About Solena Fuels,

Solena Fuels (Solena) is a next generation zero emission bioenergy company that has developed integrated end-to-end solutions that would help satisfy the world's growing energy demands while reducing the greenhouse gas emissions and high expense normally associated with the usage of fossil fuel-based energy. Solena's suite of integrated solutions includes patented plasma gasification technology that is Six Sigma optimized after more than ten years of development, an integrated plasma gasification combined cycle process, and a CO_2 capture-to-algae growth and harvesting system.

Using its proprietary technology, Solena Fuels has developed a synthetic fuels solution and business model that addresses the historical challenges faced by the biofuels market. Solena Fuels' synthetic fuel is a "drop-in" fuel that allows airlines and shipping companies to utilize a sustainable energy source without any changes to their engines or infrastructure. This proprietary technology allows Solena to use a wide variety of heterogeneous waste feedstocks that do not compete with crops or use water. We partner with the end users of our fuel to develop a facility that allows them to sustainably operate their business.

Solena Q NRG is a joint venture between ABSi Corporation and the Solena Group focused on developing renewable energy solutions for the United States Public Sector market. Formed to harness the energy contained in biomass and other organic wastes to produce power and bio-fuels in a clean, responsible and renewable way that preserves the environment, empowers America's communities, provides green jobs and increases energy security in the United States, Solena Q will lead the development of projects deploying Solena's next generation plasma gasification technologies. Solena Q NRG is the second joint venture between ABSi Corporation and the Solena Group. Solena-ABSi India Private Limited (SAIP) was established in 2008 to bring clean energy from organic waste materials to the communities of India. Projects are under development in New Delhi, rural India and Sri Lanka. ABSi Corporation is headquartered in Rockville, MD and provides technology services and energy solutions, helping both government and commercial organizations achieve technology goals and business objectives. ABSi's domain focus comprises large-scale enterprise computing, healthcare IT and cyber-security, and renewable energy.

About ARCADIS

In 2009, Malcolm Pirnie, Inc. merged with ARCADIS U.S., Inc. ARCADIS is an international company providing consultancy, design, engineering and management services in infrastructure, water, environment and buildings. We enhance mobility, sustainability and quality of life by creating

balance in the built and natural environments. ARCADIS develops, designs, implements, maintains and operates projects for companies and governments. With 16,000 employees and more than $2.7 billion in revenues, the company has an extensive international network supported by strong local market positions. ARCADIS supports UN-HABITAT with knowledge and expertise to improve the quality of life in rapidly growing cities around the world. Visit us at: www.arcadis-us.com ARCADIS has extensive Federal experience and has been working for the Department of Defense (DOD) since World War II, when the entire firm was dedicated to the build-up in support of the war effort. We have successfully managed task order assignments in excess of $500M involving over 20 Corps Districts during the last 10 years and completing projects at over 350 Army installations including numerous OCONUS locations. All of ARCADIS' ACASS ratings are satisfactory with 88% recorded as "Outstanding" or "Very Good". Arcadis is also currently undertaking several high-profile Federal assignments that include work for the DLA's Energy division (former Defense Energy Supply Center) on a multi-million dollar technology study to develop deployable alternative fuels solutions to reduce current DOD's petroleum consumption and maximize alternative fuel sources. Similarly, for the DOE's National Renewable Energy Lab (NREL) R&D program, they are evaluating alternative and renewable energy technologies for application across a wide infrastructure, including cutting-edge uses of solar, wind, biomass and geothermal systems.

1. Current and future production capabilities, including pilot-scale capability.

Solena Fuels is developing several next generation, patented Solena Plasma Gasification and Vitrification (SPGV) Biomass to Liquid ("BTL") biofuel plants or Integrated Biorefineries within the United States, Europe, South America and Australia. All Solena biofuel projects are privately financed, but seek Federal Loan Guarantees when available. Each plant requires 24 months to construct. Over that period, approximately 1500 construction workers will be hired. The permanent staff is approximately 175.

Solena Fuels' BTL facilities are designed to process approximately 592,000 tons annually of a biomass waste or Refuse Derived Fuel (RDF) to generate 25 million gallons per year ("mmgy") of sustainable aviation fuel or FT diesel for marine use and bionaphtha as well as 33 MW net of baseload renewable electricity, which can be exported to the grid. Of the 25 million gallons, 16 million gallons are FT bio-jet fuel or FT diesel and 9 million gallons are bio-naphtha, which can be used for a variety of applications in the biochemical and petrochemical industries.

In the United States, two BTL plants are in advanced stages of development. The first of these BTL plants, to be sited in Gilroy, CA, which has the aforementioned throughput and production capacity. This project is tied to the project development efforts spearheaded by Solena, which led, in July 2011, to Solena signing a Letter of Intent (LOI) with ten leading air carriers, including (i) eight members of the Air Transport Association of America (ATA): United Airlines (UA), American Airlines (AA), Federal Express (FX), Air Canada (AC), Southwest Airlines (WN), Alaska Airlines (AS), JetBlue Airways (B6) and US Airways (US); (ii) Lufthansa; and (iii) Frontier Airlines. This LOI sets forth the air carriers' intention to purchase all the sustainable aviation fuel produced by Solena's BTL facility, which the airlines can use at the San Francisco, San Jose, and Oakland airports. A second project, located in a large Midwestern city, has been under development by Solena for two years. Midwest project partners include General Electric, the local utility (which is a public charitable trust), Arcadis and other

highly reputable American technology and equipment supplier conglomerates. The project is slated to be one of the largest clean energy biomass and biosteam facilities in the United States and will be announced in the fall of 2011. A third project involving a Solena BTL plant in the US northeast is in discussions for the production of sustainable FT diesel for a leading global shipping company.

