares on the date of grant. The exercise price of any ISOs and NSOs granted to a 10% stockholder may not be less than 110% of the fair value of the underlying stock on the date of grant. The options granted to date generally vest over four to five years.

As of December 31, 2017 and 2016, options were outstanding to purchase 1,255,045 and 770,761 shares, respectively, of the Company's common stock granted under the 2010 Equity Plan, with a weighted-average exercise price per share of $26.29 and $45.76, respectively. In addition, as of December 31, 2017 and 2016, restricted stock units representing the right to receive 683,554 and 454,923 shares, respectively, of the Company's common stock granted under the 2010 Equity Plan were outstanding. As of December 31, 2017 and 2016, 252,107 and 552,392 shares, respectively, of the Company’s common stock remained available for future awards that may be granted under the 2010 Equity Plan.

The number of shares reserved for issuance under the 2010 Equity Plan increases automatically on January 1 of each year starting with January 1, 2011, by a number of shares equal to 5% of the Company’s total outstanding shares as of the immediately preceding December 31. However, the Company’s Board of Directors or the Leadership Development and Compensation Committee of the Board of Directors retains the discretion to reduce the amount of the increase in any particular year.

2005 Stock Option/Stock Issuance Plan

In 2005, the Company established its 2005 Stock Option/Stock Issuance Plan (2005 Plan) which provided for the granting of common stock options, restricted stock units, restricted stock and stock purchase rights awards to employees and consultants of the Company. The 2005 Plan allowed for time-based or performance-based vesting for the awards. Options granted under the 2005 Plan were ISOs or NSOs. ISOs were granted only to Company employees (including officers and directors who are also employees). NSOs were granted to Company employees, non-employee directors, and consultants.

All options issued under the 2005 Plan had a ten year life. The exercise prices of ISOs and NSOs granted under the 2005 Plan were not less than 100% of the estimated fair value of the shares on the date of grant, as determined by the Board of Directors. The exercise price of an ISO and NSO granted to a 10% stockholder could not be less than 110% of the estimated fair value of the underlying stock on the date of grant as determined by the Board. The options generally vested over 5 years.

As of December 31, 2017 and 2016, options to purchase 79,322 and 100,260 shares, respectively, of the Company’s common stock granted under the 2005 Plan remained outstanding and as a result of the adoption of the 2010 Equity Plan discussed above, zero shares of the Company’s common stock remained available for future awards issuance under the 2005 Plan. The options outstanding under the 2005 Plan as of December 31, 2017 and 2016 had a weighted-average exercise price per share of $144.58 and $127.58, respectively.

2010 Employee Stock Purchase Plan

The 2010 Employee Stock Purchase Plan (the 2010 ESPP) became effective on September 28, 2010. The 2010 ESPP is designed to enable eligible employees to purchase shares of the Company's common stock at a discount. Offering periods under the 2010 ESPP generally commence on each May 16 and November 16, with each offering period lasting for one year and consisting of two six-month purchase periods. The purchase price for shares of common stock under the 2010 ESPP is the lesser of 85% of the fair market value of the Company's common stock on the first day of the applicable offering period or the last day of each purchase period. A total of 11,241 shares of common stock were initially reserved for future issuance under the 2010 Employee Stock Purchase Plan. During the life of the 2010 ESPP, the number of shares reserved for issuance increases automatically on January 1 of each year, starting with January 1, 2011, by a number of shares equal to 1% of the Company's total outstanding shares as of the immediately preceding December 31. However, the Company's Board of Directors or the Leadership Development and Compensation Committee of the Board of Directors retains the discretion to reduce the amount of the increase in any particular year. No more than 666,666 shares of the Company's common stock may be issued under the 2010 ESPP and no other shares may be added to this plan without the approval of the Company's stockholders.

Stock Option Activity

Stock option activity is summarized as follows:

Year ended December 31,	2017	2016	2015
Options granted	661,094	239,012	314,686
Weighted-average grant-date fair value per share	$3.26	$8.85	$18.15
Compensation expense related to stock options (in millions)	$3.3	$3.5	$6.0
Unrecognized compensation costs as of December 31 (in millions)	$2.7	$4.4	$8.0

The Company expects to recognize the December 31, 2017 balance of unrecognized costs over a weighted-average period of 2.5 years. Future option grants will increase the amount of compensation expense to be recorded in these periods.

Stock-based compensation expense for stock options and employee stock purchase plan rights is estimated at the grant date and offering date, respectively, based on the fair-value using the Black-Scholes option pricing model. The fair value of employee stock options is amortized on a straight-line basis over the requisite service period of the awards. The fair value of employee stock options was estimated using the following weighted-average assumptions:

Years Ended December 31,	2017	2016	2015
Expected dividend yield	— %	— %	— %
Risk-free interest rate	2.1 %	1.4 %	1.8 %
Expected term (in years)	6.12	6.16	6.08
Expected volatility	84 %	73 %	74 %

The Company uses third-party analyses to assist in developing the assumptions used in, as well as calibrating, its Black-Scholes model. The Company is responsible for determining the assumptions used in estimating the fair value of its share-based payment awards.

The expected life of options is based primarily on historical share option exercise experience of the employees for options granted by the Company. All options are treated as a single group in the determination of expected life, as the Company does not currently expect substantially different exercise or post-vesting termination behavior among the employee population. The risk-free interest rate is based on the U.S. Treasury yield for a term consistent with the expected life of the awards in effect at the time of grant. Expected volatility is based on the historical volatility of the Company's common stock. The Company has no history or expectation of paying dividends on common stock.

Stock-based compensation expense associated with options is based on awards ultimately expected to vest. At the time of an option grant, the Company estimates the expected future rate of forfeitures based on historical experience. These estimates are revised, if necessary, in subsequent periods if actual forfeiture rates differ from those estimates. If the actual forfeiture rate is lower than estimated the Company will record additional expense and if the actual forfeiture is higher than estimated the Company will record a recovery of prior expense.

The Company’s stock option activity and related information for the year ended December 31, 2017 was as follows:

	Number of Stock Options	Weighted-average Exercise Price	**Weighted-average Remaining Contractual Life** (in years)	**Aggregate Intrinsic Value** (in thousands)
Outstanding - December 31, 2016	875,021	$ 55.20	6.70	$ 443
Options granted	661,094	$ 4.56		
Options exercised	-	$ -		
Options forfeited or expired	(197,748)	$ 33.46		
Outstanding - December 31, 2017	1,338,367	$ 33.40	7.71	$ 97
Vested or expected to vest after December 31, 2017	1,257,439	$ 33.40	7.62	$ 81
Exercisable at December 31, 2017	925,778	$ 43.48	7.18	$ 27

The aggregate intrinsic value of options exercised under all option plans was zero for the years ended December 31, 2017, 2016 and 2015, respectively, determined as of the date of option exercise.

Restricted Stock Units Activity and Expense

During the years ended December 31, 2017, 2016 and 2015, 523,167, 326,523 and 332,569 restricted stock units (RSUs), respectively, were granted with a weighted-average service-inception date fair value per unit of $5.51, $9.15 and $27.30, respectively. The Company recognized a total of $2.8 million, $3.6 million, and $2.8 million, respectively, for the years ended December 31, 2017, 2016 and 2015 in stock-based compensation expense for restricted stock units granted. As of December 31, 2017 and 2016, there were unrecognized compensation costs of $5.0 million and $5.4 million, respectively, related to these restricted stock units.

Stock-based compensation expense for RSUs is measured based on the closing fair market value of the Company's common stock on the date of grant.

The Company’s RSU and restricted stock activity and related information for the year ended December 31, 2017 was as follows:

	Number of Restricted Stock Units	Weighted-average Grant-date Fair Value	Weighted-average Remaining Contractual Life (in years)
Outstanding - December 31, 2016	454,923	$ 17.48	1.4
Awarded	523,167	$ 5.51	
Vested	(191,844)	$ 18.71	
Forfeited	(102,692)	$ 13.00	
Outstanding - December 31, 2017	683,554	$ 8.66	1.4
Vested or expected to vest after December 31, 2017	533,670	$ 8.92	1.3

ESPP Activity and Expense

During the years ended December 31, 2017 and 2016, 47,045 and 22,405 shares, respectively, of the Company's common stock were purchased under the 2010 ESPP. At December 31, 2017 and 2016, 80,594 and 127,669 shares, respectively, of the Company’s common stock remained reserved for issuance under the 2010 ESPP.

