CITY OF SAN DIEGO

PURCHASING & CONTRACTING DEPT.
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195

REQUEST FOR INFORMATION (RFI) COVER SHEET
PROGRAM(S) TO MEET CITY'S 100% RENEWABLE ENERGY GOALS
ADDENDUM B

Subject: Solutions to Support the City of San Diego's Goal of 100% Renewable Energy

Date Issued: September 23, 2016

Response Date and Time (Closing Date): October 28, 2016 at 3:00 p.m.

Questions/Comments Due Date: October 5, 2016 at 5:00 p.m.

City Contact Name and Information: Maureen Medvedyev, Principal Procurement Specialist, Mmedvedyev@sandiego.gov

Respondent's Information:

Respondent Name: Lawrence Tsang

Address: 831 S. Flores Street. Unit 2403, San Antonio, TX 78204

Telephone No. and E-Mail Address: (857) 928-3478 Ltsang@gridnovo.com

Website: www.gridnovo.com

Authorized Representative Name and Title: Lawrence Tsang, Chief Executive Officer

Representative's Original Signature: _____

Date Signed: _____

TO BE CONSIDERED, RESPONDENT MUST :

1) **Provide all requested information identified in this Cover Sheet.**
2) **Submit all requested information described in the RFI.**
3) **Submit all requested information on or before the Closing Date.**

Response to Request for Information Number: 10079755-17-A

Solutions to Support the City of San Diego's Goal of 100% Renewable Energy

City of San Diego
Purchasing & Contracting Dept.
ATTN: Maureen Medvedyev, Principal Procurement Specialist

October 26, 2016

Submitted By:

Gridnovo LLC

Lawrence Tsang, CEO
831 South Flores Street
Unit: 2403
San Antonio, TX 78204

October 26th, 2016

Dear Ms. Maureen Medvedyev:

Gridnovo appreciates the opportunity to participate in the Solutions to Support the City of San Diego's Goal of 100% Renewable Energy Request for Information ("RFI").

Gridnovo is offering to develop [redacted] of solar for the City and to [redacted] to the San Diego area that will create [redacted]. This will done through a Power Purchase [redacted] with the City of San Diego, a model which the executives have executed successfully with the [redacted] For the City of San Diego, we intend to bring in smart energy technology with our build-out.

Under this model, clean energy will be delivered to the City while jobs in the clean energy sector will be created, and a program that allows maximum participation by all residents. While Federal tax incentives are still available for solar, Gridnovo wishes to move swiftly with the City to maximize its value that it can deliver. [redacted] Gridnovo's relationships with large financial institutions have all committed to this program and eager to move forward.

Furthermore, the Power Purchase Agreement [redacted] protects the City from technology and operational risk while simultaneously creating a stronger, more flexible, and more efficient grid and new earning opportunities. And, as a result of the discrete and environmentally-friendly nature of solar, these assets can be easily integrated into the local community.

Gridnovo looks forward to working with the City of San Diego to deliver the largest contracted project in the US while creating jobs that will have lasting impacts for generations. Gridnovo is committed to transparency, and we look forward to fostering a mutually-productive relationship with the City of San Diego, both through this RFI and beyond. Finally, we affirm that we have read, understand, and agree to all provisions of the RFI.

Should you have any questions or require any clarification, please do not hesitate to reach out. We are also happy to meet with the City of San Diego to describe further about the technical, business, legal and/or revenue considerations for a competitive solicitation.

Sincerely,

Lawrence Tsang
Chief Executive Officer
857-928-3478
Ltsang@gridnovo.com

Contents

Program Concept

The Gridnovo team would like to propose an innovative [redacted] Through a Master Power Purchase [redacted], Gridnovo and its partners will deliver clean energy to San Diego and [redacted].

Members of the Gridnovo team has [redacted] This [redacted] This also brought in over [redacted] As former executives of [redacted] that established and managed this expansive public-private partnership, we are eager to do something more revolutionary with the City of San Diego that brings clean energy, jobs, and state-of-the-art technology. Sustainability and smart energy technology will be the core theme to our proposal.

