

RFQL 3323
Attachment E, (Last Updated 10-07-2016)
Current Technology and Business Innovation (TBI) Focus Areas
NYSERDA Reserves the Right to Periodically Update this List

**Strategic Area –Transportation- Technical Contact: Adam Ruder 518 862-1090
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(1) Electric vehicles

Projects in this area focus on one of the following concepts:

- Advanced electrification technologies for medium- and heavy-duty vehicles;
- Cost reductions and usability improvements to EV charging stations and station installation procedures
- Business models and partnerships that improve the value proposition of EV battery packs through innovative second-life uses.

(2) Public Transportation

Projects in this area focus on one of the following concepts:

- Innovative light-weighting of rail cars;
- Advances in wayside energy storage for capturing and dispensing energy generated from regenerative braking of rail cars;
- Advanced bus efficiency and electrification technologies;
- Approaches to standardize and aggregate energy-saving technology purchases across multiple transit agencies.

(3) Smart Mobility

Projects in this area focus on one of the following concepts:

- Smart infrastructure sensing and communication technologies that enable the economically viable implementation of advanced parking or improved traffic flow;
- Connected vehicle technologies that improve traffic efficiency through communication with other vehicles, roadside infrastructure, and/or mobile devices used by pedestrians and bicyclists;
- Hardware/software combinations for connected infrastructure that enable functionality across different open source platforms and operating systems.

(4) Transportation Demand Management

Projects in this area focus on one of the following concepts:

- Technologies enabling the improved operability of shared mobility services and the provision of real-time public transportation information;
- Small-scale TDM services, such as car- and bike-sharing provided by a single employer, a multi-family housing complex, or a business improvement district.

(5) Freight Transportation

Projects in this area focus on one of the following concepts:

- Methods for reducing the impacts of last-mile deliveries that consider consolidation and

- distribution collaborations, or vehicle alternatives to trucks;
- Technologies that mitigate the noise pollution of deliveries to enable off-hour operations.

Strategic Area – Advanced Buildings Technical Contact: Joseph Borowiec 518 862-1090 ext. 3381

(6) Next Generation HVAC

Projects in this focus area will target activities related to:

- Solutions that improve the value proposition of cold climate heat pumps
- Compressor-less cooling systems that reduce electric demand compared to incumbent solutions while maintaining comparable efficiency, emissions, CapEx, and OpEx.
- Innovative control systems that results in a HVAC load reduction of 25% and enables real time optimization (e.g. arbitrage including dispatching of behind the meter renewables and modulation of HVAC operation)
- Reduction in thermal distribution system losses.
- Alternative/novel cooling methods for low-load Buildings.

(7) Smart Buildings

Projects in this focus area will target activities fostering innovations that:

- Improve communication, control and interoperability between the various building loads, onsite generation, storage, and the Grid.
- Enable energy management, demand resource (DR) capabilities, building to grid interaction (trans active energy), building occupant comfort and productivity, and provide resiliency.

Strategic Area- Renewable Generation: Contact Ravi Tetambe; 518 862-1090 ext. 3110

(8) Renewables Value improvement

Projects in this area will focus on innovations that will increase the economic viability of renewable resources by developing and demonstrating solutions that improve:

- capacity factors,
- energy value,
- balance-of-system hardware costs,
- O&M costs at existing and new sites for solar PV and wind power.

(8) Energy Storage Technology & Product Development

Projects in this area will focus on technologies that will:

- Improve the value proposition and accelerate the adoption of solar PV and wind power renewable technologies by fully monetizing grid benefits via integrating storage at distribution and load side
- Reduce costs of energy storage product hardware and balance of system,
- increase energy storage product performance and safety Increase grid resiliency and improve grid asset utilization.

(10) Water Resources Recovery Facilities- Net Zero Energy

Projects in this area will focus on activities that will:

- Energy Master Plans developed for the State’s largest WRRFs.
- Maximized installation of best practices at the State’s largest WRRFs resulting in up to 40% lower energy consumption at the WRRFs
- Reduced costs of installing best practices at large WRRFs.

- Greater utility involvement in large WRRF projects.
- New business models for public private financing of WRRF project.
- Increased generation of on-site energy from biogas resulting in reduction of energy requirements by up to 35%.
- New policies that facilitate interconnection of WRRF DERs to utility grid.
- Improved understanding of regulatory, feedstock supply, and economic issues associated with co-digestion of high strength organic wastes in WRRF AD systems.
- Improved understanding of physical impacts to AD systems associated with co-digestion of high strength organic wastes.
- Increased co-digestion of high strength organic wastes in the State’s largest WRRFs.
- Use of low-energy nutrient removal technologies that result in up to 50% lower energy consumption at the largest WRRFs in the State required to perform such treatment.
- Use of low-energy technologies that have shown promise elsewhere to achieve current and anticipated environmental goals set by state and federal regulatory agencies.

1090 Strategic Area- Smart Grid, Technical Contact: John Saintcross 518 862-

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(11) DER Integration and Community Engagement

Projects in this focus area will target activities leading to the following outcomes:

- Integration of DER at scale
- 5+% increase in system asset utilization
- Expand capabilities of DER to provide grid benefits
- Increased community-scale, resilient energy systems
- Tools to measure and improve resiliency developed and tested
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(12) Smart Grid systems – Efficiency and Performance

Projects in this focus area will target activities leading to the following outcomes:

- 5+ % increase in asset utilization
- Increased system-wide efficiency (reduced CAPEX and OPEX)
- Reduced transmission congestion
- Improvement in fault prediction, detection and accelerated service restoration
- Reduction in customer outage impacts (number and duration)

**Strategic Area Innovation Capacity, Technical Contact Jeffery Peterson 518
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(13) Investor Engagement

Projects in this focus area will build networks that can mobilize early-stage investment capital necessary to commercialize clean energy technologies and produce the following expected outcomes:

- Design and implementation of a program to de-risk venture and growth capital investments in cleantech startup companies through independent, third-party technical (commercialization) and business (market) screening/due diligence support.
- Programmatic and operational support for clean energy incubators in New York State.
- Design and implementation of an Ignition Grant program that would position incubator client companies to better attract and secure sufficient follow-on capital to commercialize cleantech products and bring them to market.