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During the years ended December 31, 2017, 2016 and 2015, the Company also recognized stock-based compensation expense related to its 2010 ESPP of $0.1 million, $0.1 million, and $0.3 million, respectively.

The valuation of employee stock purchase rights and the related assumptions are for the employee stock purchases made during the respective fiscal years.

13. Divestiture

On December 28, 2017, the Company completed the sale of Amyris Brasil, which operated the Company's Brotas 1 production facility, to DSM and concurrently entered into a series of commercial agreements and a credit agreement with DSM. At closing, the Company received $33.0 million in cash for the capital stock of Amyris Brazil, which is subject to certain post-closing working capital adjustments; and reimbursements contingent upon DSM's utilization of certain Brazilian tax benefits it acquired with its purchase of Amyris Brasil. The Company used $12.6 million of the cash proceeds received to repay certain indebtedness of Amyris Brasil. The total fair value of the consideration to be received by the Company for Amyris Brasil was $56.9 million and resulted in a pretax gain of $5.7 million from continuing operations.

Concurrent with the sale of Amyris Brasil, the Company and DSM entered into a series of commercial agreements including (i) a license agreement to DSM of its farnesene product for DSM to use in the Vitamin E, lubricant, and flavor and fragrance markets; (ii) a value share agreement that DSM will pay the Company specified royalties representing a portion of the profit on the sale of Vitamin E produced from farnesene under the Nenter Supply Agreement assigned to DSM; (iii) a performance agreement for the Company to perform research and development to optimize farnesene for production and sale of farnesene products; and (iv) a transition services agreement for the Company to provide finance, legal, logistics, and human resource services to support the Brotas 1 facility under DSM ownership for a six-month period with a DSM option to extend for six additional months. At closing, DSM paid the Company a nonrefundable license fee of $27.5 million and a nonrefundable royalty payment (previously referred to as value share) of $15.0 million. DSM will also pay the Company nonrefundable minimum annual royalty payments in 2018 and 2019. The future nonrefundable minimum annual royalty payments were determined to be fixed and determinable with a fair value of $17.8 million, and were included as part of the total arrangement consideration subject to allocation of this overall multiple-element divestiture transaction. See Note 10, "Significant Revenue Agreements", for a full listing and details of agreements entered into with DSM. Additionally, the Company and DSM entered into a $25.0 million credit agreement that the Company used to repay all outstanding amounts under the Guanfu Note (see Note 4, "Debt").

The Company accounted for the sale of Amyris Brasil as a sale of a business. The agreements entered into concurrently with the sale of Amyris Brasil including the license agreement, value share agreement, performance agreement, transition services agreement, and credit agreement contain various elements and, as such, are deemed to

be an arrangement with multiple deliverables as defined under U.S. GAAP. The Company performed an analysis to determine the fair value for all elements in the agreements with DSM and separated the elements between the non-revenue and revenue elements. After allocating the total fair value of the non-revenue elements from the fixed and determinable consideration received, the Company allocated the remaining fixed and determinable consideration to the revenue elements based on relative fair value. As such, the Company recognized $57.3 million of license revenue and $2.1 million of deferred revenue related to the performance and transition services agreements with DSM as of December 31, 2017.

Results from the operations of Amyris Brasil are included in our Consolidated Statements of Operations for 2017, 2016 and 2015 and we have not segregated the results of operations or net assets of Amyris Brasil on our financial statements for any period presented. The disposition of the assets and liabilities of Amyris Brasil did not qualify for classification as a discontinued operation as it did not represent a strategic shift that will have a major effect on the Company’s operations and financial results.

14. Goodwill

At December 31, 2017 and December 31, 2016, the Company carried $0.6 million of goodwill on its consolidated balance sheet, in the line captioned "Other Assets".

15. Income Taxes

The components of loss before income taxes, loss from investments in affiliates and net loss attributable to noncontrolling interest are as follows:

Years Ended December 31, **(In thousands)**	2017	2016	2015
United States	$(68,777)	$(101,210)	$(188,943)
Foreign	(3,257)	4,429	(24,457)
Loss before income taxes and loss from investments in affiliates	$(72,034)	$(96,781)	$(213,400)

The components of the provision for income taxes are as follows:

Years Ended December 31, (In thousands)	2017	2016	2015
Current:			
Federal	$—	$—	$—
State	—	—	—
Foreign	964	553	468
Total current provision	964	553	468
Deferred:			
Federal	(669)	—	—
State	—	—	—
Foreign	—	—	—
Total deferred provision (benefit)	(669)	—	—
Total provision for income taxes	$295	$553	$468

A reconciliation between the statutory federal income tax and the Company's effective tax rates as a percentage of loss before income taxes and loss from investments in affiliates is as follows:

Years Ended December 31,	2017	2016	2015
Statutory tax rate	(34.0)%	(34.0)%	(34.0)%
State taxes, net of federal tax benefit	— %	— %	(0.3)%
Stock-based compensation	0.1 %	— %	0.1 %
Federal R&D credit	(1.0)%	(0.8)%	(0.6)%
Derivative liabilities	1.7 %	1.4 %	3.6 %
Nondeductible interest	6.2 %	5.0 %	5.5 %
Other	(0.4)%	(3.2)%	0.1 %
Foreign losses	17.6 %	0.5 %	(1.2)%
Change in U.S. federal tax rate	57.0 %	— %	— %
IRC Section 382 limitation	5.0 %	— %	— %
Change in valuation allowance	(51.9)%	31.7 %	27.1 %
Effective income tax rate	0.3 %	0.6 %	0.3 %

Temporary differences and carryforwards that gave rise to significant portions of deferred taxes are as follows:

December 31, **(In thousands)**	2017	2016	2015
Net operating loss carryforwards	$23,877	$236,741	$207,241
Property, plant and equipment	4,195	12,917	10,519
Research and development credits	10,702	17,348	16,612
Foreign tax credit	2,669	2,452	1,899
Accruals and reserves	10,754	30,303	26,366
Stock-based compensation	11,417	17,184	19,048
Capitalized start-up costs	—	9,182	9,568
Capitalized research and development costs	34,973	65,962	63,339
Intangible and others	3,932	6,714	9,999
Total deferred tax assets	102,519	398,803	364,591
Debt discount and derivative	(6,616)	(11,936)	(4,402)
Total deferred tax liabilities	(6,616)	(11,936)	(4,402)
Net deferred tax assets prior to valuation allowance	95,903	386,867	360,189
Less: valuation allowance	(95,903)	(386,867)	(360,189)
Net deferred tax assets	$—	$—	$—

Recognition of deferred tax assets is appropriate when realization of such assets is more likely than not. Based on the weight of available evidence, especially the uncertainties surrounding the realization of deferred tax assets through future taxable income, the Company believes that it is more likely than not that the net deferred tax assets will not be fully realizable. Accordingly, the Company has provided a full valuation allowance against its net deferred tax assets as of December 31, 2017, 2016 and 2015. The valuation allowance decreased by $291.0 million during the year ended December 31, 2017 primarily due to the partial write-off of federal net operating loss (NOL) carryforwards as described below. The valuation allowance increased by $26.7 million and $47.9 million during the years ended December 31, 2016 and 2015, respectively.

On January 1, 2017, the Company adopted ASU 2016-09, which simplifies several aspects of accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, statutory tax withholding requirements and classification in the statement of cash flows. Adoption of ASU 2016-09 did not have an impact on our consolidated balance sheet, results of operations, cash flows or statement of stockholders' deficit, because we have a full valuation allowance on our deferred tax assets. Upon adoption, the Company recognized previously unrecognized excess tax benefits using the modified retrospective transition method. The previously unrecognized excess tax effects were recorded as a deferred tax asset, which was fully offset by a valuation allowance. Without the valuation allowance, the Company's deferred tax assets would have increased by $40.1 million.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the Act) was signed into law, making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21%

effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017.

