



TOWN OF BRISTOL and TOWN OF BARRINGTON, RI RFP RESPONSE BID #850 PUBLIC-PRIVATE PARTNERSHIP FOR ON-SITE SOLAR PROJECTS

Tangent Energy Solutions Contact Information:

Andy Meserve
Vice President Sales and Development
610-444-2800 x205 –office
302-388-4572 – mobile
610-444-2822 – fax
ameserve@tangentenergy.com

U.S. Postal Service Address:
P.O. Box 1140
Kennett Square, PA 19348

Overnight Mail and Physical Address:
204 Gale Lane
Kennett Square, PA 19348

Infewision Contact Information:

Steve Ellicott
Managing Partner
401-247-2244 - office
401-965-5253 - mobile
sellicott@infewision.com

Physical Address:
8 Maple Avenue
Suite 240
Barrington, RI 02806

November 28, 2016

Town Clerk's Office
Town Hall
10 Court Street
Bristol, RI 02809,

Re: PUBLIC – PRIVATE PARTNERSHIP FOR ON-SITE SOLAR PROJECTS - BID #850

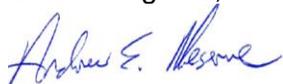
To Whom It May Concern:

Tangent Energy Solutions, Inc. (Tangent) in partnership with InFEWision, LLC is pleased to submit to the Town of Bristol and the Town of Barrington RI our proposal to supply and install solar photovoltaic generating systems on properties owned by the Town of Bristol and the Town of Barrington RI, and sell the generated power to the Towns through a Power Purchase Agreement (PPA).

With over 100 years of recognized power project development, finance, construction, and operation experience, Tangent's team members have delivered optimized energy solutions to utility, industrial, commercial and institutional customers with outstanding results. We strive for continuous innovation to find the ideal solution from qualified industry providers including public and private financing institutions, electrical equipment manufacturers, installers/electrical contractors, industrial service providers, and public sector entities. We are well versed in project management, financing, operations, monitoring and control of traditional and renewable energy assets. Tangent meets all of the developer requirements and has extensive experience developing and operating photovoltaic systems for municipal clients ranging from small rural townships to the largest city in the United States.

We appreciate the opportunity to provide you with this proposal. We are available to discuss any questions or concerns you may have regarding our proposal as you progress through your evaluation. I can be reached at 610-444-2800 ext. 205 or via mobile at 302-388-4572.

Sincere regards,



Andy Meserve
Vice President of Sales

Executive Summary

Tangent Energy Solutions, Inc. (Tangent) and Infewsion LLC are pleased to submit this proposal to the Town of Bristol and the Town of Barrington RI, in response to the Request for Proposal for Solar Generating Systems. Our development and project management expertise, proposed financing structure, and commitment to delivering short and long-term economic value and performance to the Town of Bristol and the Town of Barrington will ensure that this project meets or exceeds the project evaluation criteria. We are also confident that our competitive pricing will provide long-term value to the Town of Bristol and the Town of Barrington. The proposed projects totaling over 8 megawatts DC will serve as an exemplary model of how the collaboration between local townships on a renewable energy project that leverages existing infrastructure and under-utilized land resources, will deliver carbon-free renewable energy in a fiscally sound structure.

To date, Tangent has financed, constructed and commissioned over 50MWs of solar generation projects across the United States and is contracted to operate and maintain the majority of same solar generating systems. Tangent has an additional 50MWs in various stages of final development and construction.

Tangent was recently awarded the project for the City of New York. This project consists of rooftop and ground mount installations in all the 5 boroughs for 88 sites and combined 16MW DC of solar production. Although the Town of Bristol and Town of Barrington projects are smaller in scope, there are many similarities in how Tangent and Infewsion will take their approach. We have proposed a number of options for the multiple locations interested in participating in this RFP.

Tangent has extensive experience surrounding photovoltaic projects on brownfields, landfills and even EPA Superfund sites. Working closely with corporate customers like DuPont and Eaton Corporation, we have been able to use their brownfields and landfills that we once viewed as real estate liabilities and transform them into revenue producing sites that offer a positive public relations story.

Tangent's management team members all have a minimum of 15 years of experience in the energy business and have all been with Tangent since its inception in 2009.

Tangent's reputation has been documented in articles on our website (www.tangentenergy.com).

Infewsion LLC, is a Rhode Island Company based in Barrington, RI. The Infewsion team has developed, designed, constructed and commissioned over 25MW's of renewable energy projects for commercial and industrial clients both nationally and internationally for over 10 years. The Infewsion partnership brings the utmost in design, engineering, procurement, construction and project management expertise that is integral to Tangent's value proposition, core values, and portfolio of customer focused renewable energy solutions. The combined resources and services of Tangent and Infewsion offers the Town of Bristol and Town of Barrington unmatched support and experience for a complex project of this nature.

Tangent Energy Solutions – Business Summary

Tangnet Energy Solutions, Inc. is incorporated in the state of Delaware and is headquartered in Kennett Square, Pennsylvania. Tangent has 23 employees located in Pennsylvania, Ohio, Massachusetts, Connecticut and Rhode Island.

Tangent Energy Solutions' team has a proven track record in renewable project development, energy efficiency, demand response, power markets, institutional energy operations, and infrastructure safety and reliability.

