Distributed Generation in Western Utility IRPs

Avista
The Company views DG as not a threat but as another choice available to the utility. In the future there will be a vibrant market for personalized power that uses DG technology. The Company is financially supporting fuel cell development and therefore is a part of the DG movement. The key to any DG project is the source location relative to the substation. Presently within the Company, any proposed DG project includes analysis to look at the effects on its system.
(Avista Corp. 2003 IRP Technical Appendices, pages M-1 through M-6)

Idaho Power
Idaho Power identified microturbines, diesel and natural gas internal combustion generators, and fuel cells as future resource options. These resources are likely to be deployed in a distributed manner - connected to the distribution system close to end users. Identification of the resource options themselves does not constitute a resource plan, but the specification of resource options is a first step in the resource planning process.

Microturbines -
As of June 2002, there were no microturbine generators operating on the Idaho Power system.

Diesel and Natural Gas Internal Combustion Generators -
Many industrial and large commercial facilities in the service territory rely on internal combustion generators for back up power, but no utility dispatch program is in place or planned. Idaho Power owns two 2.5 MW diesel-engine generators in Salmon, ID that are primarily used for backup power. Otherwise, the company cites its 2001 trial with diesel generators in Treasure Valley as problematic at best.
(Idaho Power Company 2002 IRP pages 35-44)

Nevada Power
There has been almost no penetration of large-scale DG project's in the Company's territory. However there has been a marked recent increase in customer interest in large-scale high duty-cycle DG applications in Nevada…

At the present time, it is too difficult to predict likely penetration rates for large-scale DG projects in the Company's service territory…the Company will focus its internal efforts on studying large-scale projects… to gain a better understanding of the economics of DG applications and to better anticipate potential changes that may be warranted in future energy supply and resource plans.

The Company is proposing through its demand side plan to develop a program that will monitor and track the installation of DG ranging from smaller photovoltaic installations through the larger installations… The data collected will be shared with customers through the Company's web based DSM information site.

(Nevada Power 2003 Resource Plan – Volume VI pages 13-16)

PacifiCorp
For the purpose of portfolio modeling, PacifiCorp identified prospective resources for balancing resource supply with electricity demand based on options uniquely available to PacifiCorp. DG resources considered include:

Combined Heat and Power -
Utah combined heat and power (CHP) was developed to represent a cogeneration opportunity along the Wasatch Front. The "Cogen-CT" CHP represents a combustion turbine generating steam for industrial purposes. A large CT is modeled. This option is dependent on the proper host and is considered a low probability considering the industrial base in Utah. The "Non CT" case is intended to be a boiler or waste heat application that could apply a topping steam turbine at relatively low cost. No specific candidate cogeneration sites are currently identified.

Fuel Cells -
Fuel cell technology continues to improve and become more cost effective. A fuel cell is an electricity-generating device that utilizes the reaction between hydrogen and oxygen with the only by product being water. Attractive fuel cell characteristics include:
• High energy conversion efficiency
• Modular design
• Very low chemical and acoustical pollution
• Fuel flexibility
• Cogeneration capability
• Rapid load response.
Fuel cell disadvantages include high capital costs and technological uncertainty.

Microturbines -
Microturbines were identified as "not currently feasible for meeting PacifiCorp's resource needs."
(PacifiCorp 2003 IRP pages 70-76)

Portland General Electric
PGE is developing interconnection and other requirements for customer owned generation. They expect their final interconnection requirements to conform to anticipated FERC rules on the subject. The company is developing a website that will feature information on interconnection and other procedures as a guide to prospective DG customers. PGE is also developing a pre-certification process by which smaller generation facilities will be pre-certified for interconnection and avoid a complete review.

PGE could acquire up to 100 MW through its Dispatchable Standby Generation Program (DSG) from on-site generators at high technology, medical and telecommunication businesses within their service territory. Under the program, generators are always available to back up the owner's facility, but can be remotely dispatched for up to 400 hours in a single year to supply system peaking power. PGE is responsible for

reconfiguring the grid connection to make the units dispatchable and for operating and maintaining the generators. PGE also pays for the fuel consumed when units are run for their benefit. As of January 2003, the utility had 9.75 MW of DSG on line and was negotiating contracts for additional projects.
(PGE 2002 IRP Supplement page 76)

Puget Sound Energy
PSE strives to incorporate DG elements into its distribution system facilities planning process. PSE has developed DG screening tools to identify projects with the highest probability of serving the least cost capacity deferral alternative. Three DG projects have been identified with the screening tool:

1. Peak Shaving at Crystal Mountain – PSE deferred a $2.5 million wires upgrade with the installation of a 2.4 MVA diesel standby generator.
2. Installation of 1.2 MW generator on Lummi Island – PSE employed a 1.2 MVA diesel unit to act as an emergency response to the failure of an old line.
3. Selection of Dierenger substation as a DG site – a project feasibility study prompted PSE to defer the implementation of a DG project at this site.

PSE's views DG technology as an alternative in delivering reliable energy at low cost. Currently, PSE monitors and evaluates DG developments at the federal, state and utility levels. PSE has been contracted to perform the DOE/NREL/GE/PSE project, Universal Interconnect Detail Design. PSE is one of three companies developing the functional requirements for this project. DOE/NREL/GE/PSE project backers hope to develop an advanced universal modular interconnection technology that can provide cross DG platform capability and increased functionality for load management and grid support.
(PSE April 2003 Draft Least Cost Plan, VII 11-14)

PSE’s Schedule 150 net metering customers provide another existing resource. These customers operate fuel cells or hydro, solar or wind power generators with a total capacity of no more than 25 kW on their own premises. Such generators must operate in parallel with PSE’s transmission and distribution facilities. In total, these customers represent approximately 37 kW of supply from 18 photovoltaic sources, four micro-hydro and one wind power project.
(PSE April 2003 Draft Least Cost Plan, VIII 5)

The following is an excerpt from PSE’s two-year “Action Plan” which lists steps to be taken to implement PSE’s recommended long-term resource strategy:
IX. Distribution Facilities Planning

- Participate with other EEI utilities in the FERC NOPR process for distributed generation. The FERC NOPR for distributed generation will be issued in the Spring of 2003.
- Seek opportunities to deploy distributed generation for least cost capacity deferral.
- Continue the collaboration with the DOE/NREL/GE Universal Interconnect project.

- Track distributed generation technologies and applications that can impact and improve the distribution gas and electric planning process.

(PSE April 2003 Draft Least Cost Plan, XVII 14-16)

Xcel Energy

Xcel does not consider DG in resource solicitations or modeling.
(Xcel 1999 IRP pages 1-13 thru 1-15, 2002 Update)