Internationally, BTL projects are being developed in Europe, Australia, South America and India. Most notably, Solena has an agreement with British Airways for the development of Europe's first bio-jet fuel plan that will produce, as above, 25 mmgy of sustainable FT biofuels and 33 MW of exportable baseload electricity. British Airways has committed to be an investor in this project. The British Airways BTL facility is scheduled to commence construction in 2012 and will be commissioned in 2014. In Australia, Qantas Airways Limited has partnered with Solena to build a similar BTL plant to convert RDF into bio-jet fuel. A third plant is being planned in a large central European city with one of Europe's most important air carriers. Additional discussions underway in Asia include other major Asian airline companies.

In addition to FT bio-jet fuel, the Solena Fuels business model also includes production of sustainable FT marine diesel. As such, Solena is in discussions with a major global shipper to provide FT diesel from BTL or Integrated Biorefinery plants that would be produced at or near ports in the United States, South America and Africa. Solena also is confident that sustainable FT marine diesel produced from locally sourced RDF and with net zero CO_2 emissions will enhance US energy security and have great appeal to the U.S. Navy as it plans to field a carrier strike group powered by biofuel by 2016 and moves toward supplying half of its energy needs with renewable sources by 2020.

Pilot scale capability

The core and distinct element of Solena's Biomass to Liquid (BTL) solution is the Solena Plasma Gasification and Vitrification (SPGV) reactor, operating on any type of biomass including waste. In addition Solena's strategic BTL solution partners include a world-leading, US-based FT technology provider, and a highly reputable and experienced FT product upgrading and refining conglomerate.

More than 10 years of developing, pilot testing and refining the SPGV technology and solutions have allowed Solena's team to collect, compile and analyze a significant amount of material and operating data. The Company has used this data to design, develop and patent its proprietary solutions including its steady state gasification computer model in order to simulate system performance and design control systems to regulate and monitor each BioEnergy Plant. Solena's technical team has been continuously extending its know-how and intellectual property through a strong R&D strategy. Solena gained experience in gasification by means of two pilot facilities. Solena's patents are based on the knowledge developed during tests campaigns at these facilities.

Raleigh, North Carolina Test Facility

Solena first tested several types of materials in 1996 at a test facility at Research Triangle Park, North Carolina. Tests performed at this facility showed a very high specific energy

requirement (SER) of about 1,000 kWh per ton of waste treated. This phenomenon was due to the fact that all of the plasma energy contained in the plasma jet was directly pointed to the waste. Consequently, in order to break down the chemical bonds of the waste, physical elements of waste had to be in direct contact with the plasma jet to properly gasify it. These tests and/or treatment periods were performed on behalf of clients (public or private) and in conjunction with research and development efforts. Several feedstock streams were treated and gasified by the plasma systems, which will be outlined in section 2.5.

Madison, PA Pilot Plant Facility

In conjunction with the Westinghouse Plasma Center, Solena validated a revolutionary process to enhance its gasification efficiency, in terms of syngas composition and energy efficiency. This R&D effort resulted in a new gasification process and reactor design. The testing was conducted in 2000 at the former Westinghouse demonstration facility located near Madison, PA in 2000. As a result of this research, specific equipment was used in the gasifer for uniform distribution of the plasma heat across the gasifier's cross-section. Operating parameters such as plasma power, biomass feed rate, enriched-air feed rate, and others have been optimized, resulting in an optimized syngas composition, suitable for numerous industrial applications and lower costs of operation. Equally important, process flow rates were large enough to provide reliable scale-up for commercial plants.

Commercial Testing and Other Relevant Pilots

A key result of Solena's pilots and subsequent computer modeling was establishing and documenting the high quality and stability of the bio-syngas produced by Solena's patented SPGV process. Working with its strategic technology partners, Solena's BioSynGas has been determined to be a suitable feed for the FT process. Solena's Fischer-Tropsch partner currently operates a demonstration facility in the US producing 400 gallons per day of certified Synthetic Paraffinic Kerosene ("SPK") that has been certified to meet ASTM D7566 standard specifications for aviation fuels as a 50/50 blend with fossil-based jet fuel.

Siting: Rationale on where such facilities could be best sited

Currently, Solena and its U.S. public sector development partner, Solena Q, is targeting locations near high-traffic airports with airlines that will purchase the bio-jet fuel off-take, large municipalities, strategically located rural locations, and military facilities and installations that have already benefitted, or stand to benefit from, the Base Realignment and Closure (BRAC) process. From discussions with the Defense Logistics Agency (DLA), Solena understands that minimizing fuel transportation costs is a priority, thus making proximity to major airports, pipelines that can transport bio-jet fuel, refineries and military installations, important strategic business considerations.

Since Solena's plants are feedstock flexible and predominantly use waste products as well as other agricultural material, they are not limited in location as other biomass plants that rely on a specific type of feedstock may be. Solena is undertaking projects in locations where there is a combination of local demand, well-developed community relationships, value-adding business partners and commercial entities that will purchase the biofuel products along with

municipalities, rural jurisdictions and military installations. Solena is in active discussions with local authorities in Hawaii to implement a strategic bio-fuel project and has had some discussions with the U.S. Navy at Pearl Harbor.

2. **Future plans to build/expand/retrofit, including ability to finance, a rationale on where such facilities could be best sited, and identification of the major biomass feedstocks that could be employed**

As previously indicated, Solena has signed letters of intent/memorandum of understanding for 11 Solena BTL plants. Additional plants in the United States beyond the Gilroy, CA and Midwest projects are also envisioned for both military and commercial customers and municipalities and rural areas. (Please see discussion below of State and Local Policies and Incentives). The Midwest project would involve retrofitting existing infrastructure for the production of steam for industrial customers. Rural-based Solena BTL plants would require both a long-term supply of waste biomass or RDF and/or agricultural waste feedstock and 15 to 18 acres of land for the same period. Solena is also open to the possibility of siting a facility at a military base under an Enhanced Use Lease arrangement.

The ability to finance any of the referenced Solena projects in development and any future projects (whether as a new build or a retrofit), ultimately depends on whether an economically acceptable, long-term feedstock supply agreement, offtake fuels agreement and power purchase agreement can be secured. Solena currently seeks to enter into long-term contracts of at least 10 years to ensure bankability of the projects. Solena is confident that, based on its current economic modeling and plant design, it can offer highly competitive pricing for its green and sustainable outputs, independent of spot price volatility.