The Company has calculated its best estimate of the impact of the Act in its year-end income tax provision in accordance with its understanding of the Act and guidance available as of the date of this filing. The provisional amount related to the remeasurement of certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future was approximately $37.7 million, with a corresponding and fully offsetting adjustment to our valuation allowance for the year ended December 31, 2017. The Company does not expect a material impact related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings.

On December 22, 2017, Staff Accounting Bulletin No. 118 (SAB 118) was issued to address the application of U.S. GAAP in situations when a company does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. Because the Company is still in the process of analyzing certain provisions of the Act in accordance with SAB 118, the Company has determined that the adjustment to its deferred taxes was a provisional amount and a reasonable estimate at December 31, 2017. The Act creates a new requirement that certain income (i.e., “GILTI”) earned by controlled foreign corporations (CFCs) must be included currently in the gross income of the CFCs’ U.S. shareholder. The Company’s selection of an accounting policy with respect to the new GILTI tax rules will depend, in part, on analyzing its global income to determine whether it expects to have future U.S. inclusions in taxable income related to GILTI and, if so, what the impact is expected to be. Because whether the Company expects to have future U.S. inclusions in taxable income related to GILTI depends on not only its current structure and estimated future results of global operations, but also its intent and ability to modify its structure and/or its business, the Company is not yet able to reasonably estimate the effect of this provision of the Act. Therefore, the Company has not made any adjustments related to potential GILTI tax in its financial statements and has not made a policy decision regarding whether to record deferred taxes on GILTI.

Given that the Company is still in the transition period for the accounting for income tax effects of the Act, the current assessment on deferred tax assets is based on currently available information and guidance. If in the future any element of the tax reform changes the related accounting guidance for income tax, such change could affect the Company's income tax position, and the Company might need to adjust the provision for income taxes accordingly.

As of December 31, 2017, the Company had federal net operating loss carryforwards of $136.5 million, and state net operating loss carryforwards of $111.7 million, available to reduce future taxable income, if any. The Internal Revenue Code of 1986, as amended, imposes restrictions on the utilization of net operating losses in the event of an "ownership change" of a corporation. Accordingly, a company's ability to use net operating losses may be limited as prescribed under Internal Revenue Code Section 382 (IRC Section 382). Events that may cause limitations in the amount of the net operating losses that the Company may use in any one year include, but are not limited to, a cumulative ownership change of more than 50% over a three-year period. During the year ended December 31, 2017, the Company experienced a cumulative ownership change of greater than 50%. As such, net operating losses generated prior to that change are subject to an annual limitation on their use. Due to the limitations imposed, the Company wrote-off $438.1 million of federal NOL carryover that is expected to expire before it can be utilized. Additionally, the Company wrote-off $14.2 million of its historical federal research and development credit carryovers as a result of the limitations.

As of December 31, 2017, the Company had federal research and development credits of $0.7 million and California research and development credit carryforwards of $12.7 million.

If not utilized, the federal net operating loss carryforward will begin expiring in 2025, and the California net operating loss carryforward will begin expiring in 2028. The federal research and development credit carryforward will begin expiring in 2038 if not utilized. The California tax credits can be carried forward indefinitely.

During the year ended December 31, 2015, unrecognized tax benefits of $8.5 million were resolved in connection with the outcome of a California Supreme Court case involving another taxpayer, which concluded on a methodology that follows that certain of the Company's net operating losses cannot be sustained. The decision had no impact on the Company's gross deferred tax assets as presented, as the Company's deferred tax asset for net operating losses was previously reported, net of a reserve for this same item.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows:

(In thousands)	
Balance at December 31, 2014	$17,081

Decreases in tax positions for prior period	(9,404)
Increases in tax positions during current period	957
Balance at December 31, 2015	8,634
Decreases in tax positions for prior period	(314)
Increases in tax positions during current period	781
Balance at December 31, 2016	9,101
Increases in tax positions for prior period	50
Increases in tax positions during current period	8,029
Balance at December 31, 2017	$17,180

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The Company’s policy is to include interest and penalties related to unrecognized tax benefits within the provision for income taxes. The Company determined that no accrual for interest and penalties was required as of December 31, 2017, 2016 or 2015.

None of the unrecognized tax benefits, if recognized, would affect the effective income tax rate for any of the above years due to the valuation allowance that currently offsets deferred tax assets. The Company does not anticipate that the total amount of unrecognized income tax benefits will significantly increase or decrease in the next 12 months.

The Company’s primary tax jurisdiction is the United States. For United States federal and state tax purposes, returns for tax years 2005 and forward remain open and subject to tax examination by the appropriate federal or state taxing authorities. Brazil tax years 2010 through the current remain open and subject to examination.

As of December 31, 2017, the U.S. Internal Revenue Service (the IRS) has completed its audit of the Company for tax year 2008 and concluded that there were no adjustments resulting from the audit. While the statutes are closed for tax year 2008, the U.S. federal tax carryforwards (net operating losses and tax credits) may be adjusted by the IRS in the year in which the carryforward is utilized.

16. Geographical Information

The chief operating decision maker is the Company's Chief Executive Officer, who makes resource allocation decisions and assesses performance based on financial information presented on a consolidated basis. There are no segment managers who are held accountable by the chief operating decision maker, or anyone else, for operations, operating results, and planning for levels or components below the consolidated unit level. Accordingly, the Company has determined that it has a single reportable segment and operating segment structure.

Revenue by geography is based on the location of the customer. The following tables set forth revenue and property, plant and equipment by geographic area:

Revenue

	2017	2016	2015

Years Ended December 31, (In thousands)			
United States	$94,060	$30,942	$7,122
Europe	23,823	23,612	16,049
Asia	23,290	12,055	5,907
Brazil	2,159	488	5,004
Other	113	95	71
	$143,445	$67,192	$34,153

Property, Plant and Equipment

December 31, (In thousands)	2017	2016	2015
United States	$10,357	$9,342	$18,401
Brazil	3,357	44,153	41,093
Europe	178	240	303
	$13,892	$53,735	$59,797

17. Quarterly Results of Operations Data (Unaudited)*

Years Ended December 31, (In thousands)	2017				2016
	Fourth Quarter	Third Quarter	Second Quarter	First Quarter	Fourth Quarter
Revenue					
Renewable products	$13,445	$10,996	$9,892	$8,037	$11,215
Licenses and royalties	57,703	1,022	5,497	255	252
Grants and collaborations	9,440	12,179	10,291	4,688	10,771
Total revenue	$80,588	$24,197	$25,680	$12,980	$22,238
Gross profit (loss) from product sales	$(1,584)	$(6,641)	$(7,387)	$(4,731)	$(11,290
Net income (loss)	$(1,717)	$(33,861)	$620	$(37,371)	$(48,755
Net loss attributable to Amyris, Inc. common stockholders:					
For basic loss per share	$(2,914)	$(42,819)	$(10,265)	$(37,371)	$(48,755
For diluted loss per share	$(2,914)	$(42,819)	$(10,265)	$(37,371)	$(48,755
Net loss per share attributable to common stockholders:					
Basic	$(0.06)	$(1.14)	$(0.44)	$(1.93)	$(2.67
Diluted	$(0.06)	$(1.14)	$(0.44)	$(1.93)	$(2.67
Weighted-average shares of common stock outstanding used in computing net loss per share of common stock:					
Basic	47,895,238	37,529,694	23,155,874	19,335,948	18,227,
Diluted	47,895,238	37,529,694	23,155,874	19,335,948	18,227,

* Certain amounts rounded to reconcile to year-to-date amounts previously reported in Quarterly Reports on Form 10-Q. Amounts in columns may not sum to annual amounts presented in consolidated statements of operations, due to rounding.

18. Subsequent Events

R&D Note Extension

On March 30, 2018, the Company and Total amended the R&D Note to extend the maturity from March 31, 2018 to May 31, 2018, with accrued and unpaid interest payable on March 31, 2018 and May 31, 2018.

Senior Secured Loan Facility Extension

On March 30, 2018, the Company and Stegodon amended the Senior Secured Loan Facility to extend the date for a $5.5 million principal payment from March 31, 2018 to May 31, 2018. Under the extension, the interest rate from April 1, 2018 through the date of payment for the $5.5 million principal will be the previously agreed interest rate plus 5.0%.

