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February 5, 2019

DECISION MEMORANDUM

TO: Council members

FROM: John Fazio, John Ollis and Dan Hua
Council Staff

SUBJECT: Overview of GENESYS Redevelopment and Preliminary Results

BACKGROUND:

Presenter: John Ollis, Dan Hua, John Fazio

Summary: Staff will demonstrate sample functionalities of the redeveloped GENESYS model to the committee. After reviewing the objectives of the redevelopment, staff will show results of the *first hydro-modeling benchmark*: to reproduce monthly results from a study using the current GENESYS model. Staff will also walk through some of the model enhancements that better emulate wholesale power market operations and discuss other model improvements as time permits.

Relevance:

The GENESYS model is a key tool that will be used to develop the Council's next power plan. It provides data required by other Council models to forecast electricity prices (AURORA) and to develop resource acquisition strategies (Regional Portfolio Model). GENESYS is also the tool used by the Council and the Resource Adequacy Advisory Committee to assess adequacy of the region's power supply and determine the region's energy and capacity needs. And, in conjunction with other models, it can also provide important information relating to the region's flexibility needs.

Work Plan: Action Item ANLYS-21 (review analytical methods), ANLYS-22 (GENESYS model redevelopment) and ANLYS-23 (enhance the GENESYS model to improve the simulation of hourly hydroelectric system operations).

Background:

The GENESYS model is one of the major quantitative tools used to develop the Council's regional power plan. GENESYS is primarily used to assess the adequacy of the power supply but it also provides hydroelectric system output to both the AURORA model and the Council's Regional Portfolio Model. In addition, GENESYS is used to validate that the power plan's resource strategy will produce adequate supplies. GENESYS has also become one of Bonneville Power Administration's major tools for assessing federal system adequacy and is being used by other regional entities. Because of the critical role that GENESYS plays in developing the Council's power plan, the model was evaluated and enhanced to improve forecasting reliability as well as to improve its data management capabilities and to make it less cumbersome to use.

More Info: N/A