Gridnovo will have two components in this program as described below:

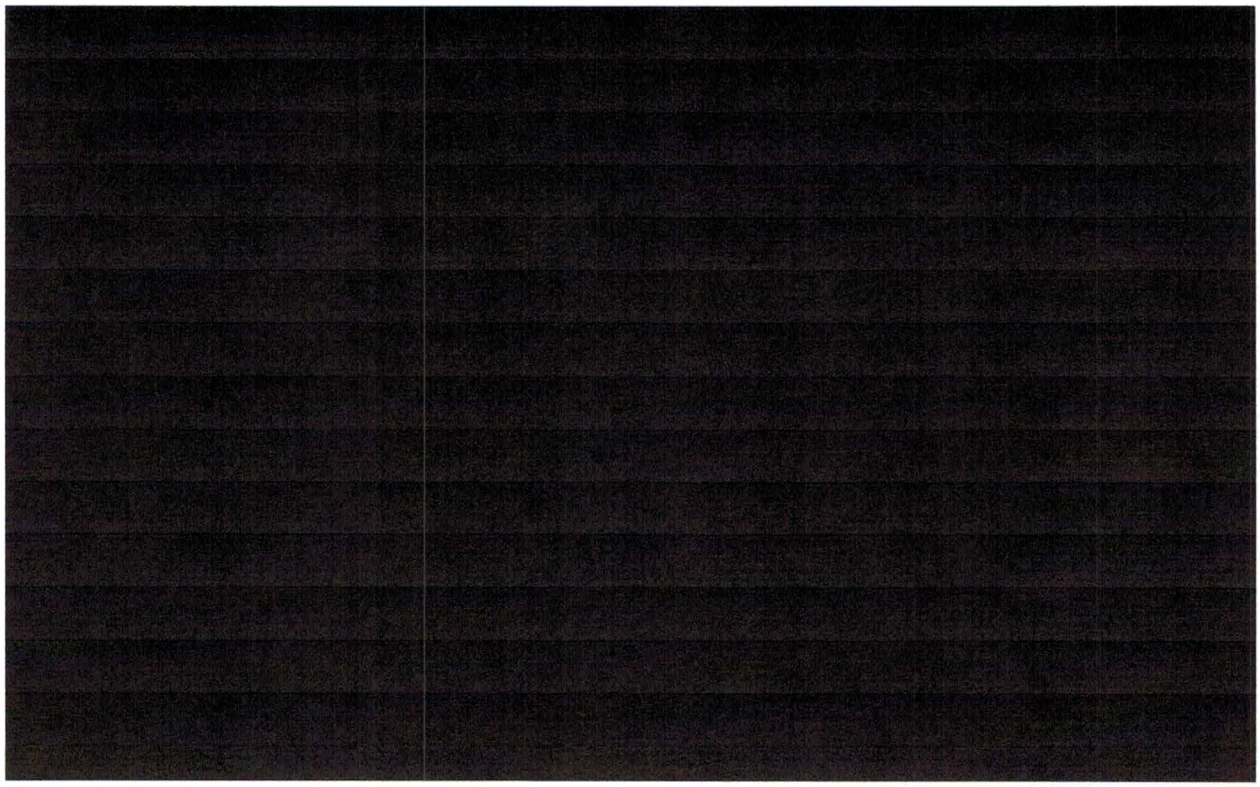
Clean Energy

Gridnovo will develop over [redacted] of solar power. We will also work with other developers and the San Diego's water authority for potential hydro power projects to bring a holistic clean energy solution for the City. This will also include a program that allows residents and business owners to participate.