Tangent's team was built around energy expertise. The team has significant experience working with municipal, commercial, industrial and institutional customers across North America, evaluating solar technologies and options, and a deep understanding of how municipal, commercial, industrial and institutional energy facilities operate.

Tangent employees have dedicated their careers to developing strategies and services that enable clients to operate their energy infrastructures safely, reliably, and economically. We have a unique blend of on-site energy infrastructure operations, renewable energy development, financial analysis, and distributed utility management experience that will exceed expectations.

Our experience in working with wholesale energy markets and facilitating the participation in demand response markets brings significant "up-side" potential to our clients with distributed solar assets.

Most importantly, we operate in environments where safety is first, followed closely by reliability and economics. Our management team and employees have been working on professional industrial and institutional sites for over 30 years and realize the commitment required to meet the industry leading quality and safety standards

Tangent provides end-to-end services and technology neutral solutions that improve customers' energy cost structure while meeting their sustainability goals. With over 150 years of recognized experience with diagnostics and project development, our team members have delivered optimized energy solutions to municipal, commercial, institutional and industrial customers with outstanding results. We serve as the single point of contact for evaluation, design, procurement, construction and finance, plus ongoing management, operations and support.

Tangent's unique blend of experience provides benefits far beyond what demand response, performance contracting, process improvements, or on-site renewable energy can do alone. We cut through fragmented energy challenges delivering a cohesive strategy that minimizes energy price risk and uncertainty, provides a hedge against future energy costs, and improves the overall energy cost structure for our customers. Unlike incremental demand and load adjustments from curtailment service providers and ESCOs, we facilitate a sustained reduction in peak demand and consumption; reducing both energy and ancillary service charges year round.

Tangent has developed various solutions to customers' energy cost and sustainability issues. The Tangent difference enables businesses and institutions to meet their environmental compliance and sustainability goals with no capital cost requirements. We are well versed in project management, operations, monitoring and control, and will remain part of our customer's energy team. Tangent's key team members have been responsible for the design of 150+ MWs of photovoltaic systems, and individuals have over ten years of experience in the emerging industry.

Infewsion – Business Summary

The InFEWision name and mission is focused on the intersection and ecosystem of Food, Energy, and Water - with clean, renewable and affordable energy at the core. While our primary focus and experience is in the commercial and industrial solar energy industry, we have built an ecosystem of technology, financial, and legal partners in order to deliver holistic business solutions to our clients. In fact, it has been our clients who have helped us shape our mission and the resources necessary to help them solve their business challenges.

We're experienced bringing the most complex projects to a successful outcome, from early stage evaluation and financing, to system design, equipment procurement, construction and commissioning, as well as ongoing operations and maintenance.

We are committed to demonstrating honesty and transparency in all of our business activities. We place the highest value on the relationships we have with our clients, partners, vendors, and investors, believing that our success depends on true, hands-on partnerships defined by mutual respect, committed support and integrity.

Tangent & Infewsion Holistic Energy Approach

Tangent and Infewsion is an integrated provider of enterprise level renewable energy solutions. Our vision is to manage customers' renewable power needs through a "trusted advisor" role to ensure the lowest cost, highest reliability, greatest safety and environmental awareness. As the initial thrust in reaching this objective, the Company is focused on the delivery of a comprehensive menu of renewable energy and energy infrastructure solutions enabling customers to understand and implement sustainability strategies.

Tangent and Infewsion develops, finances and implements sustainable energy strategies to increase infrastructure reliability, improve sustainability and reduce energy expenditures for Municipal, Commercial, Industrial and Institutional clients through

- Application of Alternative Energy Systems.
- Optimization of Energy Infrastructure.
- Monetization of Energy Program Participation.

We work with our clients to develop and implement long-term energy strategies with a focus on reliability, sustainability and cost containment. Our holistic approach couples Energy Efficiency, Demand Response and Renewable Energy technologies with Capital Project Financing and On-

going Operations & Maintenance services to provide customers with a worry free and economic path to a sustainable energy future.

The services we offer include the following:

Sustainable Energy Strategies

- Audit and Plan Development
- Consumption Reduction, and Verification
- Operational Optimization

Renewable Energy Solutions

- Audit and Plan Development
- Plan Implementation without Capital Outlay from Client
- Power Purchase Agreement

Energy & Energy Infrastructure Information

- Site and Corporate Energy Dashboard
- Renewable Energy Systems Asset Management

The benefits of our services to our clients include, but certainly are not limited to, the following:

- Hedge against future energy price escalation.
- Reduction in energy consumption and cost.
- Production of renewable energy credits.
- Production of carbon offsets
- Positive public and employee perception.
- Corporate governance and mandate fulfillment.

Project Description

1) Proposed System Description for the open space at the Town of Bristol Landfill. Please note that Rhode Island’s Renewable Energy Growth Plan limits the size of Large Solar (Community Remote Distributed Generation) to 5 MWs.

Below is a matrix of the 6,475 kW DC (5,000 kW AC) PV system’s components. The system is expected to produce 8,708,000 kWh in the system’s initial year of operation.

