

# DOE distributed energy Vermont meeting

- Dept. of Energy invited VELCO to co-host the last of a series of state/regional meetings
  - Voices of Experience: Integrating Intermittent Resources
- Feb. 23, Essex Resort, Essex Jct., 9am — 3pm
- Format intended to be highly interactive, participatory
- Small “steering group” of DU folks advising on agenda and participants
- Target groups (draft): VT DUs, regional DUs, ISO-NE, VSPC members, others
- Sample agendas from prior meetings and draft list of VT topics attached

**Voices of Experience | Integrating Intermittent Resources**  
**Vermont/NE Region Possible Topic Areas**

**1. Distribution Planning and Forecasting**

- How are you approaching distribution planning (and integrated resource planning) as larger numbers of intermittent resources become part of the generation mix?
- How are you including or accounting for these resources when forecasting generation?
- What is the impact of weather on forecasting efforts?

**2. Smart Inverter Experience and Functionality**

- What key functionalities are you finding that the inverters are capable of providing? Is this in line with your expectations?
- How are inverters functioning in the field compared to what was seen during testing? Have there been any differences or surprises?
- What are you learning about the various smart inverter functions and how they can (or cannot) mitigate issues with intermittent resources?

**3. Engaging Customers: Managing Expectations and Educating Consumers**

- What are effective strategies for educating customers about DERs?
- What approaches are you using to manage customer expectations (e.g., talking to customers about future bills and what to expect from their PV installations)?

**4. Interconnection Application Process and Web Interface**

- What were the considerations for developing an online platform?
- Have you been able to easily integrate with customer systems or modify billing systems to accomplish project goals?
- What application screens are you using? Have screening methods or criteria changed with growing experience?
- What is the impact unresponsive customers or application sunseting?

**5. Operating Differently**

- How are intermittent resources changing operations?
- Are there foundational technologies that utilities will need to operate with higher levels of intermittent resources?

**6. Changing Organizational Structures**

- How are these new resources changing the utility culture?
- Have there been changes to your organizational structure? What new organizational changes have been implemented or are being considered?

## **7. Hosting Capacity**

- What are the key considerations in determining your Hosting Capacity studies?
- What are the major challenges you face with Hosting Capacity studies?
- What tools are you using and what are the challenges with model and data integrity?
- Do different penetration levels require/lend themselves to different approaches?



**DOE Working Group Onsite Meeting Agenda**  
**Pepco Holdings Corporate Offices**  
**701 9th St NW, Washington, D.C. 20001**  
**Thursday, December 8, 2016**  
**9:00 a.m. – 3:00 p.m.**

**9:00 Pepco and DOE Welcome and Introductions**

*William R. Ellis, Pepco Holdings*

*Eric Lightner, DOE Office of Electricity Delivery and Energy Reliability*

**9:20 Review Draft Document**

*Sonja Berdahl, National Renewable Energy Laboratory*

- Have we covered the right topics? Are any topics missing?
- Should we include a note to regulators? What would it say?

**9:45 Engaging Customers: Managing Expectations and Educating Consumers**

**Presentation:** *William R. Ellis, Pepco Holdings*

**Facilitated Discussion:**

- What are effective strategies for educating customers about DERs?
- What approaches are you using to manage customer expectations (e.g., talking to customers about future bills and what to expect from their PV installations)?

**10:30 Break**

**10:45 Interconnection Application Process and Web Interface**

**Presentation:** *William R. Ellis, Pepco Holdings*

**Facilitated Discussion:**

- What were the considerations for developing an online platform?
- Have you been able to easily integrate with customer systems or modify billing systems to accomplish project goals?
- What application screens are you using? Have screening methods or criteria changed with growing experience?

**11:30 Advanced Inverter Testing**

**Presentation:** *Sarah Cunningham, Pepco Holdings*

Pepco's work on advanced inverters in the secondary network and update on installation already in service.

**Facilitated Discussion:**

- What have you learned about programming/communicating with smart inverters?



- What are you learning about the various smart inverter functions and how they can (or cannot) mitigate issues with intermittent resources?

**12:15 Lunch – Hosted by Pepco Holdings**

**12:45 Operating Differently and Changing Organizational Structures**

**Presentation:** *Steve Steffel, Pepco Holdings*

Organizational structure and the supporting automation created for analyzing high volumes of small applications, information reviewed and output generated from a tool that does secondary voltage rise analysis and progress on the fully automated solution Pepco is developing.