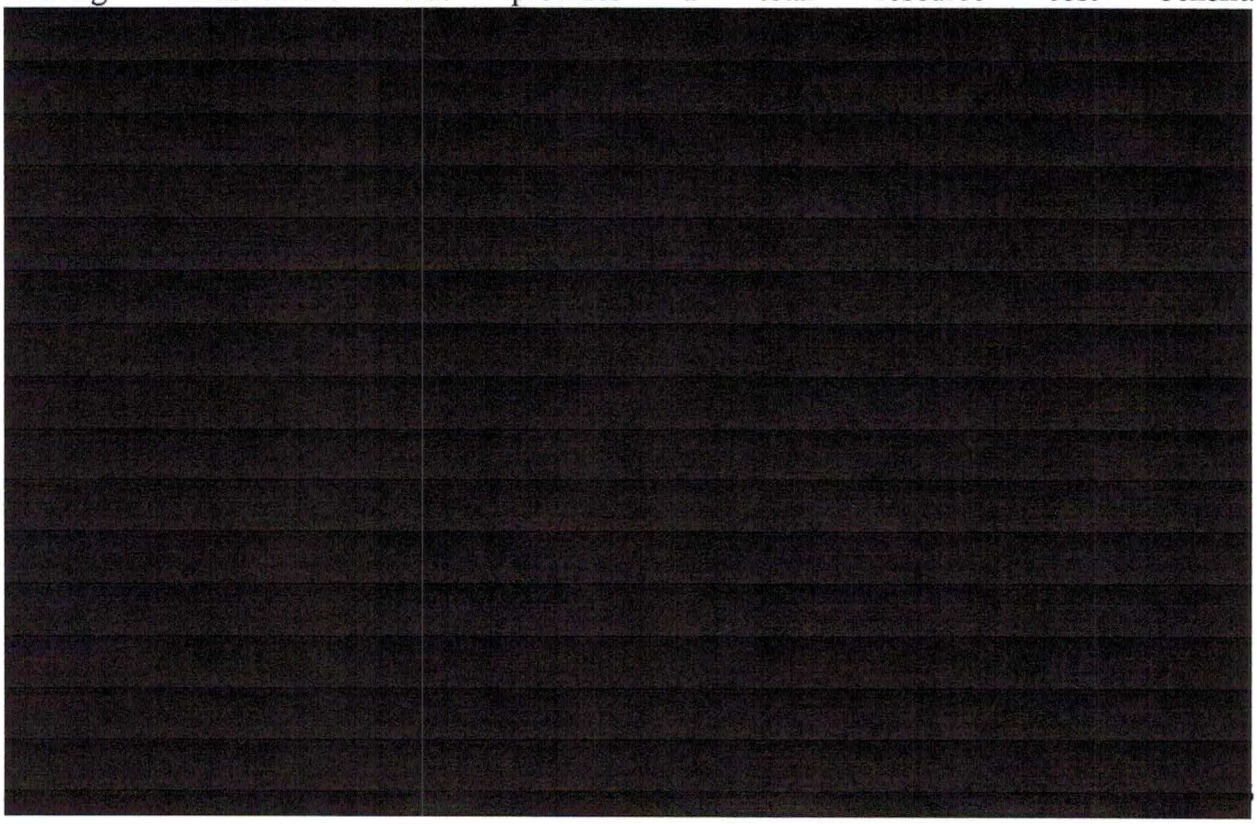
In addition to utility projects, we will propose a [redacted] where residential and commercial and industrial customers alike can [redacted] This [redacted] would have to be worked out with the City or the Community Choice Aggregation program. Community solar will also be deployed for those customers who want clean energy but their home/facility is not ideal for solar. All of this would be done without any upfront costs. All of the contracted output will be an agreement with the City, allowing low-income residents to participate and receive solar power. Additionally, [redacted]. We will utilize local installers, spurring additional local jobs and/or new businesses.

With large amounts of renewable energy on the grid, it will inherently cause grid imbalances and thus we will complement [redacted] Energy storage will be key to a 100% renewable energy strategy. Storage also has the capability to provide renewable energy during the evenings and additional resiliency to the grid in times of outages caused by severe natural events. Energy storage projects will allow San Diego to drastically lower its demand charges and strain on the grid.

The table below shows how energy storage is complementary to solar and an overall clean energy solution for the City.



The illustration below describes the benefits of energy storage from an infrastructure and customer perspective, while generating revenues. Stored renewable energy can increase utilization of the existing infrastructure that provides a total resource cost benefit.

