MEMORANDUM

TO: Power Committee Members

FROM: Tina Jayaweera, John Ollis

SUBJECT: Demand Response Process for 2021 Power Plan

BACKGROUND:

Presenter: Tina Jayaweera

Summary: In preparation for the 2021 Power Plan, staff will be providing the Power Committee a series of presentations on different aspects to developing the Plan. This presentation will be on the development of demand response supply curves.

Relevance: Demand response is one of the options considered by the Regional Portfolio Model when determining a low-cost resource mix for the plan horizon. To analyze DR in the RPM, staff develops a supply curve, that provides bundles of the amount of DR available at different price points, with information on seasonal attributes.

Workplan: A.2.1 Prepare DR supply curves for the 2021 Plan

More Info: In 2015, staff provided an overview of DR methodology in the plan for the Seventh Plan.  
What is Demand Response

Demand response is a non-persistent intentional change in net electricity usage by end-use customers from normal consumptive patterns in response to a request on behalf of, or by, a power and/or distribution/transmission system operator. This change is driven by an agreement, potentially financial, or tariff between two or more participating parties.

*Defined by DRAC Aug 2017*
How DR Fits in the Plan Process

- Environmental Methodology
- Frozen Efficiency Load Forecast
- Financial and Economic Assumptions

Demand Response Supply Curves

- Resource Strategy Analysis
- Resource Adequacy

Types of DR

- **Firm**
  - Allows either interruptions of electrical equipment or appliances that are directly controlled by the utility or are scheduled ahead of time.

- **Non-firm**
  - Outside of the utility’s direct control and are driven by pricing.
General Approach

Define DR Products
Estimate Technical Potential
Estimate Achievable Potential
Calculate Levelized Costs
Develop Supply Curves

How to Estimate Potential

Methodology

Bottom-Up

Per unit impact* # of units
End-use or equipment based
Direct load control of water heaters

Top-Down

Savings as a percent of load
Facility-based or multiple end uses
Demand Curtailment

Peak load impact

Suitable products

Examples
Workplan for 2019-2020

- **Q2 2019**
  - Select firm products
  - Decide on non-firm options

- **Q3-Q4 2019**
  - Estimate costs, impacts, achievability for products
  - Estimate ramp rates (align with EE)

- **Q4 2019- Q1 2020**
  - Estimate achievable potential

- **Q1 2020**
  - Develop bundles for RPM

- **Q3 2020**
  - Action Plan recommendations