DECISION MEMORANDUM

TO: Council members

FROM: John Ollis

SUBJECT: Contract with PSR Soluções e Consultoria em Energia Ltda (PSR)

PROPOSED ACTION: Council staff recommends authorization to contract with PSR for cloud computing support services and a total contract price not to exceed $115,000

SIGNIFICANCE: In development of the 2021 Power Plan, Council staff will use the redeveloped GENESYS model as an analytical tool for understanding the impacts of changes in the hydroelectric system’s operation on the regional power system and to assess resource adequacy. However, to efficiently run the redeveloped GENESYS model through cloud computing an adequate remote infrastructure is required due to the intensive processing and storage needs of the model.

BUDGETARY/ECONOMIC IMPACTS
Total contract budget not to exceed $115,000

BACKGROUND
The GENESYS model is used to assess resource cost-effectiveness, to evaluate the effective load carrying capability of variable generation, and to provide estimates of the power system impacts of various potential scenarios. GENESYS is also used to assess the impacts and costs of non-power related constraints on the regional power system, such as timing and flow restrictions at the dams.

The Council previously contracted with PSR to redevelop the GENESYS model in order
to bring the software code up to current standards and to implement enhancements to
the model, including improving the simulation of hourly hydro capability, incorporating
reserves into an optimized dispatch to reflect the interaction between assignment of
reserves and other system capacity obligations; improving market representation to
reflect the trade-off between decisions made for economics and adequacy; and,
including fuel accounting and forecast error to represent limitations on operators in
dispatching the system.

ANALYSIS
PSR recently delivered the redeveloped GENESYS model, and staff will use the
redeveloped model in development of the 2021 Power Plan. However, to run the
redeveloped model efficiently via cloud computing, an adequate infrastructure is
required to support the highly intensive processing and storage needs of the model.
PSR has an existing remote infrastructure, the PSR Cloud system, which employs
multiple Amazon Web Service products capable of efficiently running the redeveloped
model. Therefore, staff is proposing to contract with PSR to utilize its cloud system in
running the model for the 2021 Power Plan.

ALTERNATIVES
The Council does not currently have a remote infrastructure in place to support or to
efficiently run the redeveloped model. Thus, an alternative would be for the Council to
open an account with Amazon Web Services or another cloud computing provider to
develop a Council cloud system. This alternative would require a substantial amount of
staff time to set-up and maintain the cloud system and would require the model to be
transferred from the PSR cloud to the Council cloud. Further, with this alternative, the
Council may still need to contract with PSR for their continued assistance in running the
model.