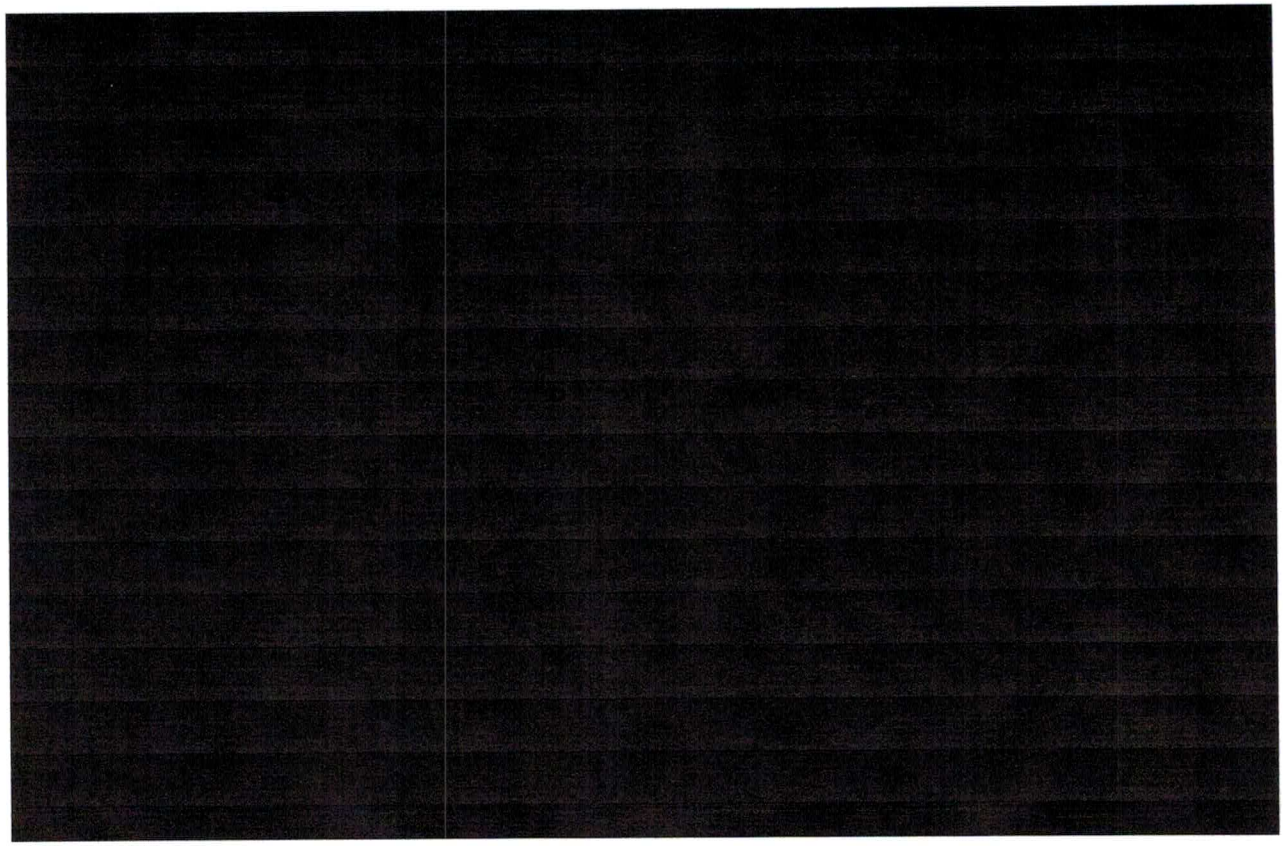


[redacted]

Gridnovo has been working with multiple international suppliers to provide smart technologies and balance of system equipment for energy projects. As such, we will deploy smart technology that will make San Diego a "smart" city. Today, many cities around the world face serious problems such as increased carbon emissions, environmental pollution, household waste accumulation, aging infrastructures, etc. There is a dire need for managing energy consumption efficiently, making a more pleasant city environment, building, and operating industrial infrastructure. Gridnovo will work with technology providers by leveraging advances in IT, and sustainable green technology. Using this solution, Gridnovo can create more convenient, safe, and eco-friendly cities where all residents can enjoy much better life quality. We can drive energy savings up to [redacted] installing high efficient equipment, introducing new and renewable energy, and maximizing energy efficiency. It enhances safety through real-time monitoring, intelligent video analysis, and fast & accurate reaction to situation. We will deploy technology in our power plants and various installs throughout the city.

Collectively, we will be able to [redacted].

In addition to bring clean energy to San Diego, we will consider a [redacted]. Gridnovo and [redacted]. These will [redacted]. Furthermore, creating a technological hub will spur other businesses and vendors to be created within the San Diego area. The illustration below is just an example of what our partner [redacted].



We will engage with local communities and schools to develop an entire education program around renewable energy. We plan to develop a showcase that allows residents of San Diego and tourists nationwide to see a state-of-the-art facility and city. Gridnovo is able to provide a viable and affordable approach to achieve the beneficial features of a smart and clean city and integrate them into a comprehensive sustainability strategy for the City of San Diego.