Item	Description	Notes
PV Modules	JA Solar 72 Cell Modules	Tier 1 PV modules
Inverter	Solectria SGI 750/500 XTM 1000V	Lawrence, MA manufactured
Mounting Hardware	GameChange Pour in Place Ballasted Ground Mount	Zero Penetrations, fixed tilt @ 30°
Monitoring	Tangent AMP™	Real-time system and facility load monitoring and control
DC Combiner Boxes	Solar BOS	1000 Volt Combination

Below is a picture of the mounting system and inverter as specified above. All pictures are from Tangent projects taken during the installation stage on a closed landfill.



Ballast tubs with racking installed



Ballasted system installed on landfill site



Ballasted equipment pad on landfill with ballasted pole

2) **Proposed System Description for the smaller scale roof-top projects in the Towns of Bristol and Barrington**

Below is a matrix of the rooftop PV systems of the town buildings kW:

PV System Location	System Size (kW DC)	kWh Production in Year 1
Barrington High School	417	514,810
Barrington Middle School	336	415,968
Hamilton Meadows School	289	355,593
Nayatt Elementary	188	230,748
Primrose Hill	198	244,094
Sowams Elementary	195	240,219
Totals	1,623	2,001,431

3) **Preliminary Project Layouts – the following pages show initial system layouts:**

	<p><u>Site Information:</u> Closed Landfill Minturn Farm Rd. Bristol, RI</p>	<p>72 Cell Module Portrait – 2 Modules Tall 345 Watts Azimuth: 180° Tilt: 30°</p>	<p>Total Modules: 18,762 Total System Size: 6,472.9 kW DC</p>	<p>BIM 11/28/2016</p>
				

