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October 28, 2014

MEMORANDUM

TO: Council members

FROM: Tom Eckman, Power Division Director

SUBJECT: Briefing on Power Planning Under Uncertainty

BACKGROUND:

Presenter: Tom Eckman

Summary: Staff will present an overview of Council's approach to resource planning, focusing on how its analytical processes address the inherent uncertainty in major drivers of electricity demand, resource costs and risks. This is the second in a two-part series designed to provide Council members and interested stakeholders with background on the analytical methods used in plan development.

Relevance: The Council is engaged in the development of its 7th Power Plan. The product of that development process is a plan that represents the Council's collective assessment of resource development and other actions that will "assure the Pacific Northwest of an adequate, efficient, economical and reliable power supply."

Workplan: 1D - Prepare for Seventh Power Plan and maintain analytical capability

Background: In 1982, shortly after the Council was formed, Dr. Kai Lee, then a professor at the University of Washington and who later served as Washington Council member, authored a paper entitled, *The Path Along*

*the Ridge: Regional Planning in the Face of Uncertainty.*¹ In his paper Dr. Lee described how the Council's planning process departed from traditional utility power planning.

In the Council's power plans there is an explicit recognition that the future is uncertain and that risk management strategies to deal with that uncertainty are needed. For example, until the Council's first plan, utility resource planning was based on a single forecast of the region's most likely energy demand. Resources that took ten or 15 years to build were planned and constructed to that best guess; if the future turned out differently, the region faced the problem of either having under built or overbuilt resources. The cost of error on either side was enormous.

The Council explicitly recognizes that the future cannot be predicted accurately and that uncertainty is a fact of life in power planning. To accommodate this problem, the Council has developed plans to meet a broad range of potential growth in energy demand, setting a boundary of high and low load growth forecasts over the next 20 years. The Council's plans have also identified flexible resources such as conservation and options that shorten the lead time of generating resources.

This presentation will expand on the types of uncertainty the Council's planning process must address as well as describe the analytical methods used by the Council to evaluate and identify resource strategies that can be used to mitigate risk at an acceptable cost.

More Info: See linked paper "[An Overview of the Council's Planning Methods.](#)" From March 2011.

¹ Lee, Kai N. The Path Along the Ridge: Regional Planning in the Face of Uncertainty. University of Washington Law Review, 1982-1983, Volume 58, pp 317 – 342. (<https://digital.law.washington.edu/dspace-law/bitstream/handle/1773.1/104/volume%2058.pdf?sequence=1>)