DSM Value Sharing Agreement Amendment

On March 30, 2018, the Company and DSM amended the Value Sharing Agreement to provide for the use of estimates in calculating quarterly royalty (previously referred to as value share) payments (subject to true-up) and clarify how the guaranteed minimum annual royalty payment for 2018 will be offset against royalty payments accruing during 2018.

Warrants Exchange and Exercise

On April 12, 2018, the Company issued warrants to purchase an aggregate of 3,616,174 shares of common stock, exercisable at a price of $7.00 per share and for a term of fifteen months, to certain holders of the May 2017 Warrants (see Note 6, “Stockholders’ Deficit”) in exchange for such holders exercising for cash their May 2017 Cash Warrants, representing an aggregate of 3,616,174 shares issued and gross proceeds to the Company of $15.9 million, and surrendering their May 2017 Dilution Warrants, which were not currently exercisable for any shares, for cancellation, pursuant to warrant exercise agreements entered into with such holders. The new warrants have substantially similar terms to the May 2017 Cash Warrants, other than the exercise price and term, except that the new warrants do not contain any non-standard anti-dilution protection and only permit “cashless” exercise after six months and only to the extent there is no effective registration statement covering the shares issuable upon exercise. In connection with the transaction, the Company agreed that it would not issue common stock or securities convertible or exercisable into common stock, and the holders agreed to not sell any shares of common stock in excess of their pro rata share (among all holders participating in the transaction) of 30% of the daily average composite trading volume of the Company’s common stock, in each case for a period of thirty trading days.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as that term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the Exchange Act) that are designed to provide reasonable assurance that information required to be disclosed in our reports under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the U.S. Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer (CEO) and principal financial officer (CFO) and, as appropriate, to allow timely decisions regarding required disclosures.

In connection with the preparation of this Form 10-K, we carried out an evaluation under the supervision of and with the participation of management, including our CEO and CFO, as of December 31, 2017, of the effectiveness of the design and operation of our disclosure controls and procedures. Based upon this evaluation, our CEO and CFO concluded that as of December 31, 2017, our disclosure controls and procedures were not effective because of the material weakness in our internal control over financial reporting described below.

However, after giving full consideration to this material weakness, and the additional analyses and other procedures that we performed to ensure that our consolidated financial statements included in this Annual Report on Form 10-K were prepared in accordance with U.S. GAAP, our management has concluded that our consolidated financial statements included in this Annual Report on Form 10-K present fairly, in all material respects, our financial position, results of operations and cash flows for the periods disclosed in conformity with U.S. GAAP.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting and for the assessment of the effectiveness of internal control over financial reporting as defined in Rule 13a-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed by and under the supervision of our CEO and CFO and effected by our board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our consolidated financial statements for external purposes in accordance with U.S. GAAP. Our internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate.

A "material weakness" is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

Management, under the supervision of our CEO and CFO, and oversight of the Board of Directors, conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2017, based on the criteria set forth in Internal Control–Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this assessment, management has identified the material weakness described below:

- The Company's control environment was not effective because the Company lacked a sufficient number of trained resources with assigned responsibility and accountability over the design and operation of internal controls related to complex, significant non-routine transactions as well as routine transactions and financial statement presentation and disclosure;
- The Company did not have an effective risk assessment process to identify and analyze necessary changes in significant accounting policies and practices that were responsive to: (i) changes in business operations resulting from complex significant non-routine transactions, (ii) implementation of new accounting standards and related disclosures, and (iii) completeness and adequacy of required disclosures; and
- The Company did not have an effective information and communication process to ensure that the processes and controls were effectively documented and disseminated to enable financial personnel to effectively carry out their roles and responsibilities.

As a consequence, the Company did not have effective process level control activities over the following:

- The Company did not adequately design and document controls over complex, significant non-routine transactions that included various financing arrangements and a business divestiture, all which involved multiple components including revenue elements; and
- The Company's controls over account reconciliations, review and approval of manual journal entries, and timely and complete financial statement presentation and disclosure did not operate effectively

The material weakness described above resulted in material misstatements in the gain or loss on extinguishment, gain or loss from change in fair value of derivative liabilities, derivative liabilities, collaboration revenue, and additional paid-in capital in the preliminary consolidated financial statements that were corrected prior to the issuance of the consolidated financial statements as of and for the year ended December 31, 2017. However, the material weakness creates a reasonable possibility that a material misstatement of our annual or interim consolidated financial statements that would not be prevented or detected on a timely basis. Therefore, we concluded that our internal control over financial reporting is not effective as of December 31, 2017.

This annual report does not include an attestation report of the Company's registered public accounting firm due to the established rules of the Securities and Exchange Commission.

Remediation Plan

We are addressing the identified material weakness by taking the following actions:

- Augmenting our accounting staff with additional personnel, as well as evaluating our personnel in key accounting positions;
- Documenting and augmenting key policies and internal control procedures to strengthen our identification of and accounting for complex, significant non-routine transactions and routine transactions; and
- Implementing a program for training of internal staff members covering: (i) the Company's accounting policies and procedures, (ii) roles and responsibilities of the Company's finance department, and (iii) new and existing financial accounting issues.

Management believes that the foregoing efforts will effectively remediate the material weakness. As we continue to evaluate and work to improve our internal control over financial reporting, management may determine to take additional measures to address control deficiencies or determine to modify the remediation plan described above. We cannot be certain, however, that we will effectively remediate such material weakness or when we will do so, nor can we be certain of whether additional actions will be required or the costs of any such actions.

Changes in Internal Control over Financial Reporting

Except for the remediation matters discussed above in this Item 9A, there were no changes in our internal control over financial reporting during the fourth quarter of 2017 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating disclosure controls and procedures and internal control over financial reporting, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures and internal control over financial reporting must reflect the fact that there are resource constraints and that management is required to apply judgement in evaluating the benefits of possible controls and procedures relative to their costs.

ITEM 9B. OTHER INFORMATION

None.

PART III

Certain information required by Part III is omitted from this Form 10-K because the registrant will file with the U.S. Securities and Exchange Commission a definitive proxy statement pursuant to Regulation 14A of the Exchange Act in connection with the solicitation of proxies for the Company's 2018 Annual Meeting of Stockholders (the 2018 Proxy Statement) within 120 days after the end of the fiscal year covered by this Form 10-K, and certain information included therein is incorporated herein by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required under this Item 10 is incorporated by reference to the 2018 Proxy Statement, as well as set forth above under the heading "Executive Officers of the Registrant" in Part I, Item 1 of this Form 10-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required under this Item 11 is incorporated by reference to the 2018 Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required under this Item 12 is incorporated by reference to the 2018 Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required under this Item 13 is incorporated by reference to the 2018 Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required under this Item 14 is incorporated by reference to the 2018 Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedule

We have filed the following documents as part of this Form 10-K:

1. Financial Statements: See "Index to Consolidated Financial Statements" in Part II, Item 8 of this Form 10-K.

2. Financial Statement Schedule: See "Schedule II—Valuation and Qualifying Accounts" (below) within Item 15 of this Form 10-K.

3. Exhibits: See "Index to Exhibits" immediately following the signature page of this Form 10-K.

SCHEDULE II—VALUATION AND QUALIFYING ACCOUNTS

(In thousands)	Balance at Beginning of Year	Provisions	Recoveries (Write-offs), Net	Balance at End of Year
Allowance for doubtful accounts:				
Year Ended December 31, 2017	501	141	—	642
Year Ended December 31, 2016	969	—	(468)	501
Year Ended December 31, 2015	479	490	—	969

(In thousands)	Balance at Beginning of Year	Additions	Reductions/ Charges	Balance at End of Year
Deferred tax assets valuation allowance:				
Year Ended December 31, 2017	386,867	13,567	(294,877)	105,557
Year Ended December 31, 2016	360,189	26,678	—	386,867
Year Ended December 31, 2015	312,323	47,866	—	360,189

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AMYRIS, INC.

By: /s/ John G. Melo
John G. Melo
President and Chief Executive Officer
April 17, 2018

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints John G. Melo and Kathleen Valiasek, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the registrant, in the capacities and on the dates indicated.

