

Western Clean Energy Advocates (WCEA)

Long Term Planning Priorities

April 22, 2010

- The WCEA is an informal coalition of renewable energy, efficiency, land and wildlife advocates and renewable energy trade associations put together to help these groups participate in the planning process.
- We strongly support WECC/TEPPC's development of long-term planning methods that can address a very uncertain future and incorporate environmental concerns. We want the group to acquire the right modeling tools that will be needed for these new planning needs.

Long term planning is different

- Structural changes are likely (e.g., Smart Grid enabled distributed flexibility, consolidation of control areas, increasing decarbonization of the grid)
- Policy uncertainties are great (e.g., form and pace of carbon regulation, operation of carbon markets, more stringent RPSs)
- Forecasting uncertainties are large (e.g., load growth, fuel prices, penetration of distributed generation, plug-in vehicles and conservation)
- Deep uncertainties abound that defy probability distributions (e.g., pace and form of technological change, effects and consequences of climate change)

Key considerations in response to these differences

- Look out far enough to understand long term benefits and consequences of large-scale investments
- Look at very wide variety of futures
- Dealing with risk has to be fundamental. This is especially true when dealing with very long lead times and high capital costs. There is a need to value optionality and flexibility explicitly.
- Take advantage of diverse stakeholder views to evaluate potential vulnerabilities of high consequence events. This will preclude opposition as much as possible.

WCEA recommendations

A. TEPPC should look to a model such as that used by the NW Power and Conservation Council to model resource expansion.

Deterministic or “perfect foresight” models have only a limited ability to account for long-term uncertainties. Generally, they ignore the benefits of optionality. By contrast, “*adaptive planning*” models, like the Council’s, are constructed to handle these considerations.

The Council’s 6th Plan show its advantages:

- Conservation is chosen at much higher levels (cost-effectiveness level is increased) than would be expected from simple avoided cost due to the added risk benefits (5-8 ¢/kWhr over market price)
- The model over-builds generation compared to typical load/resource reserve requirements (“going long” with conservation and renewables reduces risk)
- Optionality is heavily valued (keeping options open is an important strategy)

Recommendations (2)

B. TEPPC should select a tool that will easily accommodate land, wildlife, and water variables. The plans will be more defensible and have greater public support. Failure to do so leads to delays and unanticipated costs:

- Mapping (GIS) protected public lands, crucial wildlife areas, and critical water resources into transmission modeling is required. For example, classify each area as being either totally off limits, or potentially accessible, but having mitigation cost adders.
- Build upon previous digitized maps produced through the WREZ, being produced through the state wildlife councils under WGA, produced by one of the national labs, and/or produced by an NGO known for the quality of its data.
- Some consulting resources allocated to the SPSG should be provided to implement this concept.

Recommendations (3)

- C. Variable resources should be modeled realistically. The tools should incorporate ramp rates and added O&M cost of cycling coal-fired resources.
- D. Any transmission expansion planning tool must be able to interact with the resource expansion tool in order to weigh trade-offs between resource placement and transmission construction.
- E. Long term infrastructure planning needs to look at the customer side of the meter and distributed resource infrastructure. For example, the Smart Grid may be able to provide storage and ancillary services very inexpensively.