Summary of Comments to PRM Review

The following comments and observations are supplemental to the review paper and subsequent meetings held on Jan 14th in the NWPCC office. The comments are specified by modeling requirements, input assumptions and planning metrics.

Modeling Requirements

* Granularity of dispatch and market prices

Sufficient detail must be established to simulate the actual operation and performance of generation and corresponding variation on market prices. This is important for several reasons including the appropriate measure the resulting value to existing resources to remain in operation and for sufficient incentive to build a diverse set of new resources providing accumulated benefits from operation to recover investment costs. As a result of the potential range of conditions that may produce a multitude of differing prices, a statistical approach to inputs must be carefully compared to actual or simulated prices given the same conditions.

The inclusion of ramp rates and startup costs need not be modeled explicitly particularly when the performance of the model is adversely affected, taking away capabilities of other, more influential details. The ramping up of resources occurs ahead of when market prices such that the center of the ramp is the point at which the resource would be dispatched assuming no ramp. Given a diverse set of multiple resources may be assumed to be simulated w/ an instantaneous start of any single resource. Startup costs can be included in fuel prices for most resources.

Units that must operate for time duration should include commitment logic whereas an estimate is made of market prices for the period of the minimum duration period to assure the unit will be dispatched.

* Multiple modeling tools required

No one tool can provides all necessary perspectives and analysis required to solve the complex problem of “optimal” resource planning. The strengths and weaknesses of each model must be evaluated separately, capturing the appropriate information from each modeling tool. When a tool can provide complimentary information, cross examination should be made and results confirmed.

* Selection of objective metric and measure of risk

The election of the using the lowest net present value of revenue requirements is the most universally adopted among industry planners but has limitations and does not reflect planning requirements of all constituents.

The assessment of metrics must include an understanding of utility power costs including resource portfolio vs. purchasing all energy from a market perspective. The “power cost” of a utility are inclusive of resource and contracts positions. The recovery of the existing investment for “prudent” resources is included in rates and the variable cost of dispatch in avoidance for purchasing energy at market rates. The net customer cost may be higher or lower than purchasing the energy at market rates. Since utilities have been able to historically construct lower cost technologies, the resulting power costs are lower than market.

New resource development, unless mandated to fulfill REPS requirements, generally provides sufficient value net of operating costs to provide investment recovery when compared to market prices. This can include applied to a mix of resources that compliment the operation and resulting market prices of resources that have distinctively differing operating characteristics, each providing respective value base upon unique operations. For example, a unit with high operating costs and low capital costs may be determined to be economic as a unit that is base load operated having low operating costs and high capital costs.

In theory, the future market prices are equal to the fully allocated cost of the mix of future resources in the long-term. Hence a lowest NPV revenue requirement cost of newly developed resources would therefore be equal to the NPV of prices applied to loads.

Utility planning generally does not include sensitivity to customer demands specific to prevailing conditions. An example includes when resources become scarce to meet high customer demands and resulting prices to supply energy can become disproportionately high. General NPV measures do not include price sensitivity to price and demand is unaltered reflecting the application of average pricing to customers at large. This would be equivalent to assuming the average price for strawberries is constant throughout the year (average pricing) and measuring the cost of supply capable of meeting the demand corresponding to average prices. In the practical world, prices at the store reflect seasonal conditions and demands are reduced. Only those customers that might demand the berries at high prices and cannot be served suffer an economic loss of not meeting their needs.

Correspondingly, the measure of reliability (as applied by the Council using LOLP) is also not reflective of this potential change is customer demands consistent w/ changes in prevailing costs of service. One measure of the adequacy of a resource plan may be the ability to not fulfill customer demands for conditions when some customers would continue consumption in light of high price conditions. This would be a more accurate measure of un-served energy from a customer perspective.

The time period to include in the metric is reflective of the period over which decisions are made in the near-term and reflective of long-term costs that become committed within the decision making period. This is strength of the RPM model in that alternative futures are included by which resource planning change course as futures emerge. It is of some concern that “out of period” costs are included that may not have bearing on cost incurred or committed within the planning period.

* Selection of loads and resources included in modeling, inclusive of potential range of futures

Include expanded view of potential futures that may evolve resulting from changes in unanticipated technologies, environmental legislation, price signals and demand response that have a potential occurrence.

* All interconnected loads and resources, independent of ownership (IPP, utilities or publics).

The inclusion of loads and resources interconnected need greater inclusion into the resource plan. This tied to increased transmission capacity and demand response to price allow for greater contribution of energy transfers during period of regional insufficiency and capturing economic benefits between regions. The inclusion of a broader region is anticipated to produce significant changes in the resource plan.

Planning Metrics

* The treatment of RPS resources need to considered based upon economic value and as required to fulfill RPS requirements. As a non-biased planning entity, the NWPPC should demonstrate the relative cost implications of legislating resources that may not otherwise be deemed cost effective. Further, this should include the cost implications of lost income tax revenues (incentives provided) to impose those requirements. The Council should not be influenced based upon political bias and demonstrate costs as fairly as possible on a level playing field to the benefit of the society that it serves.

Input Assumptions

* Cost of capital reflective of “all in risk” in a competitive market

Much confusion exists and misapplication of identifying the appropriate cost of capital in determining economic choice. Economic choice as describe in the process of making all alternatives on an equal playing field to establish preferences. This of course is complicated by tax implications and incentives which will be addressed later. In making this election it is necessary to identify the objective of planning, the assumptions used the level of risk assumed. Further, the choice of discount or time value rate must be linked to assure that no unexpected bias occurs in achieving the objective.

In making this determination it is important to identify the fundamental differences in the cost of capital based upon investment risk and conditions where risk is shared by customers. For both regulated and publically owned utilities a portion of the investment risk is borne by customers, either via regulation or rates imposed. Conversely, IPP developers incur a range of capital return requirements depending on whether the power has been pre-purchased under a power sales agreement or whether the energy in anticipated to be sold on a short-term basis on the volatile energy market.

The correct cost of capital is based upon conditions when the investment risk is not borne by the customers. Consistently, the cost of resource development and associated energy costs are reflective of the required economic/ cash flow incentive to incite resource development. When the risk of development is transferred to customers, the correct economic measures are distorted and the cost of capital apparent to the developer falsely implies an economic advantage. Example, using respective capital costs falsely implies public ownership has an economic advantage since much to the development risk is shifted to consumers and return rates for borrowed capital are lower.

* Anticipation of Demand Response to market prices to all customer groups

Much attention is being focused on changes in customer demand behavior, either under utility control or self initiated given incentives. It is anticipated that a great amount of economic benefit is achieved when customers are given appropriate price signals, control technologies are incented and changes in loads ensue. Along with this inclusion is a reduction of peak energy prices with lower peak demands, a change in the resource mix, and the greater economic viability of variable RPS resource energy.