Currently, Solena and its US government development partner, Solena Q, is targeting locations near high-traffic airports with airlines that will purchase the bio-jet fuel off-take, large municipalities, strategically located rural locations, and military facilities and installations that have already benefitted, or stand to benefit from, the Base Realignment and Closure (BRAC) process. From discussions with the Defense Logistics Agency (DLA), Solena understands that minimizing fuel transportation costs is a priority, thus making proximity to major airports, pipelines that can transport bio-jet fuel, refineries and military installations, important strategic business considerations.

The feedstock streams that can be used for the Solena process include:

- Biomass;
- Municipal solid waste;
- Out-of-use tires;
- Hospital waste;
- Landfill material;
- Agricultural waste
- Industrial waste
- Mixed source biomass and waste (different biomass sources with MSW, tires, etc.)

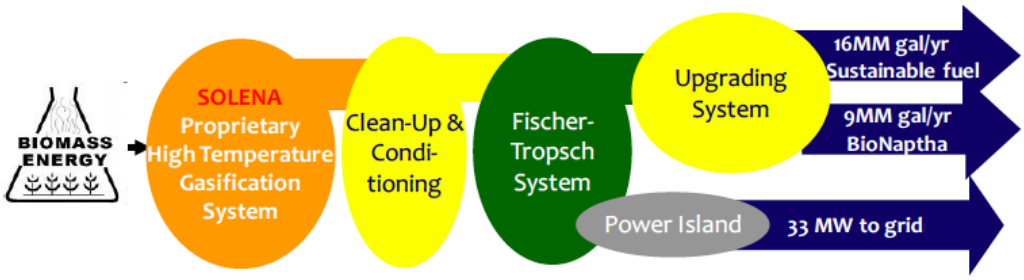
3. **General description of your conversion technology, a description of your existing or contemplated end-to-end supply chain, any partnerships contemplated or required to**

obtain feedstocks and plans for moving forward to establish relationships to assure sufficient feedstock supply, plans for the blending of the biofuel component with conventional petroleum products, and plans to provide final delivery of blended fuels.

Technology Description

Solena's BTL solution consists of five integrated processing "islands": (i) Solena's proprietary high-temperature gasification; (ii) a BioSynGas conditioning island; (iii) a Fischer-Tropsch ("FT") processing island; (iv) a FT wax upgrading island; and (v) a power production block.

Each of the processing islands comprising the BTL Facility are illustrated in the figure below and described hereunder.



The BTL facilities are designed to process 592,000 metricTons/year of biomass feedstock to produce (i) sixteen million gallons of sustainable aviation or marine fuel; (ii) nine million gallons of sustainable naphtha; and (iii) 33 MW of baseload electricity that are exported/sold to the grid.

Solena Proprietary High Temperature Gasification Island

The first processing block in Solena's BTL solution is its proprietary high temperature gasification system. This processing block converts the solid biomass feedstock into a combustible gas fuel called BioSynGas. In order to achieve this, the feedstock is fed into Solena's proprietary gasification vessels ("SPGV") where it is subjected to extremely high temperatures. The SPGV vessels are plasma-enhanced counter-current fixed bed gasifiers. These high temperatures are generated by a plasma heating system, which is one key features of Solena's gasification process. Another key aspect of Solena's proprietary gasification process is the use of a catalytic bed, which distributes the heat from the plasma torches evenly and is the reason for the stable operation and lower power consumption of the system. The result of applying the high temperatures to the solid feedstock is that the solid organic matter (i.e. wood, paper, plastics, food, etc.) depolymerizes into its most elemental atoms, which then recombine to form the BioSynGas. At the same time, the inert materials such as metals that may be entrained in the feedstock and the inert fraction of the feedstock melt under the high temperatures and exit the SPGV as molten lava, which after cooling becomes an inert basaltic rock called "slag". This slag, which is five times less leachable than bottle glass and comprises less than 7 percent of output, can be safely used as construction material with numerous commercial applications (e.g., road fill, concrete mix, bricks, tiles, etc.).

This process is also known as “thermal de-polymerization of organic materials and melting of inorganic materials by means of high temperature plasma energy” and is Solena’s patented gasification system.

As the conversion of any carbon-based material is in excess of 99%, the efficiency of these systems is very high. This is a particular benefit of the SPGV process: a highly cost-effective and technically efficient thermal de-polymerization process.

BioSynGas Conditioning Island

Upon exiting the Gasification Island, the raw BioSynGas is sent to the BioSynGas Conditioning Island. Although the raw BioSynGas is free of tar, soot, dioxins and furans, it does contain moisture and acid compounds that can be recovered, ensuring the BioSynGas meets the specifications of the Fischer-Tropsch system. The conditioning process is carried out in several steps in the BioSynGas Conditioning Island. The first step consists on lowering the temperature of the raw BioSynGas by quenching it with water, which makes the BioSynGas more manageable and less corrosive to the downstream equipments. Then, any remaining heat in the gas is recovered and used to generate steam, which is later used to produce additional power in the Power Production Block. Once the BioSynGas has been sufficiently cooled, its acid components are scrubbed off. This is done using off-the-shelf scrubbers vessels that essentially ‘shower’ the gas with process water and / or a solution to remove and recover the acid compounds. Finally, the moisture accumulated in the BioSynGas is removed using a series of filters and moisture separators. At this point, the BioSynGas is free of all pollutants, moisture and acid compounds and is also known as ‘sweet & dry’ BioSynGas. The conditioned sweet & dry BioSynGas meeting all required specifications is then sent to the Fischer-Tropsch processing Island.