Signature	Title	Date
/s/ John G. Melo John G. Melo	Director, President and Chief Executive Officer (Principal Executive Officer)	April 17, 2018
/s/ Kathleen Valiasek Kathleen Valiasek	Chief Financial Officer (Principal Financial Officer)	April 17, 2018
/s/ Tina Maloney Tina Maloney	Chief Accounting Officer (Principal Accounting Officer)	April 17, 2018
/s/ John Doerr John Doerr	Director	April 17, 2018
/s/ Geoffrey Duyk Geoffrey Duyk	Director	April 17, 2018
/s/ Philip Eykerman Philip Eykerman	Director	April 17, 2018
/s/ Christoph Goppelsroeder Christoph Goppelsroeder	Director	April 17, 2018
/s/ HH Sheikh Abdullah bin Khalifa Al Thani HH Sheikh Abdullah bin Khalifa Al Thani	Director	April 17, 2018
/s/ Frank Kung Frank Kung	Director	April 17, 2018
/s/ Carole Piwnica Carole Piwnica	Director	April 17, 2018
/s/ Fernando Reinach Fernando Reinach	Director	April 17, 2018

/s/ Christophe Vuillez Christophe Vuillez	Director	April 17, 2018
/s/ R. Neil Williams R. Neil Williams	Director	April 17, 2018
/s/ Patrick Yang Patrick Yang	Director	April 17, 2018

INDEX TO EXHIBITS

Exhibit No.	Description
2.01 [a]	Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
2.02	Amendment No. 1, dated December 28, 2017, to the Quota Purchase Agreement, dated November 17, 2017, among registrant, AB Technologies LLC and DSM Produtos Nutricionais Brasil S.A.
3.01	Restated Certificate of Incorporation
3.02	Certificate of Amendment, dated May 9, 2013, to Restated Certificate of Incorporation
3.03	Certificate of Amendment, dated May 12, 2014, to Restated Certificate of Incorporation
3.04	Certificate of Amendment, dated September 18, 2015, to Restated Certificate of Incorporation
3.05	Certificate of Amendment, dated May 18, 2016, to Restated Certificate of Incorporation
3.06	Certificate of Amendment, dated June 5, 2017, to Restated Certificate of Incorporation
3.07	Form of Certificate of Designation of Preferences, Rights and Limitations of Series A 17.38% Convertible Preferred Stock (found at Exhibit A-1, herein)
3.08	Form of Certificate of Designation of Preferences, Rights and Limitations of Series B 17.38% Convertible Preferred Stock (found at Exhibit A-2, herein)
3.09	Form of Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock (found at Exhibit A-3, herein)
3.10	Form of Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock (found at Exhibit E, herein)
3.11	Restated Bylaws
4.01	Specimen of Common Stock Certificate
4.02	Form of certificate representing the Series A 17.38% Convertible Preferred Stock (found at Exhibit D, herein)
4.03	Form of certificate representing the Series B 17.38% Convertible Preferred Stock (found at Exhibit D, herein)
4.04	Form of certificate representing the Series C Convertible Preferred Stock (found at Exhibit D, herein)
4.05	Form of certificate representing the Series D Convertible Preferred Stock
4.06 [a]	Amended and Restated Letter Agreement re: Certain Registration Rights dated May 8, 2014 between registrant and the purchasers listed therein
4.07	Warrant to Purchase Stock, dated December 23, 2011, issued to ATEL Ventures, Inc.
4.08 [a]	Side Letter, dated June 21, 2010, between registrant and Total Gas & Power USA, SAS
4.09	Agreement, dated February 23, 2012, among registrant, Maxwell (Mauritius) Pte Ltd, Naxyris SA, Biolding Investment S.A., and Sualk Capital Ltd.
4.10	Securities Purchase Agreement, dated February 24, 2012, among registrant and certain investment funds affiliated with Fidelity Investments Institutional Services Company, Inc. listed therein (each, a Fidelity Purchaser)
4.11	Form of Unsecured Senior Convertible Promissory Note issued by registrant to the Fidelity Purchasers in the amounts set forth next to each Fidelity Purchaser's name on Schedule I of Exhibit 4.10 hereof
4.12	Registration Rights Agreement, dated February 27, 2012, among registrant and the Fidelity Purchasers
4.13	Exchange Agreement, dated December 28, 2016, among registrant and certain Fidelity Purchasers
4.14 [c]	Form of Common Stock Purchase Agreement among registrant and certain investors
4.15	Securities Purchase Agreement, dated July 30, 2012, between registrant and Total Gas & Power USA, SAS
4.16	Registration Rights Agreement, dated July 30, 2012, between registrant and Total Gas & Power USA, SAS
4.17 [a]	

	1.5% Senior Secured Convertible Note issued July 29, 2015 (RS-9) by registrant to Total Energies Nouvelles Activités USA (f.k.a. Total Gas & Power USA, SAS)
4.18	1.5% Senior Convertible Note issued March 21, 2016 (RS-10) by registrant to Total Energies Nouvelles Activités USA
4.19	First Amendment, dated February 27, 2017, issued to 1.5% Senior Convertible Note, dated March 21, 2016 (RS-10) by registrant to Total Energies Nouvelles Activités USA
4.20	Second Amendment, dated May 15, 2017, to 1.5% Senior Convertible Note, issued March 21, 2016 (RS-10) by registrant to Total Energies Nouvelles Activités USA
4.21 [a]	Securities Purchase Agreement, dated December 24, 2012, between registrant and certain investors listed therein
4.22 [a]	Follow-On Investment Agreement, dated December 24, 2012, between registrant and Biolding Investment SA
4.23	Securities Purchase Agreement, dated March 27, 2013, between registrant and Biolding Investment SA
4.24	Securities Purchase Agreement (including Form of Tranche I Senior Convertible Note and Form of Tranche II Senior Convertible Note), dated August 8, 2013, between registrant, Maxwell (Mauritius) Pte Ltd and Total Energies Nouvelles Activités USA
4.25 [a]	Amendment No. 1, dated October 16, 2013, to the Securities Purchase Agreement, dated August 8, 2013, between registrant and other parties named therein
4.26	Tranche I Senior Convertible Note Amendment and Amendment No. 2, dated December 24, 2013, to the Securities Purchase Agreement, dated August 8, 2013, between registrant and other parties named therein