How Recommendations Fit Into CAP Efforts

	Solar	Energy Storage	Smart Technologies Provider	Economic Development
1.1 Contributing to the City's 100 percent renewable electricity goal by 2035	✓	✓	✓	
1.2 An energy portfolio with lower carbon content than is currently provided, and lower than that required per California SB 350 and the State's Renewable Portfolio Standard	✓	✓	✓	
1.3 Identifying new and diverse sources of renewable energy to supply electricity and/or reduce greenhouse gas emissions	✓	✓		
1.4 Ensuring reliable and sustainable energy services for both the near- and long-term	✓	✓	✓	

1.5 Spurring new renewable energy development	✓	✓	✓	✓
1.6 Following the State of California's loading order by considering energy efficiency, demand response, and other alternatives to generation for buildings in the City above levels currently achieved	✓	✓	✓	
1.7 Considering social equity in efforts to reduce greenhouse gas emissions	✓	✓	✓	✓
1.8 Increasing resources dedicated to local investment and economic development	✓	✓	✓	✓
1.9 Creating green jobs in San Diego above levels currently achieved.	✓	✓	✓	✓

By directly developing solar power and energy storage projects, Gridnovo and its partners will address all of the Clean Action Plan efforts as listed in Section 1 C of the RFI. By introducing more solar energy to San Diego's generation mix it will lower carbon content and reduce GHGs over the life of the power purchase agreement (PPA) and beyond (1.1, 1.2, 1.3, 1.4, 1.5). When considering renewable energy and energy storage at the commercial, industrial, and residential level and incorporating smart technologies, it will address many facets of the energy efficiency, demand response, and green buildings (1.6, 1.7). When considering the [redacted], it will inevitably drive local investments and create high paying green jobs (1.8, 1.9). By working with local licensed installers, it will drive additional business and jobs as a result to support the renewable energy efforts (1.8, 1.9). By immersing ourselves with the community, we expect to involve residents to participate in a green economy and by the economic development we are driving, residential will buy-in to the efforts. We have every intention to work with local colleges to create and/or enhance current curriculum related to clean energy technologies.

Does the project or program support the City's renewable energy goals? How?

As also described in the previous section, this program most definitely supports the City's renewable energy goals. Gridnovo and its partners will directly develop projects and bring in significant business operations to the City of San Diego. We look to have a Master Power Purchase [redacted] with the City of San Diego as the offtaker and counterparty. With [redacted] of solar power, this will be a huge leap forward for San Diego.

What are specific technologies and estimated costs required to implement recommendations, and what might be appropriate funding mechanisms? Identify parties that may incur the costs (e.g., City, residents, businesses, …etc.)

The specific technologies will vary depending on application. For solar, we will deploy photovoltaic (PV) solar panels, a very mature technology that is widely deployed and operating around the world. For energy storage, Gridnovo and its partners will deploy various chemistry depending on applications. Gridnovo expects that [redacted]

used for deployment in this proposal. [redacted]

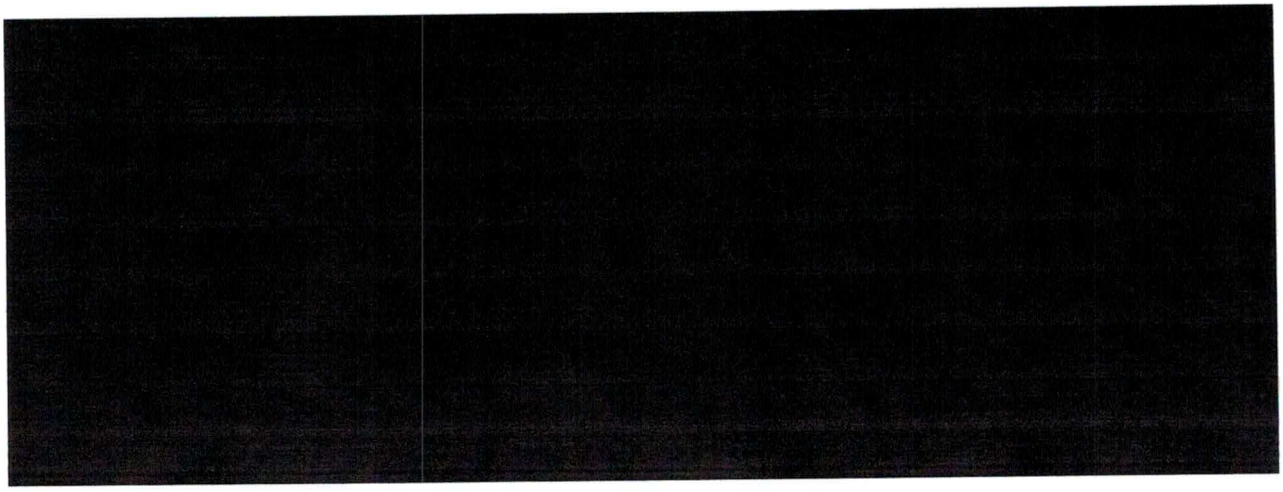
The cost of implementing this will vary [redacted] Implementation of this program would not cost anything to the City or its residents. Through a Power Purchase Agreement, Gridnovo will project finance on the backside by working with capital markets to raise various forms of equity, debt and tax equity. Gridnovo and its partners have already financed over 1 GW of renewable energy and have deep relationships with the financing community in New York City. We will also look to see if bond financing through municipals is possible. For residential, commercial and industrial application, we expect to work with a utility and/or the City to provide community solar and solar hosting program.

