



PILOT PROJECTS GOVERNANCE BOARD

Meeting No. 10

April 22, 2021

Ms. Brinda Westbrook-Sedgwick
Commission Secretary
Public Service Commission
of the District of Columbia
1325 G Street, N.W., Suite 800
Washington, D.C. 20005

Re: The Investigation into Modernizing the Energy Delivery System for Increased Sustainability, GD-2020-02-M

Dear Ms. Westbrook-Sedgwick,

Attached please find the Pilot Projects Governance Board's March meeting minutes. Should you have any questions regarding this filing, please contact me directly.

Best Regards,

/s/ Anjali G. Patel

Anjali G. Patel
Pilot Projects Governance Board Secretary



Pilot Project Governance Board

Meeting No. 10

April 22, 2021

3:04 pm

Meeting Minutes
(DRAFT)

Commission Facilitator called the Meeting to Order at 3:06 pm.

List of Attendees:

Board Member Organizations in Attendance (Quorum present)

- Solar United Neighbors of DC – **Present**
- DC Chapter of the Sierra Club – **Present**
- DC Consumer Utility Board (“DC CUB”) – **Present**
- Office of the People’s Counsel for the District of Columbia (“OPC”) – **Present**
- Maryland-DC-Delaware-Virginia Solar Energy Industries Association (“MDV-SEIA”) – **Present**
- District Department of Energy and Environment (DOEE) – **Present**
- Greater Washington Urban League (“GWUL”) – **Absent**
- Apartment and Office Building Association of Metropolitan Washington (“AOBA”) – **Present**
- Commission Staff – **Present**

II. General Business

Purpose of the meeting was to have presentations from individuals/agencies who have specific information regarding potential pilot projects and to have an opportunity to ask questions from some of the Request for Papers submission authors.

III. Meeting

- **Presentation by NREL on Advanced Virtual Power Plants (3:11-), Andrey Bernstein, Senior Researcher**
 - *Real-Time Optimization and Control of Next-Generation Distribution Infrastructure
 - *Funded by ARPA-E, completed in 2020
 - *Focus on distribution feeders, microgrids, and soft microgrids (e.g. campuses and communities)
 - *Wanted to acknowledge both customer and system constraints to large-scale DER integration

*Three main objectives: emulating virtual power plants, maximizing social welfare, and ensuring voltage and power quality. The power point is emulated at the point of connection, including both primary and secondary frequency response and following dispatch signals.

*Generator will adjust production/consumption based on frequency change (primary response) and an inertial response. Aim was to disaggregate the two constants so that the feeder performs like a generator.

*incorporate technological equity based on location of device on feeder

*have two devices: (1) central control at main feeder, gathers system-wide information (e.g. voltage measurements, and top of power flow), computes a signal to identify any violations. Broadcasts general information to all devices listening to signal not point to point; the program is agnostic of communication protocol, e.g. price signal; (2) local controller- determines next set point, local controllers can be placed flexibly on either individual sources or to aggregate sources

*acts as single resource from perspective of distribution system

*closed loop, feedback-based system that reads data and optimizes setpoints every second. Developed a feedback system because some items cannot be controlled. Can infer uncontrollable loads from feedback.

*agnostic as to which standard communication protocols are employed

*trip plans – looks several minutes ahead, VPP signal updated every second including communicating and altering advanced inverter settings

*Hardware in the loop (in-between being out in the field, and in the lab) to test technologies

*Systems can help increase hosting capacity

*Have two field deployments- Stone Edge Farm in California, Basalt Vista Affordable Housing Project in Colorado

- **Presentation by Building Energy Performance Standard Program, DOEE, Katie Bergfeld**

*Required first BEPS by January 1- established through rulemaking. Posted both on DOEE's website and published in DC Register.

*Rulemaking on implementation, public comment closed on March 1. DOEE is in process of reviewing the comments.

*Meeting with task force to review issues.

*Will be issuing a preliminary guidebook in the next few months.

*Two main compliance pathways: (1) performance pathway, reduce site intensity by 20% over year period; (2) prescriptive pathway- action-based DOEE spells out actions building owner needs to take, don't measure whether achieve actual savings. Every building will be given a year longer to comply. By Feb 1, 2023, building needs to select which pathway want to follow.

Two additional pathways: (x) Standard target pathway—required to meet BEPS; only available for higher performing properties; (y) Alternative compliance pathway- custom but need to show is comparable to performance pathway and meeting other requirements.

*By 2026 need to meet the outcomes of pathway, April 2027 need to show results

*EnergyStar score model based on square footage of whole building. But provisions in EnergyStar program that allow consideration of vacant space for particular buildings, especially for commercial buildings.