Exhibit No.	Description
4.27 [ad]	Tranche I Senior Convertible Note issued October 16, 2013 by registrant to Total Energies Nouvelles Activités USA
4.28 [ae]	Tranche II Senior Convertible Note issued January 15, 2014 by registrant to Total Energies Nouvelles Activités USA
4.29	Securities Purchase Agreement, dated September 20, 2013, between registrant and Naxyris S.A.
4.30	Securities Purchase Agreement, dated March 28, 2014 between registrant and Kuraray Co. Ltd.
4.31	Loan and Security Agreement, dated March 29, 2014 between registrant and Hercules Technology Growth Capital, Inc.
4.32	First Amendment, dated June 12, 2014, to Loan and Security Agreement, dated March 29, 2014, between registrant and Hercules Technology Growth Capital, Inc.
4.33	Second Amendment, dated March 31, 2015, to Loan and Security Agreement, dated March 29, 2014, between registrant and Hercules Technology Growth Capital, Inc.
4.34	Third Amendment, dated November 30, 2015, to Loan and Security Agreement, dated March 29, 2014, between registrant and Hercules Technology Growth Capital, Inc.
4.35	Fourth Amendment, dated October 6, 2016, to Loan and Security Agreement, dated March 29, 2014, between registrant and Stegodon Corporation, as assignee of Hercules Capital, Inc. (f.k.a. Hercules Technology Growth Capital, Inc.)
4.36	Fifth Amendment, dated January 10, 2017, to Loan and Security Agreement, dated March 29, 2014, between registrant and Stegodon Corporation, as assignee of Hercules Capital, Inc.
4.37	Sixth Amendment, dated December 28, 2017, to Loan and Security Agreement, dated March 29, 2014, between registrant and Stegodon Corporation, as assignee of Hercules Capital, Inc.
4.38	Indenture, dated May 29, 2014, between registrant and Wells Fargo Bank, National Association, as Trustee
4.39	6.50% Convertible Senior Note due 2019 issued May 29, 2014 by registrant to Morgan Stanley & Co. LLC
4.40 [f]	6.50% Convertible Senior Note due 2019, issued May 29, 2014, by registrant to Maxwell (Mauritius) Pte Ltd
4.41	Securities Purchase Agreement, dated July 24, 2015, between registrant and the Purchasers listed therein
4.42 [g]	Warrant to Purchase Stock issued July 29, 2015 by registrant to Total Energies Nouvelles Activités USA
4.43	Exchange Agreement, dated July 29, 2015, between registrant and the investors listed therein
4.44	Maturity Treatment Agreement, dated July 29, 2015, between registrant and the Investors listed therein
4.45	Letter Agreement, dated May 4, 2017, between registrant and Maxwell (Mauritius) Pte Ltd
4.46	Letter Agreement, dated May 12, 2017, between registrant and Total Raffinage Chimie S.A., as assignee of Total Energies Nouvelles Activités USA
4.47	Letter Agreement dated as of July 29, 2015 among registrant and registrant's security holders listed therein
4.48	Warrant to Purchase Stock issued July 29, 2015 by registrant to Total Energies Nouvelles Activités USA
4.49	Warrant to Purchase Stock issued July 29, 2015 by registrant to Total Energies Nouvelles Activités USA
4.50	Warrant to Purchase Stock issued July 29, 2015 by registrant to Maxwell (Mauritius) Pte Ltd
4.51	Warrant to Purchase Stock issued July 29, 2015 by registrant to Maxwell (Mauritius) Pte Ltd
4.52	Warrant to Purchase Stock issued July 29, 2015 by registrant to Maxwell (Mauritius) Pte Ltd
4.53	Indenture, dated October 20, 2015, between registrant and Wells Fargo Bank, National Association, as Trustee
4.54	9.50% Convertible Senior Note due 2019 issued October 20, 2015 by registrant to Cede & Co.
4.55	First Supplemental Indenture, dated January 11, 2017, between registrant and Wells Fargo Bank, National Association, as Trustee
4.56	9.50% Convertible Senior Note due 2019 issued January 11, 2017 by registrant to Cede & Co.
4.57	Registration Rights Agreement dated October 20, 2015 between registrant and registrant's security holders listed therein

4.58		Note and Warrant Purchase Agreement, dated February 12, 2016, between registrant and the purchasers listed therein
4.59	[h]	Unsecured Promissory Note issued February 12, 2016 by registrant to Foris Ventures, LLC
4.60	[i]	Warrant to Purchase Stock issued February 12, 2016 by registrant to Foris Ventures, LLC
4.61		First Amendment, dated May 15, 2017, to the Unsecured Promissory Note issued February 12, 2016 by registrant to Biolding Investment SA
4.62		Second Amendment, dated November 13, 2017, to the Unsecured Promissory Note issued February 12, 2016 by registrant to Biolding Investment SA
4.63		Form of Convertible Note issued May 10, 2016 by registrant to the purchaser thereof
4.64		Form of Additional Note issued September 2, 2016 and October 13, 2016 by registrant to the purchaser thereof
4.65		Note Purchase Agreement, dated June 24, 2016, between registrant and Foris Ventures, LLC
4.66		Secured Promissory Note issued June 24, 2016 by registrant to Foris Ventures, LLC
4.67		Warrant to Purchase Common Stock issued August 6, 2016 by registrant to Ginkgo Bioworks, Inc.
4.68		Note Purchase Agreement, dated October 21, 2016, between registrant and Foris Ventures, LLC

Exhibit No.	Description
4.69	Secured Promissory Note issued October 21, 2016 by registrant to Foris Ventures, LLC
4.70 [a]	Credit Agreement, dated October 26, 2016, between registrant and Guanfu Holding Co., Ltd.
4.71	Note issued December 31, 2016 by registrant to Wutian Supply Chain Corporation Limited
4.72	Note Purchase Agreement, dated October 27, 2016, between registrant and Ginkgo Bioworks, Inc.
4.73	Secured Promissory Note issued October 27, 2016 by registrant to Ginkgo Bioworks, Inc.
4.74	Secured Promissory Note issued April 13, 2017 by registrant to Ginkgo Bioworks, Inc.
4.75	Warrant to Purchase Stock issued November 16, 2016 by registrant to Nenter & Co., Inc.
4.76	Form of Convertible Note issued December 2, 2016 by registrant to the purchaser thereof (found at Exhibit A, herein)
4.77	Purchase Money Promissory Note issued December 5, 2016 by registrant to Salisbury Partners, LLC
4.78	Purchase Money Promissory Note issued December 19, 2016 by registrant to Nikko Chemicals Co. Ltd.
4.79	Form of Convertible Note issued April 17, 2017 by registrant to the purchaser thereof (found at Exhibit A, herein)
4.80	Form of Amended and Restated December 2016 Note (found at Exhibit A, herein)
4.81	Form of Amended and Restated April 2017 Note issued June 30, 2017 and December 5, 2017 by registrant to the purchaser thereof (found at Exhibit B, herein)
4.82	Form of Common Stock Purchase Warrant (Cash Warrant) issued May 11, 2017 by registrant to the purchasers thereof (found at Exhibit C-1, herein)
4.83	Form of Common Stock Purchase Warrant (Dilution Warrant) issued May 11, 2017 by registrant to the purchasers thereof (found at Exhibit C-2, herein)
4.84	Form of Common Stock Purchase Warrant (Cash Warrant) issued August 7, 2017 by registrant to DSM International B.V. (found at Exhibit B-1, herein)
4.85	Form of Common Stock Purchase Warrant (Dilution Warrant) issued August 7, 2017 by registrant to DSM International B.V. (found at Exhibit B-2, herein)
4.86	Form of Common Stock Purchase Warrant (Cash Warrant) issued August 3, 2017 by registrant to affiliates of Vivo Capital LLC (found at Exhibit A herein)
4.87	Form of Common Stock Purchase Warrant (Dilution Warrant) issued August 3, 2017 by registrant to affiliates of Vivo Capital LLC (found at Exhibit B, herein)
4.88	Form of Stockholder Agreement dated August 3, 2017 between registrant and affiliates of Vivo Capital LLC (found at Exhibit C, herein)
4.89	Voting Agreement, dated May 4, 2017, between registrant and Total Raffinage Chimie
4.90	Voting Agreement, dated May 5, 2017, between registrant and Maxwell (Mauritius) Pte Ltd
4.91	Voting Agreement, dated May 8, 2017, between registrant and the investors listed therein
4.92	Common Stock Purchase Warrant (Cash Warrant), issued May 31, 2017, by registrant to the investor named therein
4.93	Common Stock Purchase Warrant (Dilution Warrant), issued May 31, 2017, by registrant to the investor named therein
4.94 [a]	Stockholder Agreement, dated May 11, 2017, between registrant and DSM International B.V.
4.95 [a]	Amended and Restated Stockholder Agreement, dated August 7, 2017, between registrant and DSM International B.V.
4.96	Promissory Note issued November 13, 2017 by registrant to Ginkgo Bioworks, Inc.
4.97	Note issued December 28, 2017 by registrant to DSM Finance BV
10.01 [aj]	Agreement for Credit Opening, dated November 16, 2011, between Amyris Brasil Ltda. and Banco Nacional de Desenvolvimento Econômico e Social - BNDES
10.02 [aj]	