Fischer-Tropsch Processing Island

The Fischer-Tropsch process is a chemical synthesis that consists on converting the BioSynGas into liquid fuels. The process is named after the German scientists who invented it in the late 1920’s and was used during World War II in Germany to produce substitute fuels. The FT chemical synthesis consists on passing the BioSynGas through a bed packed with a specially formulated catalyst within what is called the Fischer-Tropsch reactor (FT reactor). Inside the FT reactor, the catalyst helps drive a chemical reaction that synthesizes the gas into a heavy wax product and light Fischer-Tropsch liquids or LFTL, referred as FT products. In essence, the FT products can be considered a sustainable, sulfur-free version of conventional crude, and they are then sent to the Upgrading Island for further processing. The FT Processing Island also produces a tail gas that is a combustible fuel suitable for driving gas turbines in combined cycle. As such, and as described later, the FT tail gas is used within the BTL facility for power generation.

FT Products Upgrading Island

The FT products Upgrading Island receives the heavy wax product and LFTL generated in the FT Processing Island and refines them into the finished sustainable liquid fuels. This upgrading process, which is similar to the process that takes place in a conventional refinery, is

the step that ultimately yields the two main products from the BTL plant: sustainable BioJetFuel and BioNaphtha.

Power Production Block

As mentioned above, the FT Processing Island also produces a combustible tail gas that is suitable for driving gas turbines and therefore this FT tail gas is used in the Power Production Block within the BTL facility for power generation. The Power Production Block consists on gas turbines in combined cycle, which means that after the tail gas fuel has been combusted in the gas turbine, the heat produced in the combustion is used to generate additional steam. This steam, together with the steam produced in the FT Processing Island and the steam produced in the BioSynGas Conditioning Island, is then used to drive a steam turbine for generating additional electrical energy. This way, the combined cycle maximizes the power production and energy recovery efficiency of the plant. Finally, after recovering the heat energy from the exhaust of the gas turbine, the exhaust is released to the atmosphere via the Continuous Emissions Monitoring System (CEMS) as standard industry practice to ensure that applicable emissions standards are met. In all cases, the emissions from the turbine exhaust gases are in fact lower than emissions from a natural gas fired plant.

The Solena BTL plants are far cleaner and more efficient than current waste-to-energy mass burn plants in operation. The BTL facilities produce near net zero carbon emissions, no toxic ash, bottom ash or fly ash, and minimal emissions of SO_x, NO_x and particulate matter. The plants substantially reduce carbon dioxide emissions by reutilizing waste that would otherwise be sent to landfills, which generates emissions of greenhouse gases as well as other harmful environmental affects. The bio-jet fuel presents an estimated life-cycle greenhouse gas (GHG) emissions savings of 95% compared to the fossil-based jet fuel currently used by the airlines. The plants also create approximately 1,200 new jobs during construction and 175 permanent jobs during the life of the plant. Solena biofuels are cost competitive with petroleum-based fuels and meet ASTM D7566 Standard specifications for use as a 50/50 drop-in fuel by the United States Air Force and commercial airlines. In addition, the FT diesel produced may also be used by global shipping freighters to abide by increasing sulfur oxides emissions restrictions. The Air Force can utilize American-made Solena bio-jet fuel to move toward its goal to have half of its domestic fuel needs drawn from alternative sources by 2016.

Description of Solena's existing or contemplated end-to-end supply chain

The chain of activities leading to the production and delivery of biofuels to the end customer starts with the sourcing of the feedstock material. As indicated above, Solena has established relationships with highly reputable domestic and global waste management groups and negotiated Letters of Intent from three major feedstock suppliers for the supply of the necessary biomass waste. Prior to start of construction of a BTL project, Solena will engage in long-term feedstock supply agreements for the delivery of the necessary biomass waste to the BTL facility.

At the back end of the production facility, Solena anticipates the biofuels produced shall be picked up from the premises by the off-taker, who will then blend it with conventional fossil fuel to their required specifications.

Partnerships contemplated or required to obtain feedstocks and plans for moving forward to establish relationships to assure sufficient feedstock supply

In order to secure feedstock Solena has established relationships with reputable national waste aggregating entities and other global waste management companies. In addition, Solena also solicited and negotiated Letters of Intent from three other major feedstock suppliers in the US for the domestic BTL projects. As project development activities progress, Solena will seek to enter into long-term feedstock supply agreements with one or several such entities to guarantee enough feedstock is supplied to the BTL facilities.

One of the greatest advantages to Solena's facilities is that its process is feedstock flexible. The solution adds value to materials that would otherwise be landfilled. Any carbonaceous waste can be used as a feedstock, including municipal solid waste, agricultural and industrial waste. The United States Environmental Protection Agency (EPA) estimates that the average per capita municipal solid waste generation in the U.S. is 4.34 pounds per day. Municipal solid waste is abundant and ubiquitous in most large urban areas, military installations and municipalities in rural areas. Unlike many biomass sources, the infrastructure and systems to collect and delivery the feedstock to a central location is already in place and is a unique aspect of our business model. Solena's solution provides a clean, economical, and efficient alternative to landfills or incinerators in a time when more advanced solid waste management practices are a priority for many communities.

Since Solena's plants are feedstock flexible and predominantly use waste products, they are not limited in location as other biomass plants that rely on a specific type of feedstock may be. Solena is undertaking projects in locations where there is a combination of local demand, well-developed community relationships, value-adding business partners and commercial entities that will purchase the biofuel products along with municipalities, rural jurisdictions and military installations.

Regardless of the type of biomass sources used, there is very minimal negative impact on the environment. Under a US Environmental Protection Agency (EPA) definition, Solena's process is distinct from incineration and thermal waste disposal facilities. Compared to conventional coal-fired and other fossil fuel power plants, Solena's plasma gasification solution produces no air pollutants such as Semi-Volatile Organic Compounds, including dioxins or furans, or any toxic fumes, heavy metals, hazardous ashes, bottom ash, fly ash, or flue gas, as do incinerators or boilers. Solena's technology is a viable, cost-effective way to meet today's rigorous permitting regulations and to reap the environmental, societal and economic benefits of combating global climate change.

Plans for the blending of the biofuel component with conventional petroleum products, and plans to provide final delivery of blended fuels...

Please refer to sections 11 and 12 below.

4. Description of all value-added co-products resulting from the processing and conversion processes that have the potential to provide economic benefits and impact

the overall business case. Identify risks associated with producing, marketing and delivering value-added co-products and methods for mitigation.