For smart technologies, it will be a [redacted]. This is more challenging to quantify and cost as most of this will be very much integrated with the energy infrastructure being developed. Once we are able to define a specific scope with the City of San Diego, we can better quantify the capital expenditures required. In most cases, as an energy services provider, offerings like these come at no expense and contractor paid through the savings provided. This platform [redacted]

- Cumulative energy consumption analysis
- Energy consumption trend and correlation analysis
- Greenhouse gas and energy cost management
- Energy saving feature
- Renewable energy
- High-efficiency equipment

This program will allow San Diego to [redacted] into a small network serving some or all of the energy needs of participating users providing benefits including reduced energy costs, increased overall energy efficiency and improved environmental performance and local electric system reliability. The growth of utility and distributed generation combined with technologies, particularly energy storage and power electronic interfaces and controls, are making the concept of a smart city ecosystem a technological reality.

[redacted]. While physical microgrids may be interconnected at high voltage and participate in regional wholesale energy and ancillary service markets, it is more likely that they will be connected at lower voltages to the local utility from whom they may buy and sell power. An important feature of physical microgrids is that they may also be operated independently from the larger grid if disruptive events such as faults (i.e., short circuits), voltage fluctuations and momentary interrupts occur upstream. This provides microgrid participants with



What is an estimated timeframe for implementation of projects or programs submitted, and what are the factors that may contribute to accelerating or slowing the implementation timeline?

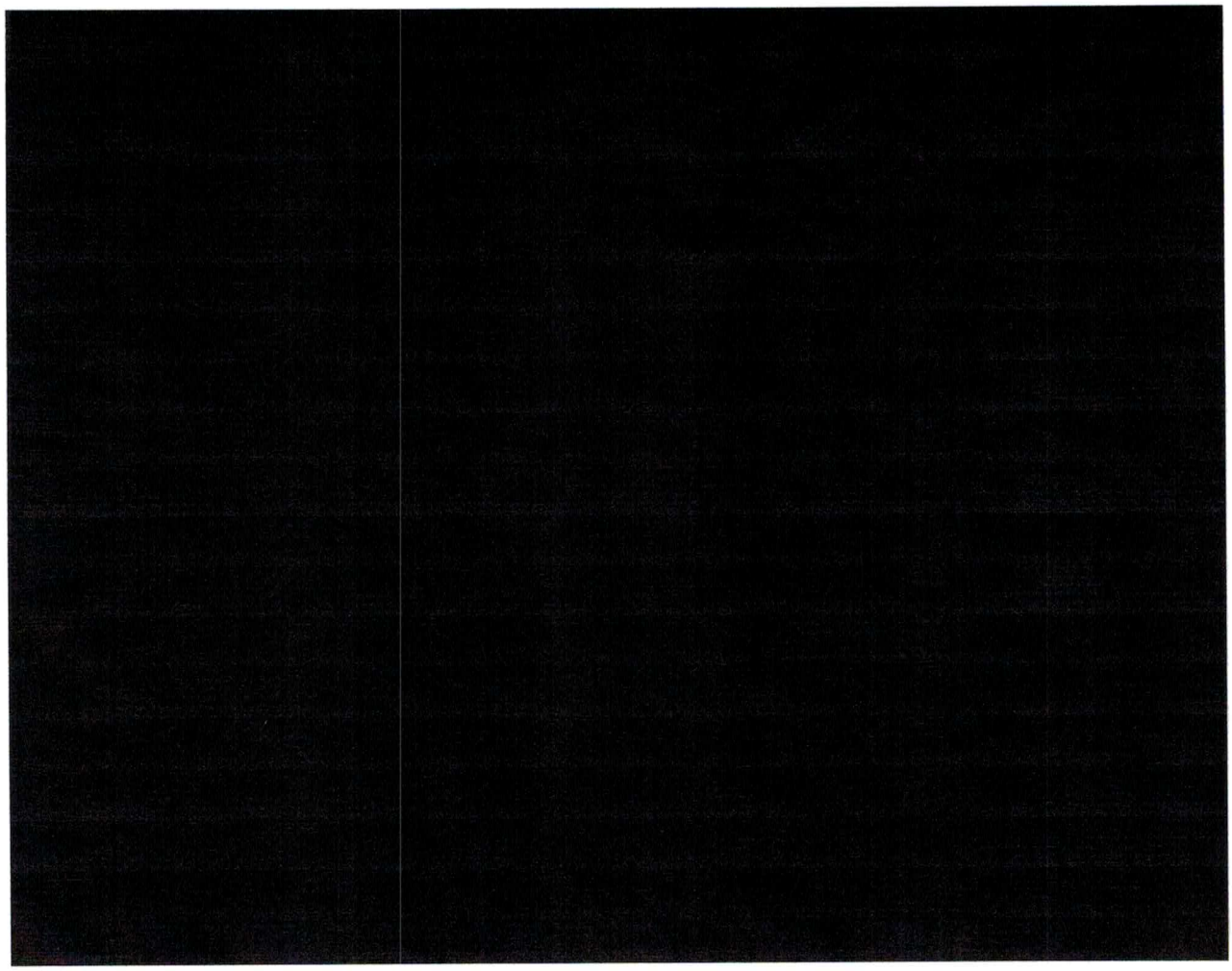
Gridnovo believes it can fully execute a program of this nature over the course of 5 years or less. It will take some time to relocate and re-establish large operational facilities to the San Diego area. Additionally, legislation extending the Solar Investment Tax Credit (ITC) was signed into law on December 18th, 2015. The bill extends the 30% Solar Investment Tax Credits for both residential and commercial projects through the end of 2019, and then drops the credit to 26% in 2020, and 22% in 2021 before dropping permanently to 10% for commercial projects and 0% for residential projects. The extension of the Solar ITC will lead to sustained growth in the U.S. solar industry. By 2020, the industry will deploy more than 20 gigawatts (GW) of solar electric capacity annually and employ more than 420,000 workers. The additional solar generation will more than offset carbon emissions from the lift of the oil export ban on an annual basis by 2019.