		Amendment No. 1, dated June 28, 2013 to Agreement for Credit Opening, dated November 16, 2011, between Amyris Brasil Ltda. and Banco Nacional de Desenvolvimento Econômico e Social - BNDES
10.03	aj	Amendment No. 2, dated September 16, 2015, to Agreement for Credit Opening, dated November 16, 2011, between Amyris Brasil Ltda. and Banco Nacional de Desenvolvimento Econômico e Social - BNDES
10.04	a	Corporate Guarantee, dated November 28, 2011, issued by registrant to Banco Nacional de Desenvolvimento Econômico e Social - BNDES
10.05	j	Bank Credit Agreement, dated December 21, 2011, between Amyris Brasil Ltda. and Banco Pine S.A.
10.06	j	Addendum to the Banking Credit Form, dated February 17, 2012, between Amyris Brasil Ltda. and Banco Pine S.A.
10.07	j	Addendum to the Banking Credit Form, dated May 17, 2012, between Amyris Brasil Ltda. and Banco Pine S.A.
10.08	j	Note of Bank Credit, dated June 21, 2012, between Amyris Brasil Ltda. and Banco Pine S.A.
10.09	aj	Global Derivatives Contract (swap agreement), dated June 15, 2012, between Amyris Brasil Ltda. and Banco Pine S.A.
10.10	j	Global Derivatives Contract Annex, dated October 8, 2015, between Amyris Brasil Ltda. and Banco Pine S.A. (AB as purchaser)
10.11	j	Global Derivatives Contract Annex, dated October 8, 2015, between Amyris Brasil Ltda. and Banco Pine S.A. (Pine as purchaser)
10.12	aj	Note of Bank Credit, dated July 13, 2012, between Amyris Brasil Ltda. and Nossa Caixa Desenvolvimento

Exhibit No.	Description
10.13 [aj]	Note of Bank Credit, dated July 13, 2012, between Amyris Brasil Ltda. and Banco Pine S.A.
10.14 [j]	Fiduciary Conveyance of Movable Goods Agreement, dated July 13, 2012, among Amyris Brasil Ltda., Nossa Caixa Desenvolvimento and Banco Pine S.A.
10.15	Corporate Guarantee, dated July 13, 2012, issued by registrant to Nossa Caixa Desenvolvimento
10.16	Corporate Guarantee, dated July 13, 2012, issued by registrant to Banco Pine S.A.
10.17 [j]	Credit Facility Agreement, dated October 11, 2010, between Financiadora de Estudos E Projetos – FINEP and Anyris Brasil S.A.
10.18	Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.19	First Amendment, dated March 10, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.20	Second Amendment, dated April 25, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.21	Third Amendment, dated July 31, 2008, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.22	Fourth Amendment, dated November 14, 2009, to Lease, dated August 22, 2007, between registrant and ES East Associates, LLC
10.23	Fifth Amendment, dated October 15, 2010, to Lease, dated August 22, 2007, between registrant and ES East, LLC
10.24	Sixth Amendment, dated April 30, 2013, to Lease, dated August 22, 2007, between registrant and ES East, LLC
10.25	Lease dated April 25, 2008 between registrant and EmeryStation Triangle, LLC
10.26	Letter, dated April 25, 2008, amending Lease between registrant and EmeryStation Triangle, LLC
10.27	Second Amendment, dated February 5, 2010, to Lease, dated April 25, 2008, between registrant and EmeryStation Triangle, LLC
10.28	Third Amendment, dated May 1, 2013, to Lease, dated April 25, 2008, between registrant and EmeryStation Triangle, LLC
10.29	Pilot Plant Expansion Right Letter dated December 22, 2008 between registrant and EmeryStation Triangle, LLC
10.30	Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. and Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.31	First Amendment, dated July 31, 2015, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. and Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.32	Second Amendment, dated October 31, 2015, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. and Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.33	Third Amendment, dated March 30, 2016, to Lease Agreement, dated August 10, 2011, between Amyris Brasil Ltda. and Techno Park Empreendimentos e Administração Imobiliária Ltda.
10.34	Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, between Lucio Tomasiello and Amyris Brasil S.A. (including Amendment No. 1, dated July 5, 2008, and Amendment No. 2, dated October 30, 2008)
10.35 [aj]	Third Amendment, dated October 1, 2012, to the Private Instrument of Non Residential Real Estate Lease Agreement, dated March 31, 2008, between Lucio Tomasiello and Amyris Brasil Ltda.
10.36 [aj]	Fourth Amendment, dated March 3, 2015, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, by and among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.37 [j]	

		Fifth Amendment, dated September 22, 2015, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, by and among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.38	[j]	Sixth Amendment, dated October 17, 2016, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, by and among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.39		Seventh Amendment, dated September 25, 2017, to the Private Instrument of Non-Residential Real Estate Lease Agreement, dated March 31, 2008, by and among Amyris Brasil Ltda., Lucius Tomasiello and Mauricio Tomasiello
10.40	[j]	Lease Agreement, dated May 1, 2010, between São Martinho S/A and SMA – Industria Quimca S/A
10.41	[j]	Amendment No. 2, dated August 31, 2015, to the Lease Agreement, dated May 1, 2010, between São Martinho S/A, SMA – Industria Quimca
10.42	[j]	Amendment No. 3, dated September 1, 2016, to the Lease Agreement, dated May 1, 2010, between São Martinho S/A, SMA – Industria Quimca Ltda. (f.k.a. SMA Indústria Química S.A.)
10.43	[j]	Amendment No. 4, dated December 26, 2017, to the Lease Agreement, , dated May 1, 2010, between São Martinho S/A, SMA – Industria Quimca, Ltda.
10.44		At Market Issuance Sales Agreement, dated March 8, 2016, among registrant, FBR Capital Markets & Co. and MLV & Co. LLC
10.45		Securities Purchase Agreement, dated April 8, 2016, between registrant and the Bill & Melinda Gates Foundation
10.46		Letter Agreement re Charitable Purposes and Use of Funds, dated April 8, 2016, between registrant and the Bill & Melinda Gates Foundation
10.47		Form of Securities Purchase Agreement, dated May 10, 2016, between registrant and the other party thereto
10.48	[a]	Initial Strategic Partnership Agreement, dated June 28, 2016, between registrant and Gingko Bioworks, Inc.
10.49	[a]	Collaboration Agreement, dated September 30, 2016, between registrant and Ginkgo Bioworks, Inc.

Exhibit No.	Description
10.50 [b]	Partnership Agreement, dated October 20, 2017, between registrant and Ginkgo Bioworks, Inc.
10.51	Purchase and Sale Agreement, dated November 10, 2016, among registrant, Glycotech, Inc., and Salisbury Partners, LLC
10.52 [a]	Cooperation Agreement, dated October 26, 2016, between registrant and Nenter & Co., Inc.
10.53 [a]	Letter Agreement, dated April 23, 2017, terminating Cooperation Agreement, dated October 26, 2016, between registrant and Nenter & Co., Inc.
10.54	Form of Securities Purchase Agreement, dated December 2, 2016, between registrant and the other party thereto
10.55	Form of Securities Purchase Agreement, dated April 17, 2017, between registrant and the other party thereto
10.56	Form of Amendment Agreement, dated May 2, 2017, between registrant and the other party thereto
10.57	Form of Securities Purchase Agreement, dated May 8, 2017, between registrant and the other parties thereto
10.58	Amendment No. 1, dated May 30, 2017 to Securities Purchase Agreement, dated May 8, 2017, between registrant and the other parties thereto
10.59	Securities Purchase Agreement, dated May 31, 2017, between registrant and the investor named therein
10.60	Engagement Letter, dated April 18, 2017, by and between registrant and Rodman & Renshaw, a unit of H.C. Wainwright & Co., LLC
10.61	Amendment, dated May 9, 2017, to Engagement Letter, dated as of April 18, 2017, by and between registrant and Rodman & Renshaw, a unit of H.C. Wainwright & Co., LLC
10.62	Form of Security Holder Agreement, dated May 8, 2017, between registrant and the other parties thereto
10.63	Securities Purchase Agreement, dated August 2, 2017, between registrant and DSM International B.V.
10.64	Securities Purchase Agreement, dated August 2, 2017, among registrant, Vivo Capital Fund VIII, L.P. and Vivo Capital Surplus Fund VIII, L.P.
10.65	Credit Agreement, dated December 28, 2017, between registrant and DSM Finance BV
10.66 [a]	Joint Venture Agreement, dated December 12, 2016, among registrant, Nikko Chemicals Co. Ltd., and Nippon Surfactant Industries Co., Ltd.
10.67 [a]	First Amended and Restated LLC Operating Agreement of Aprinnova, LLC (f.k.a. Neossance, LLC) dated December 6, 2016
10.68 [k]	Offer Letter dated September 27, 2006 between registrant and John Melo
10.69 [k]	Amendment, dated December 18, 2008, to Offer Letter, dated September 27, 2006, between registrant and John Melo
10.70 [k]	Offer Letter, dated September 30, 2008, between registrant and Joel Cherry
10.71 [k]	Amendment, dated December 19, 2008, to Offer Letter, dated September 30, 2008, between registrant and Joel Cherry
10.72 [k]	Offer Letter, dated October 23, 2014, between registrant and Raffi Asadorian
10.73 [k]	Offer Letter, dated November 23, 2016, between registrant and Kathleen Valiasek
10.74 [kl]	Amendment, dated March 6, 2017, to Offer Letter, dated November 23, 2016, between registrant and Kathleen Valiasek
10.75 [k]	Offer Letter, dated June 5, 2017, between registrant and Nicole Kelsey
10.76 [k]	Amendment, dated September 18, 2017, to Offer Letter, dated June 5, 2017, between registrant and Nicole Kelsey
10.77 [k]	Offer Letter, dated October 5, 2017, between registrant and Eduardo Alvarez
10.788 [k]	2005 Stock Option/Stock Issuance Plan, as amended on July 19, 2011
10.79 [k]	Form of Notice of Grant of Stock Option under registrant's 2005 Stock Option/Stock Issuance Plan
10.80 [k]	Form of Notice of Grant of Stock Option (non-Exempt) under registrant's 2005 Stock Option/Stock Issuance Plan

