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September 4, 2013

## MEMORANDUM

**TO:** Power Committee

**FROM:** Charlie Black, Power Planning Division Director

**SUBJECT:** Current Context for Power Planning Under the Northwest Power Act

During development of the Sixth Northwest Power Plan Mid-Term Assessment, several regional interests provided comments requesting the Council to address significant changes that have occurred since the Northwest Power Act was adopted in 1980, and to consider how these changes can be reflected in development of the Seventh Northwest Power Plan.

This topic is being addressed in a series of three briefings for the Power Committee:

1. What requirements does the Northwest Power Act impose regarding the process and content of the Council's Northwest Power Plans?
2. What was the overall context for power planning in 1980 and how did it shape development of the Act and the Council's First Northwest Power Plan?
3. What is the overall context for power planning in 2013 and how should it shape development of the Council's Seventh Northwest Power Plan?

At the Power Committee meetings in July and August, John Shurts and Tom Eckman provided briefings on the first and second items listed above. At the Power Committee meeting in Coeur d'Alene on September 10, John Shurts Tom Eckman and I will engage the committee on the third item, namely the current context for regional power planning and how it may shape development of the Seventh Northwest Power Plan. To help stimulate thoughts in advance of the discussion, attached is an outline that John and Tom have prepared.

# **Present-day context for power planning under the Northwest Power Act**

September 2013

## **Third in a series of briefings/discussions, in three parts**

- Power plan provisions of the Northwest Power Act (July)
- Context at the time of the passage of the Act (August)
- **Present-day context and implications**

## **Road map of today's discussion: Present-day context for power planning under the Northwest Power Act**

1. Brief re-cap of first two briefings
  - a. Historical context for the power plan provisions of the Northwest Power Act
  - b. Power plan provisions of the Northwest Power Act
2. Power planning context today, in a comparison/contrast summary and with brief commentary on how we got here from there
3. Implications?

### **1. Brief re-cap of first two briefings**

#### **a. Historical context for the power plan provisions of the Northwest Power Act**

- Particular NW electrical industry structure; especially dominated by federally-owned Columbia hydro
- High demand growth for electricity; expectation it will continue; significant new resources will be needed
- Significant time, cost and risk for new big thermal generating resources
- Bonneville and the Hydro-Thermal Power Program, and WPPSS
- Resulting financial, policy and environmental debacle
- Demand forecasting -- elasticity and uncertainty
- Conservation as resource
- Internalizing environmental costs and considerations
- Resource planning as a solution to large-scale resource challenges
- Public/regional input considerations

#### **b. Power plan provisions of the Northwest Power Act**

- Bonneville obligation to serve; Section 6 authority and obligation to acquire resources; expectation it will be the engine
- Regional inter-state Council and regional conservation and electric power plan
- Made up of cost-effective resources; all direct system costs
- Priority to conservation, renewables, co-generation before other types of generation

- Develop resource scheme to reduce or meet Bonneville's obligations with due consideration for environmental quality, compatibility with existing system; fish and wildlife protection and mitigation, including sufficient flows for anadromous fish
- Power plan is to have:
  - energy conservation program
  - methodology for determining quantifiable environmental costs
  - 20-year demand forecast
  - forecast of resources needed by Bonneville
  - cost-effective methods to meet reliability and reserve requirements
  - fish and wildlife program (developed prior to power plan)
  - model conservation standards
- Adopt in highly public process and in consultation with Bonneville, Bonneville customers, federal, state and tribal agencies
- In turn, Bonneville must have a conservation program and acquire resources to reduce or meet its obligations consistent with Council's power plan
  - Bonneville obligations for acquiring resources include meeting contractual load requirements and assisting in the implementation of fish and wildlife responsibilities

## **2. Power planning context today, in a comparison/contrast summary and with brief commentary on how we got here from there**