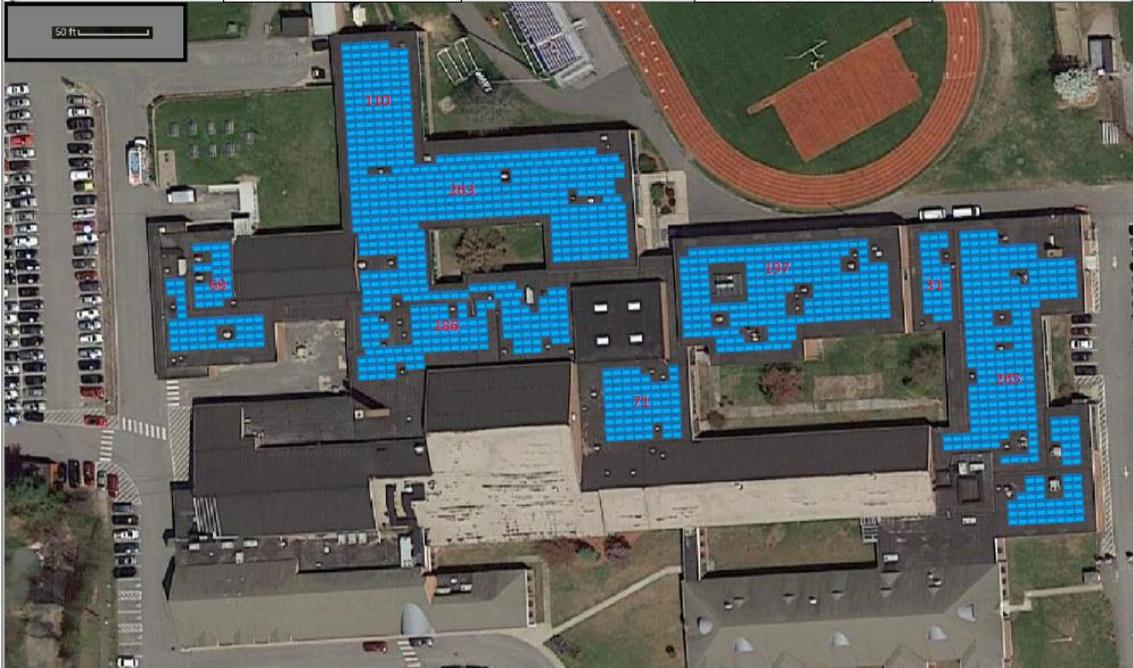


Site Information:
Barrington High School
220 Lincoln Ave
Barrington, RI 02806

60 Cell Module
Landscape
350 Watts
Azimuth: 176.5°
Tilt: 10°

Total Modules: 1191
Total System Size: 416.85 kW

MJL
10/17/16



Site Location:
Barrington Middle School
261 Middle Highway
Barrington, RI

60 Cell Modules
Landscape
350 Watts
Azimuth: 184°
Tilt: 10°

Total System Size: 336 kW
Total Modules: 960

MJL
10/18/16





Site information:
Hampden Meadows School
297 New Meadow Rd,
Barrington, RI 02806

72 Cell module
Landscape
350 Watts
Azimuth: 200°
Tilt: 10°

System Size: 289.1 kW
Total Modules: 826

MJL
10/18/16



Site information:
Hampden Meadows School
297 New Meadow Rd,
Barrington, RI 02806

72 Cell module
Landscape
350 Watts
Azimuth: 200°
Tilt: 10°

System Size kW: 398.65 kW
Total Modules: 1139

MJL
10/18/16





Site Location:
Nayatt Elementary
400 Nayatt Rd,
Barrington, RI

72 Cell modules
Landscape
350 Watt
Azimuth: 174 °
Tilt: 10°

System Size: 187.6 kW
Total Modules: 536

MJL
10/18/16



Site Location:
Primrose Hill Elementary
60 Middle Highway,
Barrington, RI

72 Cell modules
Landscape
350 Watt
Azimuth: 177°
Tilt: 10°

System Size: 198.5 kW
Total Modules: 567

MJL
10/19/16



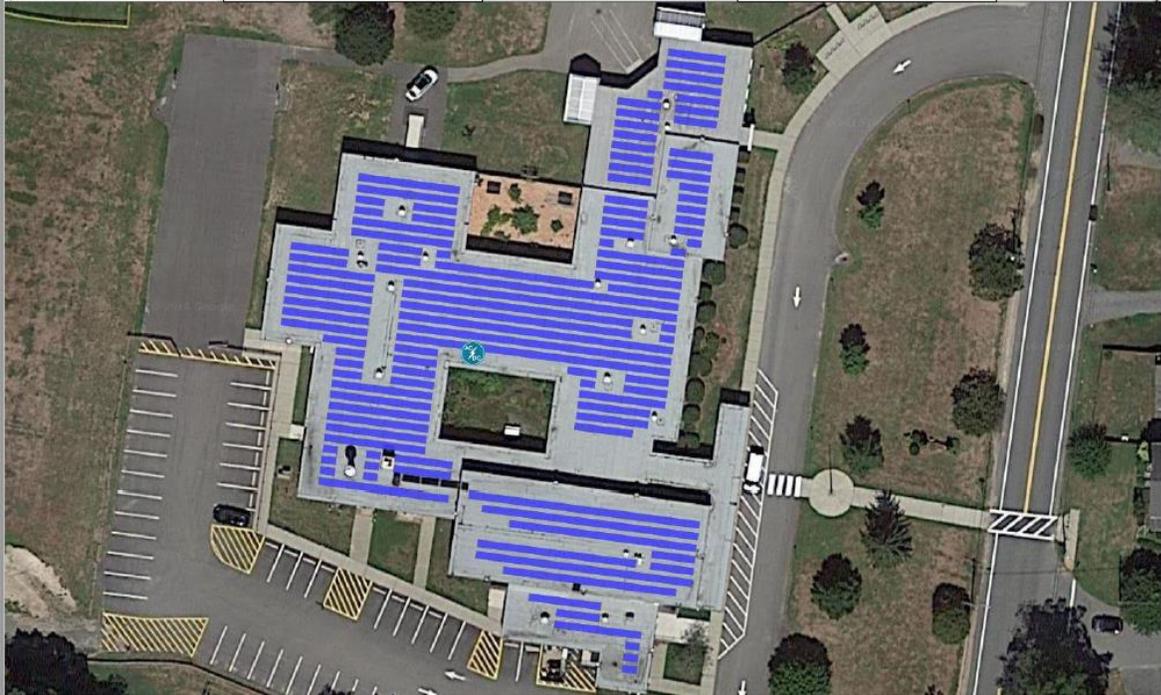


Site Location:
Sowams Elementary
364 Sowams Road
Barrington, RI

72 Cell modules
Landscape
350 Watt
Azimuth: 187.5 °
Tilt: 10°

System Size: 195.3 kW
Total Modules: 558

MJL
10/19/16



4) Power Purchase Agreement Rate Proposal and Financing

In order to offer PPA term flexibility, below are two PPA pricing options for the Towns to consider. Tangent is open to discussing additional PPA structures if the structures below do not meet the needs of the Town of Bristol and the Town of Barrington. It is understood that through the PPA, the Town of Bristol and the Town of Barrington will be purchasing all of the energy and environmental attributes generated by the system.

Tangent will utilize the federal investment tax credit of 30% of qualifying costs. Additionally, the project will utilize the federal modified accelerated cost recovery allowance for depreciation including the 50% bonus depreciation in year one resulting from last year's Omnibus spending bill.

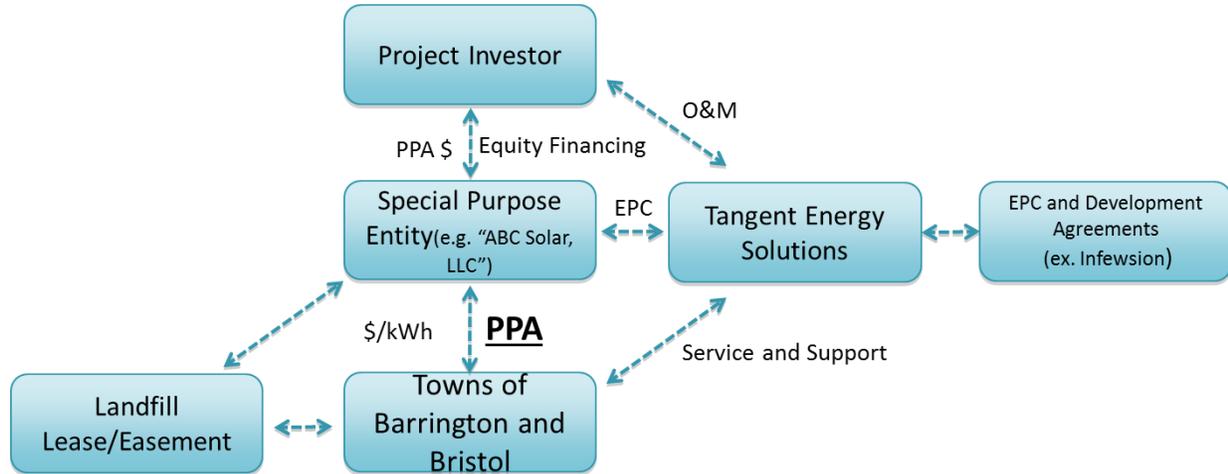
Below are Tangent's PPA rate offerings. The PPA rates assume the landfill solar project is selected by Natinal Grid to participate in the large scale solar allocation.

