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The Honorable John Kitzhaber, Governor
Capitol Building
900 Court Street NE
Salem, Oregon 97301

RE: Comments on the Draft Ten-Year Energy Action Plan
VIA: tenyearenergyplan.comments@odoe.state.or.us

Dear Governor Kitzhaber:

Thank you for the opportunity to comment on the Draft Ten Year Energy Action Plan. It is a welcome contribution to the debate over energy and climate leadership. Given the polarization of our society this is a debate that will be vigorously engaged.

My comments are brief, and I would be happy to provide additional detail as needed. I support the Plan's emphasis on increasing energy efficiency, transportation electrification, and landscape-level land use planning. However, the Plan as a whole is founded on political compromises worked out in previous decades, which are now dated and fail to adequately address the climate crisis. The next ten years are crucial in addressing this issue. I hope that your administration will implement energy and climate policies that are bigger and faster than the Plan presently entails. To that end, I recommend the Plan:

1. Address the Data Center industry with a collaborative approach to the adoption of combined heat and power ("CHP"), including the use of renewable fuels as a fraction of their energy requirements.
2. Accelerate the state's schedule to reduce emissions of greenhouse gasses ("GHG"). Use the Carbon Abatement Cost Curve study (now in process) to set this goal to be proportional to the global reductions required to return atmospheric concentrations of CO₂ to less than 350 parts per million.
3. Substantially increase and accelerate the Renewable Energy Standard ("RES") to include a suite of renewable energy technologies and CHP. Match up the RES plans with the requirements for global warming gas reductions in (2) above.
4. Adopt a multi-technology Feed-In-Tariff with funds from the utilities (*not* the State General Fund) to pay for the rapid expansion of the RES.
5. Assure that regulatory mechanisms keep the state's electric and gas utilities financially healthy and enthusiastically motivated to lead the state to a low carbon energy system.
6. Address the special interests of the business community and low-income energy consumers with enhanced targeted energy efficiency efforts to reduce their consumption of energy so as to maintain its affordability.
7. Communicate with Oregon's citizens, and the rest of the world, our intent to do our part to address climate risk and keep temperature rise within manageable bounds, even if energy prices must rise to enable that commitment.

The following paragraphs provide additional details.

1. Data Center Industry The Ten-Year Energy Plan Task Force report raised the issue of data centers, but was silent on recommendations. This is a subject in which my company has considerable expertise. The data center industry is rushing to build facilities in Oregon, due to our climate and low energy rates. The Plan should address the data center industry with a collaborative approach to adoption of new technology for Combined Heat and Power in this segment. There exists CHP architectural technology for mission critical facilities such as data centers. It is fairly new though not yet in use, and is in the public domain. It enables data center owners to improve power quality and availability and reduce probability of mission failure (their most important metrics), reduce capital and operating costs, and eliminate batteries and diesel generators from their footprint. This technology provides smart grid benefits for the utility. A collaborative effort between State government leadership, utility leaders, potential vendors and the data center industry should be established to create a path to very low carbon energy supply for these facilities. Renewable fuels could be required for a growing fraction of their energy requirements.

2. Accelerate Reduction of Greenhouse Gas Emissions The Ten-Year Energy Plan Task Force recommended that Oregon commission a Carbon Abatement Cost Curve, which was originally developed by the McKinsey consulting firm. The Plan states at page 16, “To this end, the state has commissioned an analysis that compares the costs and benefits of all available carbon reduction strategies, in order to identify and rank the best opportunities for cost-effective carbon reduction. This rigorous analysis of carbon emissions will help us understand full cost accounting and be included in all state planning, procurement, and other activities where the state can play a role to assist in carbon emissions reductions.”

This is welcome news. Oregon’s results should be considered within the original technical context presented by McKinsey’s 2009 Global Carbon Abatement Cost Curve. The authors first identified their GHG abatement goal, 38 GT CO₂e per year by 2030, which is the quantity that must be abated to keep temperature rise to less than 2 degrees Celsius. This carbon abatement goal was used to cut off the cost-supply curve at the point where that much carbon was saved annually. The cost of the marginal abatement technology was about 60 Euros/Ton. The average cost of all the abatement technologies was substantially less than that. To paraphrase the authors, *everything on the list that cost less than 60 Euro/Ton must be developed in parallel and as fast as possible in order to reach the carbon abatement goal.*

Arguably, a 2 degree Celsius temperature rise is too damaging and presents too much risk to be acceptable. A safer goal would be to return CO₂ concentrations to less than 350 parts per million as quickly as possible. The state’s GHG reduction goals should be premised on and proportional to the 350-ppm global target.

3. Increase and Accelerate the Renewable Energy Standard Because of the climate crisis the Plan should call for a significant expansion of the RES. It should define aggressive adoption rates for a suite of renewable energy technologies. For example, if Oregon’s solar energy goal would be raised to 3,000 MW by 2025 it would be approximately scaled to New Jersey’s solar energy goal and would produce about 6% of Oregon electricity. These resources are hard to scale up to meaningful numbers in time to make a climate difference unless one starts soon and is diligent in their development.

Similarly an expanded RES should produce significant increments of CHP, renewable fuels, geothermal, wind, and wave energy (if it becomes mature enough to be a viable energy source).

4. Adopt Multi-Technology Feed-In-Tariffs Funded by Utilities Well-designed Feed-in-Tariffs have been highly successful in many jurisdictions in producing large increments of renewable energy. RES renewable energy resources are part of the long-term energy supply system. Thus, the electric utilities should fund Feed-in-Tariffs for RES energy resources. Emphatically, the State's General Fund should not be the source of funds for these projects.

5. Assure Utilities' Financial Health and Enthusiastic Leadership The electric and gas utilities need to be kept financially healthy and be provided the right incentives to enthusiastically help lead the state's transition away from fossil fuels. This includes assuring that needed transmission projects are built to enable the grid to accommodate growing flows of renewable energy resources.

6. Use Energy Efficiency to Maintain Energy Affordability Oregon needs policy invention to care for low-income residents and the business community, both of whom are negatively affected by increased energy prices. Such policy invention could include an enhanced, targeted energy efficiency strategy to deeply reduce the energy consumption and energy costs of these customer segments. In spite of the excellent work done by ETO and NEEA, very few of these customers are optimally energy efficient, even at today's low energy prices. Crucially, the Plan gives great weight to the "affordability" argument of these special interests. Because of climate risk we need to meet these customers' affordability interests through mechanisms other than simply keeping the price of energy low.

7. Communicate Oregon's Updated Commitment to Climate Action If adopted, these recommendations would match up the State's ten-year energy plan with our present understanding of the risks of damage from climate change. If Oregon can do this it would provide a North American model of climate and energy leadership. Your administration should communicate with Oregon's citizens, and the rest of the world, our intent to do our part to keep global temperature rise within manageable bounds, even if energy prices must rise to enable that commitment.

Thank you again for the opportunity to submit comments on this very important matter.

With best regards,



Chris Robertson

About: Chris Robertson & Associates, LLC was founded in Portland in 1990 as an entrepreneurial sole proprietor consulting firm dedicated to independent systems thinking, innovation and strategy. Its focus is on the business and environmental impacts of energy efficiency, renewables and climate change, with work in both policy and technical arenas. Chris has worked in the field more than 35 years, and contributed innovations in community energy planning and education, electric utility demand side management, solar energy business models, carbon-risk management and distributed generation. His work seeks to avoid the consequences of Kurt Vonnegut's observation that "Humans are the only species that won't save themselves because it isn't cost-effective."