Solena's BTL plants produce bio-syngas that is converted into bio-jet fuel or FT diesel as their primary product, depending on the requirement of the customer. In addition to the biofuels, several value-added co-products are produced as a result of the process. The BTL plants currently under development will export 33 MW (net) of clean, renewable electricity. The electricity can be purchased by the military installation, a commercial entity or the surrounding municipalities or rural areas.

Each BTL plant also produces nine million gallons of bio-naphtha annually, which may be converted to either power or more biojet or FTDiesel fuel. The bio-naphtha is highly marketable as it can be used as a solvent in paints and coatings by the chemical industry or upgraded into gasoline. It is also a valuable product in the petrochemical, mining industries, or petroleum industries. The bio-naphtha also has a high paraffin content, which makes it an ideal material for producing ethylene.

In addition, metals that are fed into the gasifier generate another co-product, inert vitrified slag. This has been approved by U.S. EPA as inert, and can be safely used as construction material. This slag would also be processed by Solena through commercial reuse channels where it will be used in a variety of construction products, including as construction aggregate for concrete or roadbed, construction fill material, brick making, architectural tile or shingle manufacturing.

Finally, the sulfur contained in the biomass feedstock is extracted from the BioSynGas during the clean-up and conditioning process in the form of sulfuric acid or pure sulfur cake, depending on local demand for this chemical co-product. Sulfur compounds have applications ranging from vulcanization of natural or synthetic rubber to the production of black gunpowder, insecticides, pharmaceutical products and disinfectants.

Solena anticipates that the slag and sulfur co-products will have negligible impact on the economics of the project or its business plan.

The greatest risk associated with the value-added co-products is a potential lack of a viable purchaser for the total amount of bio-naphtha that is produced. While bio-naphtha has a variety of uses, which are outlined above, purchasers of bio-naphtha may not enter into long-term purchase contracts. Bio-naphtha is purchased on a spot market so it is possible that when demand decreases, there will be excess bio-naphtha. Solena's mitigation strategy is to enter into partnerships with companies that utilize bio-naphtha and identify companies that need bio-naphtha before the plant is operational so there will be alternative purchasers of bio-naphtha.

5. **Estimated time from project inception to plant startup, including breakdown of time allowed for permit approvals, preliminary engineering, detail design and engineering, construction, commissioning, production startup and operations.**

The estimated timeframe from project inception to commercial operations is 30 months, including initial project development activities, permitting process, engineering, procurement, construction and commissioning of the facility.

Please refer to the preliminary milestone schedule enclosed at the end of this document for more details.

6. **Recognizing that fifty percent (1:1) is the minimum level of industry cost sharing that the Government will entertain, identify the total public-private investment required to undertake development and construction of a commercial-scale integrated biorefinery that meets the stated minimum capacity objective**

According to current modeling and engineering design work performed, the total cost to construct and commission the advanced biorefinery as described is approximately $350 million. This cost includes the projected pre-financial close and predevelopment cost of (i) Front-End Engineering and Design; (ii) land; (iii) contingency; (iv) total EPC cost to procure, construct and deliver a turn-key biorefinery plant with production parameters stated below; (v) closing/financing costs, including capitalized interest during construction; and (vi) wrap insurance costs.

7. **Estimated start-up costs to begin production of biomass-derived jet and marine diesel fuels that meet or exceed the targeted scale of production**

In order to begin production on a commercial scale, the amounts set forth in the cost and finance section above would need to be invested and deployed for construction and commissioning of the proposed biorefinery.

8. **Estimated cost per gallon of producing and delivering 50:50 blended biofuel, compared to that of petroleum-based fuel, over the first five year period of production**

Solena respectfully declines to provide an answer to this question at this particular time, as it is sensitive, competitive and confidential information. However, understanding the current cost of aviation and maritime diesel fuels, Solena believes that its cost to produce and ultimately the price of Solena fuels to its customers will be highly competitive to petroleum-based and other proposed green and sustainable biofuels solutions. Equally important, the sale price of biofuels under the bilateral off-take agreement will be independent of oil price fluctuations, which is a highly attractive attribute to prospective customers.

9. **Recognizing that a drop-in replacement fuel requires no change in systems configuration, engine architecture, fuel infrastructure, or fuel handling, document ability to meet anticipated product quality specifications as understood at this time, describe the fuel certification, and identify any issues or concerns.**

A 50/50 blend of Synthetic Paraffinic Kerosene ("SPK") to be produced by Solena's planned BTL facilities with conventional fossil-based jet fuel has already been certified to meet ASTM D7566 09 Standard Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons and flown commercially as a suitable aviation fuel and also meets the United Kingdom's Ministry of Defense Standard 91-91 for Turbine Fuel, Kerosene Type, Jet A-1.

10. Types, prospective availability, and processing location of feedstocks contemplated for use.

The feedstock for Solena's plants can come from any carbon-based material. Solena's use of diverse feedstock comprising municipal solid waste, and agricultural and industrial waste, provides distinct advantages in terms of cost and efficiency to municipalities, rural jurisdictions, military installations, industries and utilities.

Please refer to section 2 above for a list of the feedstock that can be used in Solena's BTL facility. It should be noted however that although any carbonaceous feedstock can be used, Solena contemplates utilizing RDF, derived from municipal solid waste in its BTL project.

11. Capability and experience in the sale and delivery of aviation and marine diesel fuels.

At the present time, the first commercial size plant using biomass feedstock to be built and operate anywhere in the world will be constructed by Solena in London for British Airways. It is anticipated to be commissioned in 2014. Using this facility as an example, under Solena's guaranteed off-take contract for fuel delivery to British Airways, Solena's London facility will produce the bio-jet fuel and deliver it to British Airways tanker trucks at "the gate". The tanker trucks accept the bio-jet fuel and deliver it to the local airport where a blending capability exists. The bio-jet fuel is then blended with JetA or JP8 on a 50-50 basis, which meets the ASTM D7566 standard.