10.81	k	Form of Notice of Grant of Stock Option (non-US) under registrant's 2005 Stock Option/Stock Issuance Plan
10.82	k	Form of Stock Option Agreement under registrant's 2005 Stock Option/Stock Issuance Plan
10.83	k	Form of Stock Option Agreement (non-US) under registrant's 2005 Stock Option/Stock Issuance Plan
10.84	k	Form of Stock Purchase Agreement under registrant's 2005 Stock Option/Stock Issuance Plan
10.85	k	Form of Stock Purchase Agreement (non-US) under registrant's 2005 Stock Option/Stock Issuance Plan
10.86	k	2010 Equity Incentive Plan and forms of award agreements thereunder
10.87	k	2010 Employee Stock Purchase Plan and form of subscription agreements thereunder
10.88	k	Amendment Number One, dated, February 16, 2017, to registrant's 2010 Employee Stock Purchase Plan
10.89	k	Executive Severance Plan, effective November 6, 2013
10.90	k	Compensation arrangements between registrant and its non-employee directors
10.91	k	Compensation arrangements between registrant and its executive officers
10.92	k	Form of Indemnity Agreement between registrant and its directors and executive officers
16.1		Letter of PricewaterhouseCoopers LLP dated June 15, 2017
21.01		List of subsidiaries

Exhibit No.	Description
23.01	Consent of KPMG LLP, independent registered public accounting firm
23.02	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm
24.01	Power of Attorney (included on signature page to this Form 10-K)
31.01	Certification of Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(c) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.02	Certification of Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(c) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.01 [m]	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.02 [m]	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
99.1	Section 13(r) Disclosure
101 [n]	The following materials from registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2017, formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Statements of Operations; (ii) the Consolidated Balance Sheets; (iii) the Consolidated Statements of Comprehensive Income; (iv) the Consolidated Statements of Convertible Preferred Stock, Redeemable Noncontrolling Interest and Equity (Deficit); (v) the Consolidated Statements of Cash Flows; and (vi) Notes to Consolidated Financial Statements

a Portions of this exhibit, which have been granted confidential treatment by the Securities and Exchange Commission, have been omitted.

b Portions of this exhibit have been omitted pending a determination by the Securities and Exchange Commission as to whether these portions should be granted confidential treatment.

c Substantially identical Common Stock Purchase Agreements, each dated May 18, 2012, were entered into with five separate investors. Registrant has filed the form of such Common Stock Purchase Agreements, which is substantially identical in all material respects to all of such Common Stock Purchase Agreements, except as to the parties thereto and the number of shares being purchased.

d Registrant issued substantially identical 5% Unsecured Convertible Notes (the "5% Notes") to Total Gas & Power USA, SAS (“Total’), FIAM Target Date Large Cap Stock Commingled Pool (formerly known as Fidelity Pyramis Lifecycle Large Cap Stock Commingled Pool. Fidelity Variable Insurance Products Fund Ill: Growth & Income Portfolio, Fidelity Hastings Street Trust: Fidelity Advisor Series Growth & Income Fund. Fidelity Securities Fund: Fidelity Growth & Income Portfolio Fidelity Hastings Street Trust: Fidelity Series Growth & Income Fund. Fidelity Commonwealth Trust: Fidelity Large Cap Stock Fund, and Maxwell (Mauritius) Pte Ltd on October 16. 2013. Registrant has filed the 5% Note issued to Total. and has included with Exhibit 4.04 a schedule (Schedule A to Exhibit 4.04 of registrant’s Form 10-Q filed on May 9, 2014) identifying each of the 5% Notes and setting forth the material detail in which the other 5% Note(s) differ from the filed 5% Note (i.e. the Purchasers. the amounts of the 5% Notes. and the conversion price).

e Registrant issued substantially identical 10% Unsecured Convertible Notes (the" 10% Notes") to Total Wolverine Flagship Fund Trading Limited and Maxwell (Mauritius) Pte Ltd on January 15 2014. Registrant has filed the 10% Note issued to Total and has included with Exhibit 4.06. a schedule (Schedule A to Exhibit 4.06 of registrant’s Form 10-Q filed on May 9, 2014) identifying each of the 10% Notes and setting forth the material details in which the other 10% Note(s) differ from the filed 10% Note (i.e. the purchasers and the amounts of the 10% Notes).

f Registrant issued substantially identical 6.50% Senior Convertible Notes due 2019 (the "6.50% Notes") to Maxwell (Mauritius) Pte Ltd. ("Temasek"), Total Energies Nouvelles Activités USA, and Foris Ventures, LLC on May 29, 2014. Registrant has filed the 6.50% Note issued to Temasek, and has included, with such exhibit, a schedule (Schedule A to Exhibit 4.03 of registrant's Form 10-Q filed August 8, 2014) identifying each of the 6.50% Notes and setting forth the material details in which the other 6.50% Notes differ from the filed 6.50% Note (i.e., the note number, the purchasers, and the amounts of the 6.50% Notes).

g Registrant issued substantially identical warrants to the purchasers under that certain Securities Purchase Agreement entered into on July 24, 2015~ Registrant has filed the warrant issued to Total Energies Nouvelles Activites USA and has included with such Exhibit a schedule (Schedule A to Exhibit 4.03 of registrants Form 10-Q filed on August 8, 2015) identifying each of the warrants and setting forth the material details in which the other warrants differ from the filed form of warrant (i.e. the names of the purchasers. the certificate numbers and the respective amounts of shares underlying the warrants).

h Substantially identical Unsecured Promissory Notes were entered into with three separate investors. Registrant has filed the Note entered into by registrant and Foris Ventures LLC, which is substantially identical in all material respects to all of such Notes except as to the parties thereto, the issue date and the value of the Notes.

i Substantially identical Warrants to Purchase Stock were entered into with three separate investors. Registrant has filed the Warrant entered into by registrant and Foris Ventures LLC, which is substantially identical in all material respects to all of such Warrants, except as to the parties thereto, the issue date and the amount of underlying shares.

j Translation to English from Portuguese or Dutch, as applicable, in accordance with Rule 12b-12(d) of the regulations promulgated by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended (the "Exchange Act").

k Indicates management contract or compensatory plan or arrangement.

l Originally filed as Exhibit 10.08 to registrant's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017, but contained a non-substantive typographical error. The contents of such exhibit were described in registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 10, 2017.

m This certification shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liability of that Section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

n Pursuant to applicable securities laws and regulations, registrant is deemed to have complied with the reporting obligation relating to the submission of interactive data files in such exhibits and is not subject to liability under any anti-fraud provisions of the federal securities laws as long as registrant has made a good faith attempt to comply with the submission requirements and promptly amends the interactive data files after becoming aware that the interactive data files fails to comply with the submission requirements. These interactive data files are not deemed filed or part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act, are not deemed filed for purposes of section 18 of the Exchange Act and are not otherwise subject to liability under these sections.