



November 1, 2019

To: Registrants for the PLMA DER Integration Interest Group workshop, Mon. Nov 4
RE: Pre-read Materials

This email (with attachments) is designed as a pre-read for the DER Integration Interest Group workshop; don't worry, we'll also go over everything when we meet on Monday afternoon. However, we want to give you some material to think about ahead of time if you wish. (Based on the history of this Interest Group, the organizers reserve the right to update pretty much all of this information prior to, or during, or even after, the workshop.)

This workshop will be organized around an exercise in which teams of participants will imagine DER offerings to meet the distribution services needs of specific hypothetical circuits. The utility responsible for these circuits has a budget that it will spend either on your offering or on traditional distribution equipment to meet these needs. During this exercise, you'll break up into four teams, and propose technologies, incentives, customer strategies, and supporting information for your DER offering that meets the needs described. You'll report out to the rest of the teams at the end of the workshop on your proposed solution.

Below we describe the makeup of the circuits, the load shapes for different types of customers, and the tariffs in place for residential and commercial customers.

RATES:

Specifically, the four teams will be organized around the four tariffs, so let's start there:

- Tariff 1: Residential – Advanced TOU
- Tariff 2: Residential – Day Ahead Pricing
- Tariff 3: Commercial – Real-Time Pricing
- Tariff 4: Commercial – Critical Peak Pricing

The details of each tariff are found in the attached spreadsheet, **Rates.xlsx**.

CIRCUIT CUSTOMER COMPOSITION AND ASSUMPTIONS

- 12,000 current residential customers
 - 10% have solar
 - ½ of those have storage
 - Expected Solar + Storage penetration to be at 30% by 2023
 - All customers have electric hot water heaters
 - All customers have central air conditioning
 - 1% of residential customers have EVs
 - 5% by 2023
 - 10% by 2025

- 5,000 additional residential customers expected based on the following schedule:

2022	2023	2024	2025	2025
1,000	2,000	2,000	0	0

- 200 Commercial customers
 - 20% with 500kW demand
 - 50% with 250kW demand
 - 30% with 100kW demand
 - 3 customers with EV fleets
 - Total kW = 140kW
 - Fleets completed with field operations by 4:30PM daily
- All customers have AMI data
- All meters can be pinged from inside the house/building via SEP2.0

LOAD SHAPES:

- Shape 1: Residential – Base
- Shape 2: Residential – With Solar
- Shape 3: Residential – With Solar and Storage
- Shape 4: Commercial – Small
- Shape 5: Commercial – Medium
- Shape 6: Commercial – Large

Details can be found in the attached **LoadProfiles.xlsx**

We look forward to seeing you all in St. Petersburg, and to a lively workshop.

Many thanks,

PLMA Interest Group Co-Chairs

John Powers, Extensible Energy

Rich Barone, Hawaiian Electric

Jamie Coffel, Honeywell Smart Energy