Dale's Testimony– NuScale Part 2: Role of Nuclear Today

Chair Vega Pederson, members of the committee, my name is Dale Atkinson. I am the Chief Operating Officer of NuScale Power LLC, located in Corvallis, Oregon.

I am here today to testify in favor of House Bill 3445 for the creation of a Task Force to study the potential contribution of nuclear power to energy generation in Oregon.

Today, nuclear generating stations provide 19% of the electricity used in the United States despite the fact that nuclear plants account for only 10% of national "name plate" generating capacity. This surprising ratio of actual generation to calculated capacity is possible because of the extreme reliability of nuclear power plants.

Nuclear power plants today contribute 63% of the nation's carbon-free electricity. Another 21% is contributed by conventional hydro, a source that is unlikely to show substantial future growth.

The need for electricity will continue to grow globally, nationally, and here in Oregon. We need a fully informed energy strategy to obtain clean, sustainable, energy using all of the available technologies. Fully 85% of Americans favor using all clean technologies, including nuclear, to meet future energy needs.

Everything has an environmental footprint - the summation of characteristics such as water consumption, air and water pollution, CO_2 emissions, impacts on biota and critical habitat, aesthetics, and exclusion of competing uses.

Think of the land area consumed by a technology. Compared to renewables such as biomass, wind, solar, and hydro, all nuclear plants, but especially Small Modular Reactors (SMRs), consume orders of magnitude less land area for the same amount of electrical generation. A single NuScale nuclear facility, with 12 SMRs, would occupy only about 40 acres while generating 570 megawatts of carbon free electrical power. Consequently, a dual NuScale facility would need 0.14 square miles (about 80 acres) to generate over 1,000 megawatts of electricity. To generate the same 1,000 megawatts of electricity, wind power would need 94 square miles and solar about 17 square miles. NuScale supports the use of all carbon free sources of power. However, only nuclear can provide this power when needed, without dependence on the availability of sunlight, wind or snow pack.

Due to technological advances, natural gas is now available in greater quantities and at lower prices. Natural gas fuel prices have historically suffered from significant price volatility, and have at times been unable to meet demands. Additionally, the future export of natural gas will create upward pressure on the price of natural gas in the U.S since natural gas prices are dramatically higher in other areas of the world.

Natural gas also has detractors in the environmental community. Besides concerns around potential groundwater contamination from toxic constituents in the fracking fluids, gas combustion is not carbon-free, producing about 60% of the CO_2 produced by coal for the same electrical generation.

There is no single technology that can satisfy all of our power needs. What is needed is a comprehensive strategy that uses each technology in the role that it fits best. The answers are neither simple nor straightforward. Oregon needs an optimum combination of technologies, not an either – or solution. Nuclear is not a competitor to renewable technologies; nuclear is an enabler of renewables. The clean, reliable, load following characteristics of new nuclear make it an ideal partner to balance the intermittency characteristic of wind and solar power. When supported by clean nuclear, more renewable capacity can be safely added to the grid. As mentioned by Dr. Reyes, NuScale has already been studying the integration of NuScale nuclear plants with existing wind farms, such as Horse Butte in Idaho.

But we are not here today to ask for a determination that nuclear is the best or only solution for Oregon. We are here to ask that nuclear technologies be given fair consideration in planning Oregon's clean energy future.

Meanwhile, research and development investment in a new generation of nuclear power promises dramatic improvement in the form of safe, modular, scalable, factory-built, nuclear reactors. Right here in Oregon, NuScale has developed a clean, reliable, economical, carbon-free, Small Modular Reactor technology that will play a significant role in meeting future demand in the U.S. and other nations. A clean, sustainable future with the abundant power for Oregon will likely include a nuclear component as part of a diverse energy portfolio.

House Bill 3445 is a step toward intelligently defining that future.

We have submitted written comments as well that contain more detail and illustrations of the points summarized here. Thank you for the opportunity to testify before you today. I would be happy to answer any questions.