Option	Initial PPA Rate/kWh	PPA Term	Annual PPA Escalation Rate
#1	\$0.088	25 Years	1.50%
#2	\$0.079	25 Years	2.75%

The combined photovoltaic systems will produce over 10,000,000 kWhs of electricity per year. Both proposed PPA rates offer the towns a combined savings of over **\$25,000,000.00** over the project's lifetime. The savings assumes offsetting utility purchased power at \$0.149/kWh (from data supplied by towns) increasing at 3% per annum.

5) Project Financing

Tangent utilizes a network of project financing partners to invest in the project and have discussed this project with our investment group and have identified the tax equity and equity partner for this project. Our investment partners are very familiar with investing in “in front of the meter” utility photovoltaic systems and have funded Tangent projects with utilities such as Duke Energy, Georgia Power, Tennessee Valley Authority, Nevada Power and Delmarva Power. Below is the anticipated financing structure:



6) Tangent Organization

Management Team and Board of Directors

Led by a management team that has provided successful energy innovations to commercial and industrial (C&I) customers for 30 years, Tangent was organized in mid-2009 through venture capital funding and began operations in 2009 in Kennett Square, Pennsylvania. Tangent's team is a cohesive group of seasoned industry veterans with a proven track record in energy efficiency, demand response, renewable project development, power markets, utility operations, and infrastructure safety and reliability. Collectively, the team has over 150 years of recognized experience working with municipal, commercial, industrial, and institutional customers across North America. Additionally, there is tremendous support from an interactive, knowledgeable, and influential Board of Directors. Below is a list of Tangent's management team and Board of Directors.

Management Team			Board of Directors		
Dean Musser PE		Chief Executive Officer	Nora Mead Brownell		Founding Partner, ESPY Energy Solutions Former FERC Commissioner
Mark Schaefer		Chief Financial Officer	Donald Kendall		Founding Managing Director, Kenmont Investments Management, LP
David Turner		Chief Operating Officer	Scott Ungerer		Founder and Managing Director, EnerTech Capital
Steven D'Angelo		Vice President, Technology	Richard Grigg		Former President, FirstEnergy Utilities
Andy Meserve		Vice President, Sales	Jay C. Weber, Jr.		Founding Partner, Laurel Capital Partners
			Peter Brown		Energy Attorney Preti Flaherty
			Dean Musser, PE		President and Chief Executive Officer, Tangent Energy Solutions

Project Staffing

Members of the project team are among the most experienced in the industry in the areas of integrating Renewable Energy Design and Installation, Energy Information Presentment, Demand Management and on-site generation assets. Noteworthy experience includes the development, integration and optimization of on-site energy assets including diesel, gas-fired generation and solar energy assets.

Key Project Team Members	Role	Industry Experience
David Turner	Chief Operations Officer	<ul style="list-style-type: none"> ▪ 25+ years in energy services / 6 years with Tangent ▪ SVP Gestalt Energy & Utilities, creating the Energy and Utility practice ▪ Senior Executive Partner at Accenture, providing AMI, Smart Grid and Technology consulting services to Utility and ISO/RTO clients
Andrew Meserve	VP Sales & Solar Development	<ul style="list-style-type: none"> ▪ 15+ years of solar development experience / 6 years with Tangent ▪ Awarded for highest sales in North America among the GE solar team for several years. ▪ As Sales Manager at Astro Power, increased revenue by over 100% in 2002 and by 60% in 2003. ▪ Member of the Board of Directors of the Delaware Solar Coalition, and served two terms as VP of the Mid-Atlantic Solar Energies Association.
Steven D'Angelo – Project Mgr	Vice President, Technology	<ul style="list-style-type: none"> ▪ 18+ years in energy services / 6 years with Tangent ▪ Designed the Demand Response industry's first and largest 24x7 Network Operations Center (NOC) ▪ Combined largest C&I NOC with the largest residential DR NOC, which consisted of 529,000 residential customers. ▪ Designed and implemented the only non-utility distributed generation monitoring and controls system.
Paul Kergides	Senior Distributed Generator Technician	<ul style="list-style-type: none"> ▪ 5 years with Tangent ▪ 30 years maintaining Distributed Generation infrastructure including CAT, GE, Cummins, Generac, Kohler, and others. ▪ 10 years with remote monitoring and communications support ▪ Manager of electrical metering, data acquisition and server installations for compliance in DR programs.