Gridnovo would like to utilize the available Federal incentives to offer the most cost effective solutions to San Diego. It is what drives this industry forward and expeditious execution is paramount in order to maximize value for solar on behalf of the City of San Diego. Gridnovo intends to develop renewable assets simultaneously as its partners relocate to the San Diego area. This will ensure timeline is expedited and projects are executed efficiently. Other contributing factors that may slow the implementation timeline is a Master agreement with the City of San Diego. With currently relationships Gridnovo currently has, we are able to expedite this timeline in short order.

Who are potential participants in the implementation and operation of the proposed projects or programs?

Gridnovo expects to leverage existing relationships as participants to develop, operate, and maintain the proposed program. We currently have informal agreements, letters of intent, and commitment letters to put this program together. Formalized agreements will be put into place if and once an agreement is put into place with the City of San Diego. Proposed participants will be

[redacted]. By and through its relationships, [redacted] and will obtain more as the program progresses and expands.



This consortium will work hand-in-hand with the City of San Diego and integrate a program that will produce green energy, green jobs, and a green community.

How is the specific project or program new or different than what the City is currently doing, and how can it potentially be integrated with existing or future projects or programs?

This program is different than what the City is doing as it does not currently have any sort of [redacted]. Gridnovo praises the City on its current sustainability efforts and its commitments to 100% renewables. By having an integrated and open platform, future projects and programs can be added on. Creating an environment of collaboration

and technology will create a sustainable and lasting solution. Our program will also transition and modernize traditional and aging infrastructure.

What are potential obstacles to implementation, including compliance requirements, regulatory barriers, technological or market feasibility, financing limitations and/or other parameters? Identify potential solutions for each.

