

Winds of change

How Puget Sound Energy changed the game for regulated utilities developing renewables

“First there is the power of the Wind, constantly exerted over the globe.... here is an almost incalculable power at our disposal, yet how trifling the use we make of it.” – Henry David Thoreau, 1843.

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The Pacific Northwest, with its soaring mountains, raging rivers, amber windswept hills, and evergreen forests, has long had "Ecotopia" sensibilities. Increasingly, businesses are charged with walking the fine line between serving human needs and safeguarding the environment. This is particularly true with regulated utilities and the electric power industry.

Enter Roger Garratt, Director of Resource Acquisition and Emerging Technologies for Puget Sound Energy (PSE). When Garratt started at PSE in 2003, he was fresh from shepherding through Pacific Gas and Electric's \$730 million La Paloma project in Southern California – an 1100 MW natural gas fired combined cycle project charged with more efficient energy production.

It was there he learned the vital nature of teambuilding and enlisting the right partners. "The most important insight was that the development team has to evolve with the project, using the highest calibre people at every stage."

Garratt's experience at PG&E, and his degrees in both electrical engineering and business, allowed him to see an opportunity to help transform the way investor-owned utilities acquire energy for their customers. In the early part of this decade, the model was to contract with third party developers, who developed, then "flipped" the business. Garratt thought it made sense for PSE to get into the business of energy ownership and

operation to gain greater control, and provide energy to customers at a lower cost.

OPENING MOVE

The regulatory and financial challenges might have daunted others. Regulated utilities are traditionally risk-averse organizations, focused on delivering low-cost electricity reliably. The naysayers were numerous, but Garratt's team persisted. In 2005, his team petitioned the Internal Revenue Service to obtain a game-changing ruling: that investor-owned utilities could use Production Tax Credits for renewable energy sold to third parties. This opened the door for utilities to own large-scale wind and solar operations. Today utilities across the country have benefited from this ruling, developing 4,700 MW of wind power capacity.

Over the last seven years, Garratt's team has acquired over 1,400 MW of new gas-fired, wind and solar photovoltaic energy generation valued at over \$1.1 billion. His newest project, Phase I of the Lower Snake River Wind Project in Southeast Washington, will add another 343 MW of wind energy, nearly doubling PSE's current wind power generation. Upon completion of Phase I, PSE will have invested roughly \$2 billion in new power generation under Garratt's tenure, and will have enough wind power in its portfolio to serve about a quarter of a million homes.

On the challenges of being an

investor-owned, regulated utility with a charge to grow, Garratt says "It's like playing 3-D chess, a real intellectual challenge every day. It takes patience and endurance, and a stellar team to be successful in this rapidly changing game." Garratt continues, "As a regulated utility in Washington we are required to have an Integrated Resource Plan, driven by the least-cost criteria." Cost includes risk and environmental impact, which can bring the cost of renewables more in line with traditional Northwest power sources, such as coal-fired and hydroelectric.

ANTICIPATING THE PLAY

In 2006, Washington State voters passed a law requiring utilities to produce 15% of their power from renewable sources by 2020 in graduated stages. "We established the viability of renewables long before the state mandate," Garratt notes. "And currently wind energy is the most cost-competitive renewable resource. When we bring Lower Snake River online in 2012 we will have exceeded the state requirements for the first two stages of the process."

Sometimes being a regulated utility in a wildly fluctuating energy market can be volatile. Garratt says, "A few years ago when wind was red-hot, the prices of development soared, which was a real challenge for us." But Garratt launched another innovation. "As the market became hotter, we changed our business strategy for acquiring renewables. We simply moved



further up the development chain, taking on the siting and permitting, the wind resource assessment, and the preliminary engineering, which had all previously been handled by private developers."

RAISING THE STAKES

The analysts and engineers at DNV have consulted with PSE on all three of their wind development projects – whose names read like a road trip through Eastern Washington: Wild Horse, Hopkins Ridge and Lower Snake River. As the independent technical experts, DNV's reports on resource management and wind energy assessments are trusted by state regulators and critical to the permit and review process. DNV also helps vet possible expansions, and renders expert opinions on turbine models.

"With wind turbines costing a couple of million dollars apiece you have to be able to trust the data in a competitive review," says Garratt. "We rely on DNV to help us evaluate equipment and develop an accurate, realistic picture of a project."

Is Garratt bullish on wind for the future? "We do see wind increasing its share in the portfolio, particularly with Lower Snake River coming on line." Already the nation's second-largest utility producer of wind power, PSE has 430 MW of generating capacity. Lower Snake River will significantly enhance this position, powering up another 100,000 homes with renewable energy. This dramatic increase is not without its challenges. Garratt notes, "To deliver power from Lower Snake River to customers in Puget Sound, a distance of some 300 miles, will involve PSE

cooperating with other regional utilities for integrating new power sources onto the grid and transporting that power."

Kevin Smith, at DNV's Seattle office, adds, "The Pacific Northwest lacks a regional transmission organizer. That means each utility has to manage their own systems for forecasting, tracking, scheduling, and transferring power, as well as establishing regulatory protocols. All of this will have to be enhanced and coordinated to enable full-scale build out of Lower Snake River."

If Garratt's chess metaphor is apt, then tackling the Lower Snake River project is like playing in the finals of the World Chess Cup while paddling down a Northwest river in a canoe. It's likely that Garratt will relish the challenge. ●