Demand Response Modeling Methodology in the Regional Portfolio Model

PNDRP Meeting

February 25, 2015

Northwest **Power** and **Conservation** Council

SEVENTH
NORTHWEST
POWER PLAN

Council's Analytical Process Flow
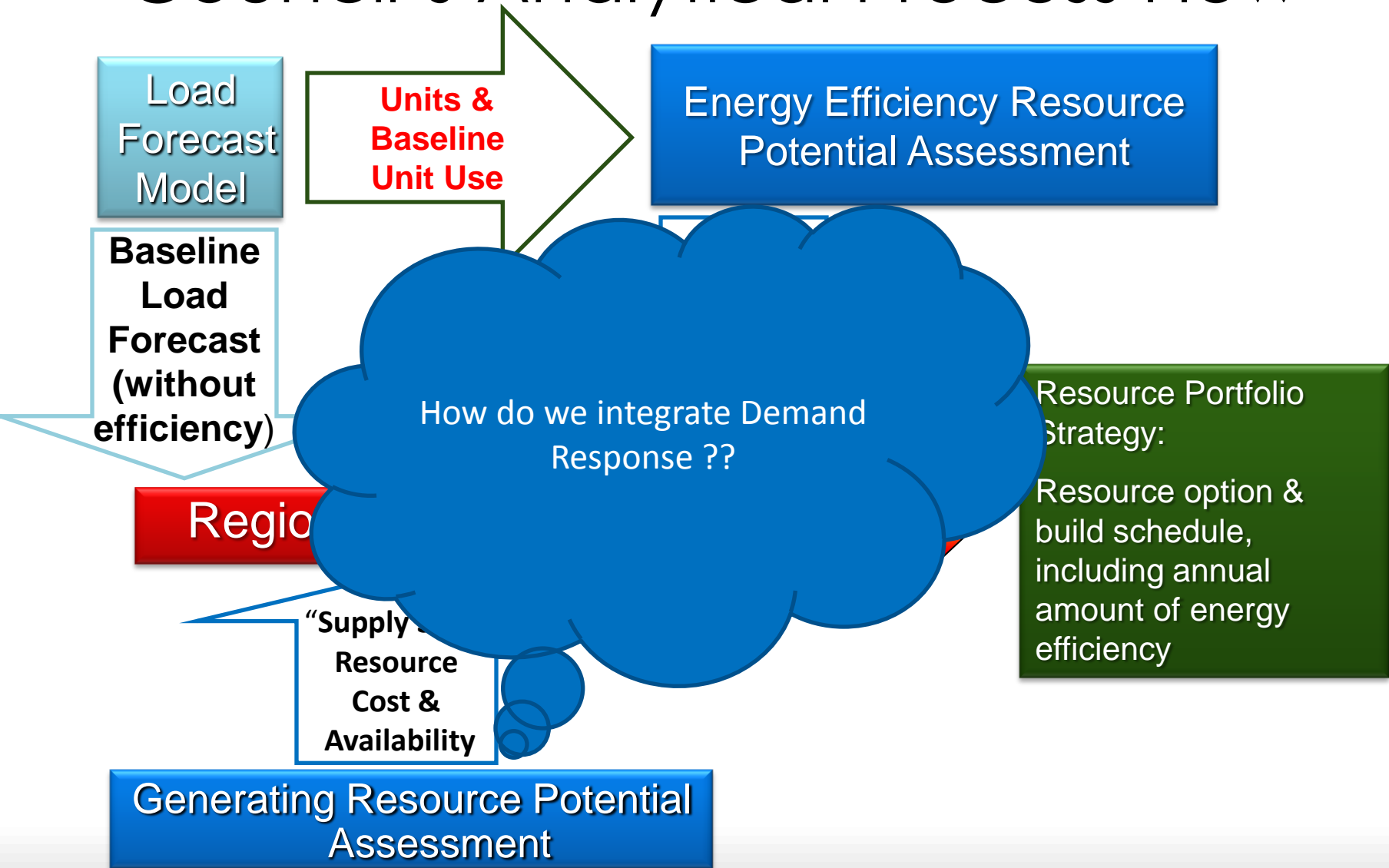
Some Demand Side Management Categorizations

Supply Sources
- Residential

- Commercial

- Agricultural/Industrial

Dispatch Method
- Basic

- Automatic *(Smart)*

Firm or **Non-Firm**

Distinguishing New DR Resources

Main Drivers in RPM for New DR Acquisition

- Summer and Winter Peaking Capability

- Cost

Northwest **Power** and **Conservation** Council

SEVENTH NORTHWEST POWER PLAN

Developing Demand Response Inputs in RPM

- Leverage Navigant Demand Response Potential study and stakeholder responses to the study for cost and potential .

- Generate DR Supply Curves/Resources that address *peak demand* uses of DR for selection in RPM.

  - *Demand response used for other purposes not easy to model without further RPM enhancement.*

Acquisition Methodology in RPM

How will the RPM acquire DR?

- New DR resources will be acquired similarly to a new supply-side resource in the RPM.

- One or more DR resources can be designated as new resource types.

  Each new resource adds to model solution time.