Tangent project team members and their experience is included in the chart below.

Tangent and Infewision shall employ staff or subcontractors for the purpose of system repair who are based no more than fifty (50) miles from the systems to ensure a timely response to all unplanned repairs. Tangent staff or subcontractors working with electrical components on site shall meet at least one of the following requirements:

1. Bonded Journeyman or Master Electrician currently licensed in Rhode Island;
2. Apprentice Electrician with current apprenticeship in Rhode Island;
3. Technician with current NABCEP PV Installer certification;
4. Technician with maintenance training certification from component manufacturer in need of repair;

5. Technician sent by component manufacturer expressly for the repair of a component.

A list of potential subcontractors to be used on this project are:

1. Tower Resource Management, 16 Chestnut Street, Foxboro, MA
2. Synergy, 34 Main Street, Plymouth, MA
3. Heidrea Communications, 1 William Way, Bellingham, MA
4. Arc Design & Consulting, 409 N. Main Street, Elmer, NJ
5. RBI, 5513 Vine Street, Cincinnati, OH
6. Daniel Russo Electric, 135 Oak Ridge Pkwy, Toms River, NJ

A copy of the RI General Contractors License in accordance with RI General Law is provided in Appendix B.

7) Monitoring Platform

Tangent has developed proprietary software to not only monitor and predict the performance of on-site generation assets, but to also monitor and balance the supply and demand of a site's electricity load profile. The Towns of Bristol and Barrington will have full access to our Tangent AMP™ (active management platform) web based software to not only monitor the PV system, load, and power pool details, but to also offer the Towns the ability to participate in additional electricity savings strategies through capacity/transmission charge reduction, and additional power pool programs. The following page shows two screen shots of the Tangent AMP system.

We would welcome the opportunity to provide a live demonstration of the capabilities of this world-class software monitoring and control platform.

Whether using AMP™ to monitor and control the entire load and supply elements of a site, or to solely monitor and predict the performance of the on-site solar asset, AMP™ is a web-based tool that is a terrific way to demonstrate the positive benefits of clean, renewable energy. We have completed projects which have installed kiosks and other public-facing mechanisms displaying Tangent AMP to create excitement and support for renewable energy generation.



8) Equipment Specifications:

The below matrix details the proposed equipment for the project and the warranty periods. The equipment data sheets can be found in Appendix A. Tangent is open to equipment changes if the Town of Bristol and the Town of Barrington has preferences on vendors. Although the specific equipment warranties are listed, through the production guarantee in the Power Purchase Agreement (PPA), the town's will essentially have full system warranties for the live of the PPA contract.

Item	Part/Model #	Warranty
PV Modules	JA Solar 72 Cell	10 year workmanship, 25 year power
Inverter	Solectria (various models)	5 year workmanship
Landfill Mounting Hardware	GameChange Pour in Place	20 year workmanship
Ballasted Roof Mounting Hardware	Ecolibrium	20 year workmanship
Monitoring	Tangent AMP™	5 year workmanship
DC Combiner Boxes	SolarBOS	5 year workmanship
System Installation	Tangent	5 year workmanship

9) Landfill and brownfield Project Experience

Tangent has significant experience in developing photovoltaic projects on landfills and other soiled land. Below is a summary of 5 projects on landfills and brownfields. We are proud of our successful relationship with our clients and we are excited about the opportunity to build upon our past successes and work with the Towns of Bristol and Barrington to execute another solar energy project. Additional Tangent PV projects can be found in Appendix C.

	<p>1,300 kW Ground Mount System – DuPont Corporation – Parlin, NJ (operating - PPA): Tangent was selected to design, construct, own and operate a 1,300 kW photovoltaic system for the EI DuPont DE Nemours and Company in Parlin, NJ. The system was installed on a brownfield site requiring special attention to soil disruption and interconnection. This is one of many energy projects Tangent has with DuPont.</p>
	<p>1,950 kW Ground Mount – Wilmington Peninsula (operating – Utility Offtake): Tangent was the successful bidder in Delaware’s Sustainable Energy Utility SREC auction and subsequently secured site rights to develop this brownfield site. The system was installed on a remediated brownfield site using a ballasted mounting system.</p>
	<p>548 kW Ground Mount Ballasted Landfill – DuPont Corporation (operating - Utility Offtake): Tangent was the successful bidder in Delaware’s Sustainable Energy Utility SREC auction and subsequently secured site rights to develop this brownfield site. Construction utilized Delaware-made components and labor, and a ballasted ground-mount design.</p>
	<p>996 kW Ground Mount– Oakridge, TN (operating - Utility Offtake) Tangent has entered into a contract to build, own, and operate a 996.7kW ground-mounted PV system. The generated electricity will be sold to Tennessee Valley Authority (TVA) utilizing their Solar Feed in Tariff Program. The system was built on an old Department of Energy Landfill/Brownfield.</p>
	<p>1,231 kW Ground Mount Ballasted Landfill – DuPont Corporation, Wilmington, DE (operating – Utility Offtake): Tangent was the successful bidder in Delaware’s Sustainable Energy Utility SREC auction and subsequently secured site rights to develop this DuPont owned landfill site. Construction utilized Delaware labor, and a ballasted ground-mount design protecting the landfill cap.</p>