**Facilitated Discussion:**

- How are these new resources changing the utility culture?
- Have there been changes to your organizational structure? What new organizational changes have been implemented or are being considered?
- Are there foundational technologies that utilities will need to operate with higher levels of intermittent resources?

**1:30 Hosting Capacity**

**Presentation:** *Amrita Acharya-Menon and Sarah Cunningham, Pepco Holdings*

Radial and secondary network hosting capacity efforts.

**Facilitated Discussion:**

- What are the key considerations in determining your Hosting Capacity studies?
- What are the major challenges you face with Hosting Capacity studies?
- What tools are you using and what are the challenges with model and data integrity?

**2:15 Break**

**2:30 Distribution Planning and Forecasting**

**Presentation:** *Steve Steffel, Pepco Holdings*

Weather forecasting –Sky Based, Bell Weather Station Based, Cloud Movement–and Impact on peak load.

**Facilitated Discussion:**

- Is distribution planning being integrated into the resource planning process?
- What key components need to be considered?
- What new tools are you using or will be needed in the future? Is new data required or new analytical tools?

**3:00 Adjourn**

**Voices of Experience Working Group Onsite Meeting Agenda**  
**Salt River Project Tempe Service Center Facility**  
*110 W Elliot Rd, Tempe, AZ 85284*  
**Thursday, November 3, 2016**  
**9:00 am – 3:00 pm**

**9:00 am DOE and SRP Welcome and Introductions**

*Eric Lightner, Office of Electricity Delivery and Energy Reliability (DOE OE)*  
*Vanessa Kisicki, Salt River Project (SRP)*

**9:20 am Smart Inverter Experience and Functionality**

- **SRP Pilot Overview and Lessons Learned**

*Catherine O'Brien, SRP, Sr. Engineer, Policy, Procedures & Standards*

- Project Development and Execution
- Retrofitting Inverters

- **Participant Experience and Observations, Facilitated Discussion**

*Sonja Berdahl, National Renewable Energy Laboratory (NREL)*

- What key functionalities are you finding that the inverters are capable of providing? Is this in line with your expectations?
- How are inverters functioning in the field compared to what was seen during testing? Have there been any differences or surprises?

**10:45 am Smart Inverter Testbed Tour**

*Scott Scharli, SRP, Sr. Planning Analyst, Customer Program Innovation*

- Developing a Testbed: Set up, Challenges, Considerations
- Inverter Testing: Lessons learned and Test considerations

**11:30 am Lunch – Hosted by SRP**

**12:00 pm Customer Service Implications**

- **SRP Experience,**

*Karen Collins, SRP, Manager, Residential & Commercial Solar*

- **Participant Experience and Observations, Facilitated Discussion**

*Sonja Berdahl, NREL*

Managing the customer side of the project

- What is unique about communicating with customers about a project versus regular/typical customer interactions?
- What type of concerns do customers have when considering participation in pilots? (e.g., privacy)

Challenges around integrating with customer systems or using customer data

- Have there been unexpected challenges with accessing customer data?
- Have you been able to easily integrate with customer systems or modify billing systems to accomplish project goals?

Educating and communicating with customers

- What approaches are you using to manage customer expectations (e.g., talking to customers about future bills and what to expect from their PV installations)
- What aspects are most important to educate consumers about?
- Is it important to talk about how the utility is greening its generation mix? Is this becoming increasingly important to customers?

**12:45 pm    Operational Implications**

- **SDGE Experience**, *Tom Bialek, San Diego Gas and Electric, Chief Engineer*
- **Participant Experience and Observations**, *Facilitated Discussion*  
*Sonja Berdahl, NREL*

Operating Differently and the Changing Utility Culture

- How are intermittent resources changing operations?
- Will the grid be operated differently in the future? What new skills and technology will be needed? Will operators need to respond to disturbances differently?
- How are these new resources changing the utility culture?
- Have there been changes to organizational structure? What new organizational changes are being considered?

**1:30 pm    Break**

**1:45 pm    Hosting Capacity Methods and Approaches**

- **SRP Experience**, *Greg Adams, Manager, SRP, Grid Planning & Performance*
- **PG&E Experience**, *Tom Russell, Senior Engineer, Integrated Grid Planning*
- **Participant Experience and Observations**, *Facilitated Discussion*  
*Sonja Berdahl, NREL*
  - What do utilities need to think about when choosing a hosting capacity method? What key variables need to be considered?
  - Do different penetration levels require/lend themselves to different approaches?

**2:30 pm    Review Draft Document**

- Discussion of document outline: Have we covered the right topics? Are there topics that are missing?
- Should we include a note to regulators? What would it say?

**3:00 pm    Adjourn**