- **Industry structure**
  - Much remains the same: Essentially same publicly-owned and privately-owned utilities. Many with roughly the same generation or no generation. Hydropower remains dominant, Columbia River hydropower still dominant within that, and federal Columbia hydrosystem (and transmission system) still dominant within that.
  - And much is different. Completely deregulated wholesale power market. Westwide grid connections and westwide power market to significant extent, dominated by California needs. Lots of independent power producers in region (gas and wind) selling into markets or to retail utilities, IPPs whose allegiance is to shareholders not to ratepayers or to regional institutions and entities, and who demand independent service from transmission systems. Market as obvious source for new resource needs for individual utilities.
- **Demand/load growth**
  - Dampened, especially by 1000s of MWs of conservation and by other factors, even as economy grows and so do uses requiring electricity (e.g., computers and server farms).
  - Not as volatile, especially with the disappearance of big DSI loads.
  - Region is much more comfortable with the uncertainty and range of future demand.
  - Other big change in the northwest is the development of summer peak adequacy issues.

- **Resources**
  - Conservation as a resource became a huge reality for PNW, adding 5000aMW of efficiency and stretching and maintaining the value of the hydrosystem
  - No big thermal plants have been added (coal or nuclear), and the prospect is for even less
  - Significant new generation added has been natural gas and wind
  - Generation plants are smaller and easier to move from need/plan to on-line than in the past; much shorter lead-time for approval and development - the risk, uncertainty and costs of long lead-time to develop resources is gone
  - As noted above, nearly all of the new generating resources have been developed outside of the vertically-integrated utility/Bonneville axis assumed in the Northwest Power Act.
  - Wholesale market is itself the next resource of choice for most utilities; yet how to depend on the availability of market resources as available in region for future needs is itself a source of uncertainty.
  - Transmission constraints and integration of intermittent resources are critical system resource planning and development issues
  - Regional adequacy and reliability remain key issues, and the resulting pressures to under-build or over-build remain from an individual perspective remain significant
  
- **Bonneville. Allocate (and stretch the value,) not augment**
  - 40+ years of experience before and after the Power Act proved that it is, in general, not a sound policy for Bonneville and for the industry as a whole to have this odd safety valve of Bonneville as a place where utilities can, if and when they want to, bring load growth and make Bonneville acquire generating resources to add to and meld with the existing system (and existing system costs).
  - As noted above, what has proven successful under the Act has been to stretch the value of the federal hydrosystem and of existing low-cost hydro resources in general by using ratepayer funds to fund a broad range of conservation measures that sit below the market price. This is a resource the Council and region do want Bonneville to continue to acquire, at a high rate if still below price for generating resources. The IOUs and public utility and others -- and increasing state and federal efficiency standards -- are also capturing this potential.
  - So, without changing the law -- and instead through the administrative mechanisms of new 20-year power sales contracts and a tiered-rate structure for new resource costs -- the region ended up with a new construct for Bonneville, allocating the federal base system (with some augmentation) as one cost-based rate, with cost-effective conservation funded through that Tier 1 rate (and in other ways) to further maintain the value. Any entity or group of entities that wants Bonneville to acquire a new resource to serve load growth that can't be reduced will have to bear the cost of that new resource through a tiered rate. Expectation is that few or none will ever ask Bonneville to go the Tier 2 resource rate.

- Note, however, that the law has not changed. Utilities in theory could still bring all their load growth to Bonneville. And the tiered-rate structure can only do so much to insulate others from those costs, should they be visited on Bonneville.
- Bigger issue for Bonneville in last few years has been how to expand transmission and integrate intermittent resources into system. Transmission planning and generation planning are intertwined as never before.
- **Environmental considerations**
  - By 2013, environmental considerations and costs have been extensively integrated into planning and decisionmaking on new resources. Both within the power plan framework and in a regulatory and policy world outside the Bonneville/Council framework -- e.g., RPS standards and carbon emission reduction targets and policies have been largely state driven.
  - Fish and wildlife program and needs of fish in particular has been integrated as a significant driver and constraint and cost on hydrosystem operations.
  - Climate change issues will continue to affect system development and output for electricity generation (through policy developments and costs and through changes in water flows) and fish and wildlife mitigation efforts.
- **Regional/public input into decisionmaking**

### 3. Implications?

Discussion