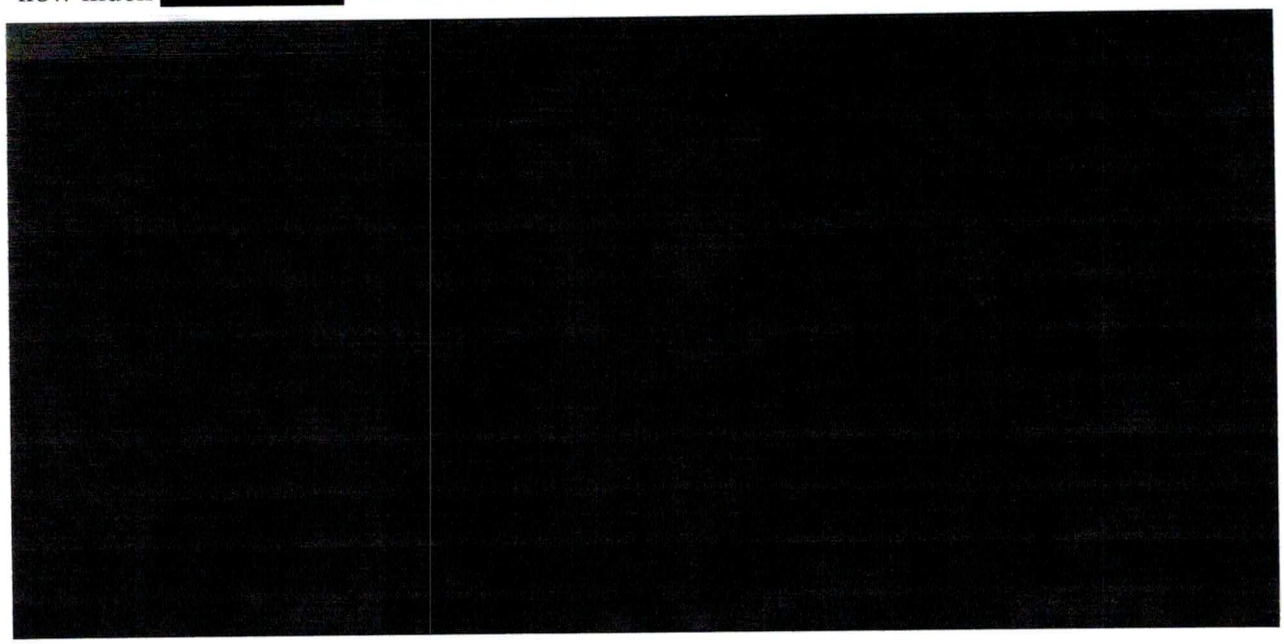
Having experience deploying and executing a similar program, we are familiar with potential barriers and feasibility of a successful program.

Challenge/Obstacle	Potential Solution
Tax incentives/abatements	Work hand-in-hand with the City of San Diego and its Economic Development Department to seek available incentives for relocating and establishing operations in San Diego.
Investment Tax Credit (ITC)	Regular meetings with the City of San Diego on timeline of execution and delivery of the program. The ITC curtails depending when projects come online and we want to make sure projects are constructed in a timely manner to take advantage of available federal tax credits. Power Purchase Agreements must be in place with the City.
Bankruptcy	The risk of the City going bankrupt is an unlikely event, but one we always identify. San Diego's credit rating is no issue. We are confident financiers of this program will be comfortable with the investments based on the City as the offtaker and/or Counterparty.
Recruiting	Bringing and hiring new jobs [redacted] has challenges. Fortunately, San Diego is surrounded by great universities, military and other technology companies where skills can be transferred. Additionally, we typically host large nationwide career/recruitment fairs to attract talent to a city. Moreover, we also work with local universities and colleges to provide training and contribute to existing curriculum to allow graduates to join the local workforce and contribute to the tax base.

What are the estimated results of the proposed concept(s), including the potential for greenhouse gas emissions reductions, numbers of residents and/or businesses accessing the program, economic impacts, …etc.?

Estimating potential greenhouse gas emissions, access to programs and economic impacts will be difficult to estimate and will require substantial and subsequent studies to measure.

Based on the EPA's AVERT tool to measure potential greenhouse gases displaced, the table below how much [redacted] can contribute on an annual basis.



This program allows every resident and commercial business to participate. Part of our solar hosting program will allow them to have solar on their roofs or to participate in a community solar-type projects. Given that the City of San Diego is moving towards 100% renewables, all residents will receive all the ancillary benefits. Moreover, making smart technologies available for energy efficiency and self-generation will maximize participation. Promotion and marketing events will be made jointly with the City and its related departments.

The program in [redacted]. This was calculated [redacted]. We expect to work with the city to implement similar studies to understand annual economic impacts to San Diego.

Include any other comments that you would like to offer that were not previously addressed.

The Gridnovo consortium is looking forward to making a tremendous investment in San Diego. For hundreds of families, San Diego will be home. We want to be committed to the City, engaged in the community, contribute to research, and eager to modernize a city by providing clean energy. We look forward to a positive outcome from the City of San Diego. We are happy to meet with the City of San Diego to further describe about the technical, business, legal and/or revenue aspects of our proposal.