In the case of marine sustainable FTDiesel fuel, the first plant using the same model and as the bio-jet fuel plant will be built in Elizabeth, NJ. The off-taker is a large shipping conglomerate, which has partnered with Solena for the development of FT Diesel facilities worldwide. Under this partnership, Solena is required to pump the non-sulfur FTDiesel fuel into a tanker ship that will deliver and unload the FT Diesel to the freight ships at the terminal dock. This facility is expected to be commissioned in the second quarter of 2015.

12. Distribution methods available from the production facility

As described above, in the case of the biojet fuel, it will be stored and pumped into waiting British Airways tanker trucks, which then take the fuel to the airport blending facility.

In the case of marine sustainable FTDiesel fuel, it will be pumped to a waiting tanker boat docked in the water near the facility, which will then transport the fuel to a waiting freighter ship docked at the Port Newark-Elizabeth Marine Terminal.

13. Understanding of Federal, state, and local environmental laws and regulation, including Section 526 of the Energy Independence and Security Act (EISA) of 2007, and familiarity and experience with environmental compliance procedures and regulations for applicable states and U.S Environmental Protection Agency Regions.

Federal, State and Local Laws and Regulations and Incentives

With regard to our understanding of federal, state and local environmental laws and regulations, Arcadis has over a century of experience in the U.S. with planning and permitting in the energy sector. Arcadis has worked on facilities ranging from traditional fossil fuel-fired generating operations to renewable energy installations involving biofuels, waste-to-energy, hydropower, wind and solar. Arcadis' services have encompassed compliance with all environmental laws and regulations including those governing air, water, wastewater, solid waste, cultural, ecological, and threatened and endangered species. Based on this knowledge and experience, Solena and its partners do not foresee any challenges with environmental permitting or compliance for a biofuels facility employing Solena's technology in the U.S.

Solena and Arcadis have taken into account pertinent Federal, state and local laws and regulations, and local community relations, as it has developed its strategy for commercial scale production in the United States. Generally, Solena will leverage Arcadis' know-how and expertise to advise and assist the company in respect to compliance with environmental laws and regulations and to secure the necessary environmental and other permits in a timely and efficient manner.

The company will secure the necessary environmental approvals such as NEPA, permitting and other regulatory approvals in parallel with project development to the extent possible to ensure maximum speed to market and that individual projects are built on time.

Section 526 of the Energy Independence and Security Act (EISA) of 2007.

> EISA Section 526 states that "no Federal agency shall enter into a contract for procurement of an alternative or synthetic fuel, including a fuel produced from nonconventional petroleum sources, for any mobility-related use, other than for research or testing, unless the contract specifies that ***the*** lifecycle greenhouse gas emissions associated with the production and combustion of the fuel supplied under the contract must, on an ongoing basis, be less than or equal to such emissions from the equivalent conventional fuel produced from conventional petroleum sources."

Solena strongly supports Section 526 of the Energy Independence and Security Act (EISA) of 2007. Maintaining Section 526 will send an important signal to the advanced biofuels industry that the Federal Government, and most importantly the US military, intends to decrease its dependence on foreign-supplied fossil fuels and increase its diversification of fuel supply to include more renewable sources.

Arcadis has developed an excellent understanding of the implications of this element of the Act on fuel production from its work for the Defense Logistics Agency (DLA) – Energy on Carbon Capture, Sequestration and Reuse Opportunities for the Department of Defense. As part of this project, the Arcadis project team is currently working with the National Energy Technology Laboratory (NETL) on performing Life Cycle Analyses to confirm earlier NETL work that showed liquid fuels from coal/biomass mixtures were capable of achieving EISA 526 requirements if implemented in conjunction with carbon sequestration. The demonstration testing portion of this project will include gasification testing on coal/biomass mixtures designed to confirm the results of LCA modeling performed to date as well as provide the database for

future LCA modeling efforts. A biofuels production facility using Solena's technology will be compliant with the provisions of EISA Section 526.

14. Timing, duration, and volume of Government purchase contracts that would be required for fuel produced in a prospective commercial-scale facility.

The purchase contract for the prospective commercial-scale facility biofuel plants would begin once the plant begins operation 18-24 months after the commencement of construction

Solena's plants have an operating life of 20 years. To ensure finacibility, the facility would require a long-term fuel purchase contract of at least 10 years.

The plants that are currently under development produce 16 million gallons of bio-jet fuel or FT diesel over the period of one year. Solena envisions the Government purchase contract would be for the full 16 million gallons. However, the Government could purchase a smaller amount, as commercial demand is anticipated as well. Solena's strategy is to build its biofuel plants near airports, seaports, military bases so the transportation of the biofuel will be cost effective.

15. The types of documentation sufficient to assure the Government that an applicant would have adequate resources and sustained access to capital to successfully execute such a program

Prior to commencing construction of a proposed biorefinery, Solena and its financial partners would conduct a financial close, whereby all necessary funding and/or funding commitments and project supports would be committed to the project. The Government customer would be a party to the financial close and would be privy to all relevant closing documentation. Solena assumes that a Government customer would, in its fuel purchase agreements and any other agreements related to Government project supports, require documentation ensuring creditworthiness of the project and its participants. Factors to be addressed include:

- Economic viability and credit rating
- Cash flow sufficiency to service any debt obligations
- Scope and timing of equity commitments
- Demonstration of long-term supply feedstock and production off-take arrangements, including power purchase agreements where applicable
- Risk mitigation instruments for development, construction and operation
- Royalty payments

16. Types of assurances required to permit review by objective, independent consultants

Solena would require a customary non-disclosure agreement in order for objective, independent consultants to receive, review and handle any Solena proprietary and confidential information. Solena assumes that the typical review criteria used by Independent Consultants would involve:

- Pro Forma Financial Statement
- Fuel Procurement (Off-take) Agreement
- Feedstock Supply Agreement
- Power Purchase Agreement, if applicable
- Design and Technology Evaluation
- Fuel Quality Specification Report
- Pilot Reference Plant Performance Data
- Environmental Emissions Criteria
- Life Cycle Analysis (LCA) Data
- O&M / Warranty Data
- Facility Operational Plan

17. Top-level business plan/concept synopsis that provides insight into the mix of products to be produced, including any plans for non-fuel products or co-products, the biofuel customers to be targeted, and the importance and duration of any Government off-take agreements required to support successful implementation of the business model.