- *BEPS established based on 2019 benchmarking data.
- *buildings that fail to comply with pathway, will be required to comply with alternative compliance penalty.
- *all of the compliance penalties will be funneled into SETF fund
- *Need to make sure PP are aligned with the pathways buildings elect for the BEPS standards
- *Resource options: (1) Green Bank has some products out already including pre-development loans; working together to develop products for lower-resourced building owners; (2) DCSEU, (3) Building Innovation Hub- will serve as a technical resource

- **Q&A with UtilityAPI, Devon Hampton CEO**

- *Help utilities share private and secure data on utility usage
- *Not used primarily for grid planning
- *platform allows only for data that has been consented to be shared. To date, their service is for individualized customers; have functionality to aggregate but have not been used for that yet.
- *Data is made available as soon as available to UtilityAPI—data pipe, they are not running meters.
- *platform service. the back-end offers utilities to wide label the platform and make it part of their offerings. Utility customer now has tools available to them as part of workflow. Big commitment to privacy; do not share who the data is being shared with if not working with the utility directly. If working with non-utility third parties, would like utilities to be part of the data-sharing service offering.
- *by using the tool, matches the way data is being provided by other utilities around the country to DERs- standardized output
- *not just for planning stages; most use cases are ongoing, energy management contract, demand response, battery installations. Do not need more hardware to understand how system is performing, need software.
- *more hardware is not needed for secure data sharing, requires software to share data in a secure manner
- *system is not just interval data, also includes billing and cost data. If multiple accounts have multiple meters, can disaggregate data based on meter.
- *30 different jurisdictions using standard authorization form. Want customers to have a clear idea of what they are consenting to. Four sections: (1) who you are sharing with and why, (2) what data sharing, (3) for how long, and (4) what parts of system. Customer will get sent a receipt for what they authorized and instructions on how to turn it off.
- *use green button connect standards. Wanted to make an easy customer, DER, and utility experience and provide a standardized format for the data.

- **Q&A with Opus One, Mark Hormann, Josh Wong (Founder and CEO), Ben Ullman**

- *Software platform for end-to-end distributed energy management
- *Model grid in a digital twin, physics based modeling; examine transactive energy, DER trading on network level.
- *DER Management System (DERMS) communicate directly using standard protocols (e.g, DMP3 off SCADA, open DER, or IEEE.25). DERMS tool is an aggregator of aggregators.

- *what is process for ensuring system stays in line with changing grid topology. Distribution twin kept in line; if topology changes, the twin is updated accordingly.
- *Cost-minimization can occur on both real-time level with respect to dispatch or on cap-ex planning level (e.g. NWA). Example— if 10% solar required xx upgrades, could identify that, but would be up to utility to identify costs.
- *Optimize for the system to reduce overall system costs not just individual devices (i.e. minimize costs to from impacts on capacity banks, congestion)
- *Data is the biggest barriers to developing system
- *Have worked with utilities with no data, and based analyses on operating envelopes; have digested a one-time data report; to full-SCADA and utility room coordination
- *The Transactive Energy Management System (TEMS) allows for peer-to-peer trading between consumers. E.g. Can put in a micro-PPA to sell off extra energy to other users who can then respond to purchase extra output. Could potentially alter power flow.
- *utility also has option to contract to address constraint management
- *interconnection visibility- public portal where customers can submit own projects and they can perform an interconnection check. Not static like many current hosting maps. Does not replace internal full-scale engineering analysis, but provides an interim step between static map and dynamic hosting capacity.
- *Value-stacking is both distribution value and PJM value. Allows the utility or the regulator to pass those prices/revenue streams onto the DER in operation. Challenge is determining appropriate value to stack and what values to pass on. Some projects have struggled with these decisions. Have both day-ahead and real-time visibility and can make sure the DER operations are grid safe. Need spot metering since looking at hourly pricing.
- *demonstrating peer-to-peer transaction layer in the UK

- **Q&A with Center for Renewables Integration, Harry Warren**

- *Data needed – from Pepco historic usage, for PJM- access should be available
- *Virtual power plant could mesh with concept – how VPP could be called upon in the future grid state of deep renewable integration
- *could help define the dynamic pricing signals that could meet the needs of the grid.
- *e.g. re generation forecasts change throughout the day. Would like to call on an intra-day pricing concept, guide dynamic pricing to adjust to that. Don't have one that looks like that, but pilot would define similar.
- *If grid response requires modulating demand; don't think that impacts topology. But if have onsite generation/storage looking to export, there are some constraints on the LVAC if you want to consider responsiveness that includes exporting power using on-site DER
- *As analytical modeling doesn't have regulatory barriers, but implementation barriers around providing distribution/bulk level DER services. Order 2222 is going to push boundaries further. Needs some evolution in the PJM market to encompass the types of services that can be provided.
- *want to pick building types that cover typology of DC market (i.e., commercial, office, multi-family, schools, hotels); want to capture how much grid resources are being used/offered and what the future will look like
- *don't expect that every building will offer same kind or same amount of grid responsiveness
- *benchmark on costs can be difficult as do not have revenue side information

- *building design elements that can move us to more responsiveness in the future
- *interesting idea to follow a GHG signal
- *Princeton – exercise the system to follow a synthetic signal

V. Action Items & Deadlines

- Subcommittees updates will be provided over email.
 - Microgrid Subcommittee – Meeting weekly and in process of scoping/drafting RFP
 - VPP Subcommittee - Has outlined RFP and working on draft
 - Heat Pump Subcommittee – Has outlined RFP and working on draft
 - Solar/Comms Subcommittee – Has held meetings and drafted RFP
 - Bus/V2G Subcommittee – Has outlined RFP scope
- Next meeting May 20, 2021 from 3-5pm

VI. Adjournment

Commission Chair adjourned the meeting at 5:22 pm