10)Tangent Energy Solutions Solar Project References

Career Institute of Technology

5335 Kesslersville Road

Easton, PA 18040-6720

Contact Name: Ron Roth

Phone: (610) 258-2857

Project Size: 498kW

Project Type: Roof and ground

Colonial School District

4118 Franklin Way

Lafayette Hill, PA 19444

Contact Name: Terry Yemm

Phone: (610) 825-1500 Ext. 8201

Project Size: 690kW

Project Type: Roof-mounted at three (3) schools

Bethlehem Area School District

1 E. Broad Street, #310

Bethlehem, PA 18018

Contact Name: Mark Stein

Phone: (610) 867-8635

Project Size: 1,600 kW

Project Type: Roof, ground, and parking canopy at five (5) schools

Yuasa Battery

2901 Montrose Avenue

Laureldale, PA 19605

Contact Name: Tony Campitelli

Phone: (610) 929-5781 ext. 123

Project Size: 240kW

Project Type: Roof-mounted

E. I. DuPont de Nemours

500 Cheesequake Road

Sayreville, NJ

Contact Name: Richard Derer

Phone: (732) 613-2063

Project Size: 1,350kW

Project Type: Ground-mounted

Eaton Corporation

12875 Corporate Drive

Cleveland, OH

Contact Name: Richard Gorze', CEM

Phone: (216) 523-4054

Project Size: 1,331kW

Project Type: Ground-mounted

11) Spare Parts and Materials Inventory

Tangent shall maintain the spare parts and materials inventory recommended by the equipment manufacturers. Tangent shall maintain maintenance records consistent with manufacturer requirements and Tangent's reasonable reporting requirements to the extent such reporting requirements do not conflict with manufacturer requirements.

Appendix A
Equipment Specification Data Sheets

Appendix B

RI General Contractor's License in accordance with RI General Law



Appendix C

Tangent Solar Project Experience

Tangent has completed and continues to build own and operate solar energy projects for clients throughout the region. The table below lists the solar development projects Tangent has been actively involved with.

	<p>50.4 kW Ground Mount System – DuPont Corporation – Parlin, NJ (operating):</p> <p>Resulting from Tangent’s key personnel’s long energy relationships with DuPont, Tangent was selected to design, construct and operate a 50.4 kW photovoltaic system for the EI DuPont DE Nemours and Company in Parlin, NJ. The system was installed on a brownfield site requiring special attention to soil disruption and interconnection. This is one of many energy projects Tangent has with DuPont.</p>
	<p>40 kW Roof Mounted System – DuPont Corporation – Wilmington, DE (operating):</p> <p>Tangent was selected to design, construct and operate a 40 kW photovoltaic system on the roof of DuPont’s new Renaissance building in Wilmington, DE. The Renaissance building is DuPont’s most recent office building construction project. The photovoltaic system is one of the building’s more prominent architectural highlights as it is situated at a 40° tilt on the front of the building’s roof.</p>
	<p>101 kW Roof, Ground and Parking Lot Covered – Lyn Hughes Group – Kennett Square, PA (operating - PPA)</p> <p>Tangent was selected to design, build, own, operate and sell the electricity production to the host through a power purchase agreement. The client wanted to utilize their roof, open ground and parking lot for a PPA. The system combined three PV arrays into one electrical distribution system and incorporated Tangent’s active asset optimization resulting in an 18% savings on total electricity expenditures.</p>
	<p>276 kW Ground Mount – James Buchanan Elementary School – Bethlehem, PA (operating – PPA)</p> <p>Tangent was selected by The Bethlehem Area School District to build, own, and operate the photovoltaic system, and sell the electricity production to the school district through a power purchase agreement. This location is one of five schools with a PV system. The solar savings are estimated to be over \$1,500,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,600,000 over the life of the agreement.</p>



270 kW Ground Mount – Spring Garden Elementary School – Bethlehem, PA (operating – PPA)

Tangent was selected by The Bethlehem Area School District to build, own, and operate the photovoltaic system, and sell the electricity production to the school district through a power purchase agreement. This location is one of five schools with a PV system. The solar savings are estimated to be over \$1,500,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,600,000 over the life of the agreement.



295 kW Roof Mount – East Hills High School – Bethlehem, PA (operating - PPA)

Tangent was selected by The Bethlehem Area School District to build, own, and operate the photovoltaic system, and sell the electricity production to the school district through a power purchase agreement. This location is one of five schools with a PV system. The solar savings are estimated to be over \$1,500,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,600,000 over the life of the agreement.



392 kW Ground Mount – Farmersville Elementary School – Easton, PA (operating - PPA)

Tangent was selected by The Bethlehem Area School District to build, own, and operate the photovoltaic system, and sell the electricity production to the school district through a power purchase agreement. This location is one of five schools with a PV system. The solar savings are estimated to be over \$1,500,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,600,000 over the life of the agreement.



378 kW Parking Cover Mounted – Freedom High School – Bethlehem, PA (operating - PPA)

Tangent was selected by The Bethlehem Area School District to build, own, and operate the photovoltaic system, and sell the electricity production to the school district through a power purchase agreement. This location is one of five schools with a PV system. The solar savings are estimated to be over \$1,500,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,600,000 over the life of the agreement.