As the advanced biofuels industry in the United States is set to move beyond first generation, corn-based ethanol, Solena's plasma gasification and vitrification biomass to liquid (BTL) plants are moving toward commercialization. The partnership of the Federal Government with the private sector to speed the development of next generation biofuels is needed to spur near term demand in the United States of both commercial and government customers. The biofuels that may be generated by the plants include bio-jet fuel, FT diesel and bio-naphtha. The process also produces 33 MW (net to export) of electricity and an inert slag material that can be used for construction purposes. Solena's biofuel products are cost competitive with petroleum-based and other renewable fuels.

Burgeoning short-term demand for Solena's FT bio-jet fuel is being driven in the commercial sector by volatile oil prices, the European Union's (EU) emissions trading scheme (EU ETS, which from January of 2012 will require all carriers flying in and out of Europe to carry EU Allowances (EUA) to cover carbon emissions arising from their flights and operations) and increasing demand for, but limited supply of petroleum-based fuels. Both the Airlines and the EU estimate that airlines will spend up to €1.1bn when they join the EU ETS next year and rising to €10.4bn through to 2020.

In this context, the construction on Solena's British Airways plant that begins in the first quarter of 2012 could not come soon enough for BA. The London BA plant will be Europe's first bio-jet fuel plant. Solena also has letters of intent with Alitalia and Lufthansa for bio-jet fuel plants. American carriers, also subject to the EU ETS, have also shown great interest in Solena's FT bio-jet fuel. At the Paris Air Show in March 2011 Solena and the American Air Transport Association along with seven US carriers—American Airlines, United Holdings, Alaska Airlines, FedEx, JetBlue Airways, Southwest Airlines and US Airways—announced that the airlines had signed Letters of Intent (LOI) to purchase Solena FT bio-jet fuel. The aforementioned Gilroy, CA BTL plant will supply the above US carriers with 16 mmgpy of bio-jet fuel.

The Solena Q United States Public Sector strategy is focused on serving the Federal Government, municipal, rural, and commercial markets. Solena understands that there are increased efficiencies and market diversification in producing advanced biofuels for both the government and commercial sectors, and in particular, the United States military. In the near term, the US Air Force, which has certified FT bio-jet fuel for use in its aircraft and seeks to supply half of its domestic fuel needs from alternative sources by 2016, is the most logical customer, followed by the US Navy, Coast Guard and Army.

Global shipping companies already see the value and negotiations are underway to supply them with FT diesel. The FT diesel is attractive to trucking companies as well. As regulations become more stringent and public pressure for cleaner practices escalates, the demand for bio-jet fuel will continue to grow. In addition to the bio-jet fuel and FT diesel, the plants produce bio-naphtha, 33 MW (net to export) electricity and vitrified slag that can be used for construction material. The plans and uses for these products are outlined in the section entitled "Value-Added Co-Products" above.

The Solena BTL plants use patented, next generation, clean technology to convert biomass waste into useful products, i.e., renewable power and green biofuels that protect the environment. The plants produce no toxic ash, minimal air, water, and ground pollution, and minimal emissions that contain little or no SOX, NOX or particulate matter. GHG emissions are low and the CO2 produced is carbon neutral.

Additionally, communities will derive significant benefits from the construction of BTL plants. About 1,200 local green jobs will be created per plant. Communities will also be able to eliminate the cost of landfill waste and its negative environmental consequences, beneficially re-use that land, and not have to further allocate valuable land for landfilling.

Were Solena engaged in a project where the Government off-takes the primary biofuel, it would be important for the government to enter into an agreement that spans at least half the operating life of the plant, which is 20 years. If the contract for the off-take was shorter, there is a risk that another viable purchaser is not available, which would make it difficult to finance a project.

18. **Comments on the nature and level of Federal and State policies, incentives, and/or obligations (e.g. R&D, capital investment, investment or production incentives) needed to develop and sustain long-term domestic commitments to produce biomass-derived fuels. These may include use of existing programs, such as those administered by the U.S. Department of Agriculture (e.g. Commodity Credit Corporation and Loan Guarantee Program), the U.S. Department of Energy (e.g. Loan Guarantee Program), the U.S. Environmental Protection Agency (e.g. Renewable Fuel Standard, RFS2), and any other incentives, programs, or policies not currently available that would be necessary for successful project development.**

Solena's suggestions/recommendations are as follows:

- Provide long-term contracts (minimum 10 years) to purchase fuel. This is typically the minimum required commitment to obtain private sector financing. Provide capital

solutions such as debt financing and loan guarantees to accelerate incentive for the industry and to demonstrate Federal Commitment to the drop-in biofuels program.

- Continue/expand current DoD/DOE R&D efforts and loan guarantee programs.
- Provide some government owned storage/blending capacity for biofuel producers so they can concentrate on the production area rather than in the fuel blending/supply chain.
- Provide default criteria/standards for compliance with EISA 526 – i.e., by regulation or policy, declare that certain classes of fuels produced from specified sources using specified production methodologies meet 526 and do not require any type of supporting documentation so long as certification by the producer is provided.
- Provide flexibility so that other fuels can demonstrate compliance with EISA 526 by using a simple, straightforward, and well-defined LCA methodology.

Solena understands that the USEPA is in the process of developing guidance for the MSW Separation Plan that must be submitted to USEPA so that fuels derived from MSW feedstock can qualify as renewable fuels. The recycling/separation requirements as well as the submittal and approval process should be simple, consistent with current solid waste industry practices, take into account regional differences and be designed to encourage rather than discourage development of fuels from the entire MSW waste stream.

