Resilient Energy Infrastructure Consortium (REIC) at Greentown Labs

Menu of

Technology, Service & Platform Topics

Topics can be melded into a webinar (or webinar series) … tailored to best suit your organization's needs and interests.

a) Integrated Climate Action Planning Process (ICAPP). [*Primarily for municipalities and campuses*]. Presenting ways to cost-effectively set up a climate action planning process (vs. a one & done plan that sits on the shelf) that:
   - leverages resources from every available nook & cranny,
   - employs cost-effective template derived from large database of best practices.
   - establishes metrics & targets, determines the baseline, and deploys economical ways to accurately track real-time progress.
   - evolves and adapts as new information comes in, new technology emerges, and projects/programs (pilot or widespread) are deployed.

b) Real-Time Grid Carbon-Tracking Tool. [*Primarily for municipalities and utilities*]. Accurate, affordable, and easily expandable tool used for planning (running scenarios), assessing GHG inventory and continuously tracking progress against goal. Tool can be ultimately expanded to implement carbon optimization control strategies.

c) Satellite Based Vegetation Management [*Primarily for municipalities and utilities*]. Presenting an on-line platform that helps utilities monitor and predict vegetation growth and fall risks around power lines and other assets. This platform helps to mitigate risks of outage, damage, and personnel injury, while fine-tuning trimming cycles and preserving safe/healthy vegetation at lower costs.

d) Energy Management & Optimization [*For businesses and utilities*]. Digital platform for eliminating energy waste and efficiently managing energy assets. Simple coordination between utilities and businesses unlocks demand-side contributions to grid reliability efforts. Utilities improve efficiency in load distribution and resource planning; businesses reduce costs and monetize distributed energy resources. Platform savings are paid forward to support equitable energy access.

e) Real-Time Electrical Distribution Asset Inventory and Inspection Tool [*Primarily for municipalities and utilities*]. Presenting an integrated on-line platform served by AI driven optical hardware mounted on any type of fleet vehicle that regularly inspects utility distribution assets and updates inventories as it drives by them performing other municipal or utility duties and services.

f) Commercial and Municipal Microgrids. [*Primarily for commercial, industrial, municipality, and campus facilities*]. Presenting ways that commercial, industrial, and municipal facilities can reduce energy costs and carbon footprint while building a foundation for facility resilience with behind-the-meter distributed energy resources DER, including existing gensets, battery storage and PV.

g) Residential Virtual Power Plants (VPPs). [*Primarily for municipalities, housing developments and neighborhood organizations*]. Presenting ways that communities can reduce energy costs and carbon footprint while building a foundation for community resilience.

h) Electric Vehicle Fast Charging with Integrated Energy Storage*. [*Any organization seeking to bolster its EV Fast Charging infrastructure*]. Fast EV Charging stations with Integrated Energy Storage can avoid costly electrical infrastructure upgrades while bolstering revenue streams through smart grid support. These systems also enhance community resilience. The story gets even better when incorporating these systems with PV carports, microgrids and VPPs.

i) Residential Air Source Heat Pumps with Thermal Storage*. [*Primarily for municipalities, housing developments and neighborhood organizations*]. Air source heat pumps are gaining greater acceptance as they get more efficient, more effective at lower temperatures and their costs come down. Their value gets a quantum boost with integrated advanced thermal storage capabilities. This feature allows users to ride through grid outages and secure added revenue stream through local utility grid support programs at a fraction of the cost of an electrical battery system. The story gets even better when incorporating these systems with PV microgrids and VPPs.

j) Novel Approach to Project Funding/Ownership. [*Primarily for municipalities and not-for-profit organizations*] Changes to crowd funded security laws has created some exciting new avenues to untapped sources of project funding for and community ownership of distributed energy assets. This approach brings more investment $$ to “main street” energy projects” and keeps it there.

k) Electric Vehicle Charging Software and Network. [*Primarily for property owners, businesses, and fleet operators*] This technology gives businesses and property owners the ability to efficiently manage and optimize multiple charge stations and locations in one platform. Advanced features, such as smart scheduling, dynamic access control and energy optimization provide site hosts more flexibility and affordability for their charger investment.

l) Zero-Carbon Baseload Electricity from Waste Heat. [*Primarily for manufacturers, producers, oil & gas, data centers and utilities*] This approach employs a customer-tailorable project development model and commercially proven, state-of-the-art technologies – to economically derive electric power from consistent industrial, food & beverage and deep well geothermal sources of heat.

m) Catalogued Datasets with Analytics for Environmental Management, Hazard Mitigation and Climate Adaptation. [*Primarily for utilities, insurance firms, municipalities, government agencies and NGOs*]. Extensive datasets developed through satellite, ground based, cloud and AI sources with powerful analytic tools and visualization features. Examples include regional air quality measurement and carbon emissions from wildfires. Datasets are continuously updated, and new applications regularly developed. Access to tools is through standard API formats.

n) A Drop-in Boiler Replacement with Integrated Electric Generator *[primarily for developers and municipalities]*. This system delivers both heat and resilient power for light commercial and large residential This is a ready replacement for existing building boilers. It provides ultra-high efficiency heating and electric power that can be used to offset electric usage and serve as bac-up power during outages. System can run on several different fuels, including natural gas, propane, biofuels, and hydrogen.

o) Very Low-Cost, Highly Optimized, Circular Economy Battery Energy Storage Systems. [*Primarily for utilities, developers, municipalities, and international NGOs*]. This system represents the prospect for dramatic cost decreases, both initial and TCO of greater than 50%, for battery energy systems of 40 kW and higher. This is achieved through patented advanced battery management system, artificial intelligence, micro-electronics and repurposed or very low-cost battery cells. System operation and economics are getting proven in commercial settings in UK. Company, now with Greentown-based CEO, is looking to do the same in the US.

Most topics are covered by REIC partners offering specific technologies and/or services. Beacon Climate is adding firms and topics on a regular basis. Please check back for updates by emailing mazzam@beaconclimate.com.