Northwest **Power** and **Conservation** Council

SEVENTH **NORTHWEST POWER PLAN**
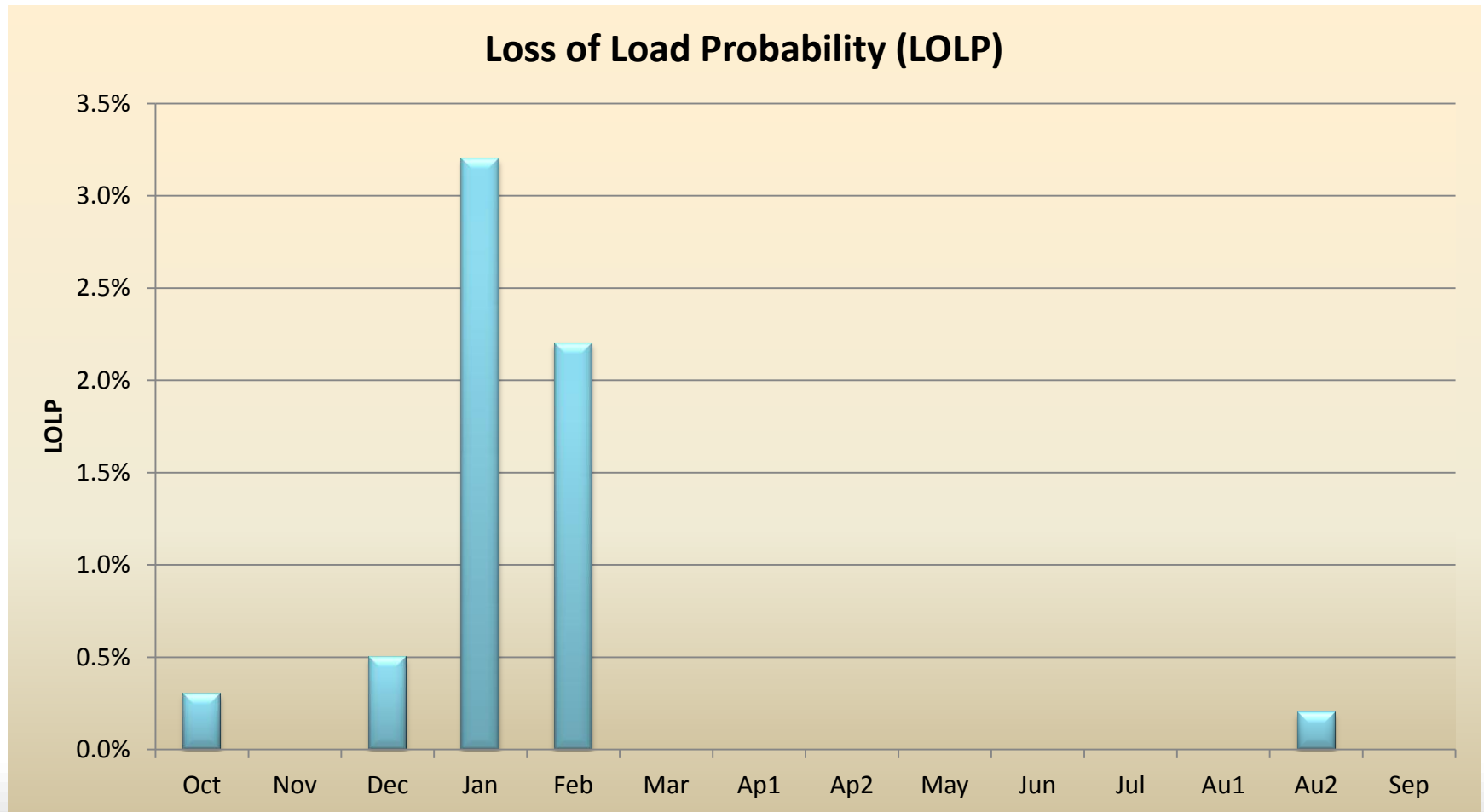
Situations to Acquire DR in RPM

When will the RPM likely acquire DR?

- When it is economic and least cost

But more likely…

- When there is insufficient peak capacity to meet system peak demand

Northwest **Power** and **Conservation** Council

SEVENTH
NORTHWEST POWER PLAN

Resource Adequacy as a Guide

Loss of Load Probability (LOLP)

Northwest **Power** and **Conservation** Council

SEVENTH
NORTHWEST POWER PLAN

Seasonality Matters

Reliability Assessment tells us...

- More of a need for additional winter peak capacity will address a majority of the resource adequacy issues in 2019.

Should new DR resources delineated by seasonality?

Northwest **Power** and **Conservation** Council

SEVENTH **NORTHWEST POWER PLAN**

But in the RPM, Cost Matters More…

1. In new resource selection in the RPM, cost will likely matter more than summer and winter shape.

2. Less cost variation in bins makes new resource selection more representative.

3. More even depth in bins makes new resource selection more representative

Is What Comes Out of the RPM the Plan?

- The RPM results *will* guide parts of the narrative in the Plan.

- The RPM results *are NOT necessarily* the same as the resource strategy recommendations for the Plan.

Questions?

Northwest **Power** and
Conservation Council

SEVENTH
NORTHWEST
POWER PLAN