The Need for Policy Support and Long-Term Commitment to long-term incentives for the production of advanced biomass-derived fuels at the Federal, State and Local Level:

As this is a request from OSTP, Solena wishes to underscore the importance of long-term Federal Government policy support for renewable energy development and a clear signal to the markets of Federal, state and local commitment to long-term incentives for the production of advanced biomass-derived fuels. Policy s**t**ability and certainty are essential to developing an advanced biofuels industry in the United States. In particular, Solena supports the Federal and State policies and incentives currently in effect at the federal, state and local levels in the United States, and will pursue specific incentives as appropriate.

Federal Policies and Incentives

Federal Government General

- Provide some government owned storage/blending capacity for biofuel producers so they can concentrate on the production area rather than in the fuel blending/supply chain.
- Provide default criteria/standards for compliance with EISA 526 – i.e., by regulation or policy, declare that certain classes of fuels produced from specified sources using specified production methodologies meet 526 and do not require any type of supporting documentation so long as certification by the producer is provided.

Department of Defense (DoD):

National Defense Authorization Act of 2007 (NDAA): Along with EISA Section 526 and RFS2, the NDAA's provision on DoD sourcing 25% of all energy consumed from renewable sources is proving to be a key underpinning of the development of a viable advanced biofuels industry in the United States and should remain intact.

DoD Biofuels Contracting Authority:

- Provide some short-term willingness (3 – 5 years) to purchase biofuels at a premium above market value to accelerate incentive for the industry and to demonstrate Federal commitment to the drop-in biofuels program.

Quantity Requirements: The military and commercial customers may consider combining their respective advanced biofuel requirements and contracting efforts and communicate those combined requirements to industry.

Department of Energy (DOE): Biorefinery Project Grants, DOE Loan Guarantee Program, Loan Guarantees for Ethanol, and Commercial By-Products from Various Feedstocks

Environmental Protection Agency (EPA):

RFS 2: The Renewable Fuel Standard 2 (RFS2), which mandates the use in the United States of 36 billion gallons of renewable fuel by 2022, is of fundamental importance and serves as a cornerstone for the development of next generation advanced biofuels industry in the United States. Only 15 billion of that mandated number will likely come from corn ethanol. Companies such as Solena are positioning themselves for commercial-scale production and will supply millions of gallons—potentially hundreds of millions of gallons—mandated in RFS2.

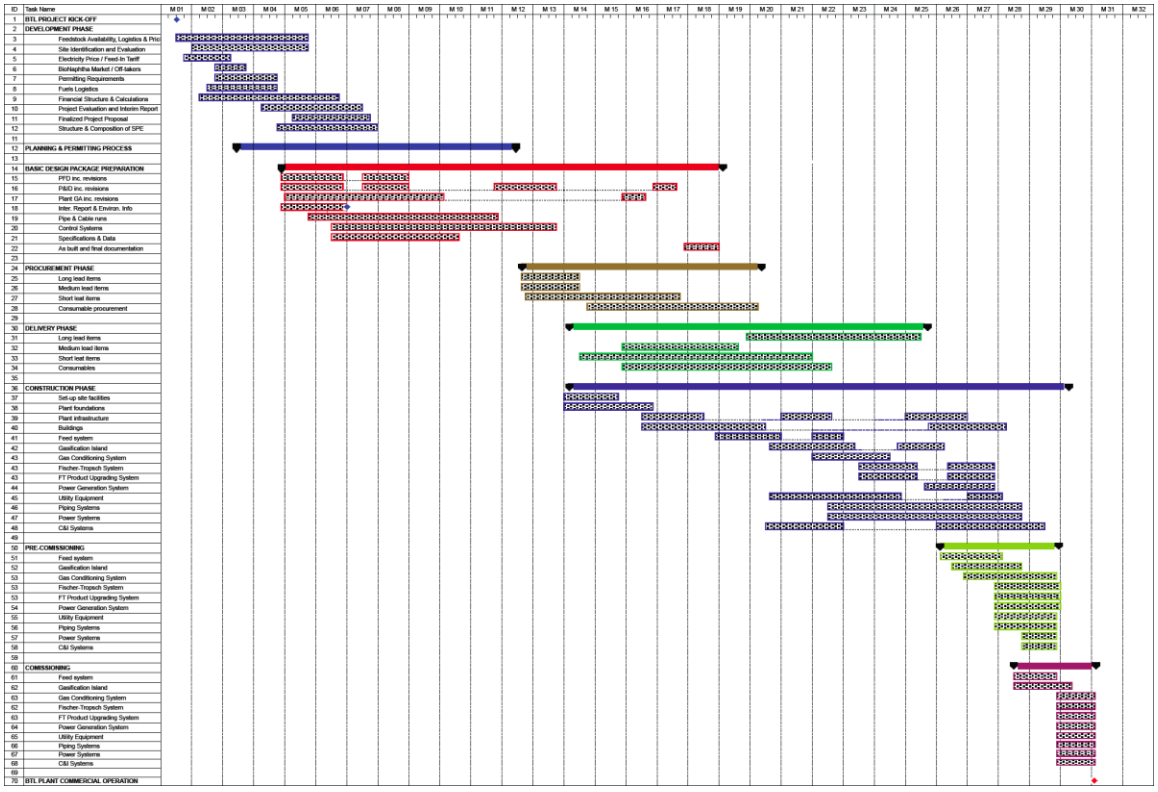
Department of Agriculture (USDA):

Solena believes USDA policy leadership and programmatic support is necessary to ensure the successful development of a commercial scale advanced biofuels industry and, in particular, a network of integrated biorefineries, in the United States. Many of the incentives listed below are set to expire in 2012. Industry will benefit from knowing that these programs and incentives will continue beyond 2012. Among the several USDA incentives programs, Solena may pursue the following programs:

Biorefinery Assistance Program□□Provides grants and loan guarantees for the construction and retrofitting of biorefineries that use renewable biomass to reduce or eliminate fossil fuel use.

Rural Energy for America Program (REAP): Provides grants and loans for a wide range of rural energy projects, including efficiency improvements and renewable energy projects. REAP is not specifically targeted at biofuels projects but could be a significant source of loan funds for such projects.

Estimated Project Timeline



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