347 kW Roof Mounted – Colonial Middle School, Plymouth Meeting, PA (operating – PPA)

Tangent was selected by The Colonial School District to build, own, operate, and sell the electricity production to the school district through a power purchase agreement. This location is one of three schools with a roof-mounted PV system. The solar savings are estimated to be over \$2,260,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,200,000 over the life of the agreement.



148 kW Roof Mounted – Colonial Elementary School, Plymouth Meeting, PA (operating – PPA)

Tangent was selected by The Colonial School District to build, own, operate, and sell the electricity production to the school district through a power purchase agreement. This location is one of three schools with a roof-mounted PV system. The solar savings are estimated to be over \$2,260,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,200,000 over the life of the agreement.



181 kW Roof Mounted – Plymouth Whitmarsh High School, Plymouth Meeting, PA (operating – PPA)

Tangent was selected by The Colonial School District to build, own, operate, and sell the electricity production to the school district through a power purchase agreement. This location is one of three schools with a roof-mounted PV system. The solar savings are estimated to be over \$2,260,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$1,200,000 over the life of the agreement.



502 kW Roof and Ground Mounted – Career Institute of Technology, Easton, PA (operating – PPA)

Tangent was selected by The Career Institute of Technology to build, own, operate, and sell the electricity production to the school district through a power purchase agreement. This site consists of a 242 kW roof-mounted PV array and a 256 kW ground-mounted PV array. The combined solar savings are estimated to be over \$1,000,000 over the life of the PPA and the additional savings from the active asset management are estimated to be an additional \$750,000 over the life of the agreement.



240 kW Roof Mounted – Yuasa Battery Corporation, Reading, PA (operating –PPA)

Tangent was selected to design, build, own, operate and sell the electricity production to the host through a power purchase agreement. Yuasa Battery wanted to utilize the roof of their battery manufacturing facility for the installation. The system is estimated to provide significant savings over the 20 year term of the PPA.



1,300 kW Ground Covered – Eaton Corporation, Beaver, PA (operating – PPA)

Tangent was selected to design, build, own, and operate the photovoltaic system, and sell the electricity production to Eaton Corporation through a power purchase agreement. Eaton wanted to utilize their open ground for the PPA.



171 kW Roof Mounted – Eaton Corporation, Moon Township, PA (operating – PPA)

Tangent was selected to design, build, own, and operate the photovoltaic system, and sell the electricity production to Eaton Corporation through a power purchase agreement. Eaton wanted to utilize their roof space for the PPA.



1,764 kW Roof and Parking Lot Covered – Assurant Corporation, Springfield, OH (operating - PPA)

Tangent was selected to design, build, own, and operate the photovoltaic system, and sell the electricity production to Assurant through a power purchase agreement. Assurant wanted to utilize their roof and parking lot for PPA.



100 kW Roof Mounted – Brunswick, GA (operating – Utility Offtake):

Tangent constructed and operates a 100kW ballasted roof mounted PV system. The roof is being leased from a real estate firm and the generated electricity is being sold to Georgia Power for 20 years utilizing their solar feed in tariff.



100 kW Roof Mounted – Augusta, GA (operating – Utility Offtake):

Tangent constructed and operates a 100kW ballasted roof mounted PV system. The roof is being leased from a real estate firm and the generated electricity is being sold to Georgia Power for 20 years utilizing their solar feed in tariff.



1,800 kW Roof Mount – City of New York, NY (operating – PPA)

Tangent partnered with altPOWER and were the successful bidders for a 1.8 MW PV system to be installed on four City owned buildings. The power is being sold to the City under a 20 year PPA.



60.695 kW Ballasted Roof Mount – The Shipley School, Bryn Mawr, PA (operating):

Tangent was selected to engineer, procure and construct a 60.695 kW ballasted roof-mounted PV system for the Shipley School.



32,200 kW Ground Mount– DuPont Corporation, Fayetteville, NC (operating – Utility Offtake):

Tangent secured site rights to develop this DuPont owned 120 acre site in North Carolina. Duke Energy purchased the project at commercial operations to be a component of their renewable energy generation.



117 kW Ballasted Roof Mount – City of Lovelock, NV (operating- Utility Offtake):

Tangent was selected to engineer, procure and construct a 117 kW ballasted roof-mounted PV system for the City of Lovelock, NV.



253 kW Ballasted Roof Mount – City of Lovelock, NV (operating - Utility Offtake):

Tangent was selected to engineer, procure and construct a 117 kW ballasted roof-mounted PV system at the Lovelock Meadows Waste Water Treatment Plant in Lovelock, NV.



1,826 kW Ground Mount – Elsmere, DE (operating - Utility Offtake):

Tangent was selected to engineer, procure and construct a 1,826 kW ground-mounted PV system in Elsmere, DE. Delmarva Power is the off taker off generated energy



350 kW Ballasted Roof Mount – Central Steel Supply (operating):

Tangent was selected to engineer, procure and construct a 350 kW ballasted roof-mounted PV system in Marlborough, MA. The system will provide a majority of the site's kWh requirements. The energy is being sold to Central Steel through a long term power purchase agreement.