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Growing Washington's Clean Energy Economy: A Report to the Washington State Legislature

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Introduction

Clean energy technologies have begun to transform the national economy. Growth in this sector is expected to be as high as four-fold, generating more than $2 trillion per year by 2020. Washington State has historically been a leader in the field by pursuing low-carbon energy policies, such as renewable portfolio standards and green building codes. But as competition increases, Washington needs to continue to improve to stay on top.

Increasing investment in distributed generation, energy efficiency, and conservation has been identified as the future for Washington State by the Legislature, two Governors (both Gregoire and Inslee), the Washington Department of Commerce, the Northwest Power and Conservation Council, and the people themselves (in passing I-937, the Energy Independence Act).

To this chorus of supporting voices, we add our own. Investments in clean energy technologies promotes energy independence, creates clean tech jobs, safeguards our natural resources, reduces greenhouse gas emissions, protects against environmental degradation, and maintains low energy costs throughout the state. Consequently, the State should consider all manner of policies to support these investments.

We have identified several policy and technical barriers to developing Washington State’s clean energy economy. The following is a series of recommendations on eight policy areas that are critical to this issue:

1. Distributed generation
2. Energy efficient buildings
3. Cogeneration
4. Increasing affordability
5. Net Metering
6. Plug-in electric vehicles
7. Amendments to the EIA
8. Decoupling

For more information on any of the issues raised here or to receive a copy of the comprehensive report, Growing Washington’s Clean Energy Economy, please contact us using the information below.

1. Distributed Generation: Life-Cycle Analysis

Distributed generation (DG) refers to electrical generating capacity that is located at the source of its use, such as solar panels on the roof of a building or a wind turbine on a farm. DG is thought to have great potential to improve efficiency and reduce greenhouse gas emissions,
emissions. While the current regime of incentives in Washington state support a more vibrant clean-energy economy than would otherwise exist, it could nevertheless be optimized with a more scientific approach.

Washington should encourage region-specific life-cycle assessment (LCA) and economic assessment of distributed generation technologies to assist in future policy developments, coordinating with ongoing progress in that arena by the Utilities and Transportation Commission (UTC). To do this, it should commission two reports. The first would be a comprehensive LCA report on distributed generation in Washington State. The second would be on the economic incentives needed to adequately support a sustainable level of distributed generation capacity as determined by LCA.

Based on a summary of LCA findings, the following grades are likely to result from a formal study of the DG technologies under consideration, compared to the current range of incentives.

Looking forward, the legislature should revisit the overarching scheme of incentives that apply to DG after a review of such a report, and either delegate authority (e.g., to the UTC) to adjust incentives on a per-technology basis, or adjust the incentive scheme periodically to align the promotion of DG technologies with their relative environmental and economic benefit.

### 3. Cogeneration (Combined Heat-and-Power)

Cogeneration, also known as combined heat and power (CHP), captures waste heat produced by electric generators and puts it to useful work. The recaptured heat is then used to heat buildings or even to generate more electricity by creating steam to run a turbine. In so doing, CHP dramatically increases the efficiency of thermal electric generators by up to 90%, far exceeding that of traditional power plants. And unlike many other technologies that reduce GHGs in the atmosphere (such as reforestation, solar panels, and wind power), CHP delivers a negative marginal cost—meaning that installing a CHP plant actually generates positive economic returns.
Despite CHP’s great potential to save energy, it has been slow to gain popularity as it doesn’t capture the imagination quite like solar panels or wind turbines. Cogeneration is particularly well suited to Washington State because the power generated coincides with generation needs. In the winter—when hydropower is less plentiful and energy use peaks—CHP can offset heating needs while generating clean and efficiency electricity. The federal government has recognized this, and the U.S. Department of Energy and the Obama administration have launched an aggressive program to ramp up cogeneration plants by 50% by 2020. Washington should follow suit and incentivize this powerful technology.

4. Increasing Affordability

The installation of the clean energy technologies described here has lagged due in part to high up-front capital costs. Various financial incentives currently exist under Washington State law, but these programs have so far proved insufficient to encourage investment in this area. The state should play a leading role in encouraging such investments by enabling low-cost financing options through the creation of a statutory financial mechanism.

PACE Financing Mechanism

Specifically, the Washington legislature should pass Property Assessed Clean Energy (PACE) program enabling legislation. PACE programs provide property owners with the funds to install renewable distributed energy or perform energy conservation upgrades to their buildings. Those funds would then be paid back through property tax assessments over a period of up to 20 years. Such programs provide an innovative method of financing clean energy upgrades that does not add to the state budget.

So far, 28 states and the District of Columbia have enacted PACE enabling legislation. In fact, Washington stands as the only state on the West Coast to not have such laws in place. Washington should join with these jurisdictions and pass PACE enabling legislation.

5. Net Metering

Net metering enables individuals who generate their own power to feed unused energy back into the power grid. This benefits individuals through increased stability of the energy supply, and benefits the state by increasing possibilities for development of clean and renewable energy sources.

Current laws limit how individuals in Washington can connect their distributed generation to the power grid, thereby inhibiting the broad adoption of this technology. In response, the Washington net metering statutory scheme should be amended to (1) increase the Cumulative Net Metering Generation Capacity to 1% of a Utility’s Peak Load in 1996 by 2020; (2) expand the definition of “customer-generator” to include customers that owns and operates, leases and operates, or contracts with a third-party that owns or operates a net metering system; and (3) increase the net metering system size from 100 kilowatts (kW) to 200 kW. These three proposals involve small and reasonable changes, and so finding consensus on them should not be overly difficult. Once the three policy changes have been implemented, the state should consider innovating in the areas of rollover energy credits and virtual net metering.
6. Plug-In Electric Vehicles

A "plug-in electric vehicle" (PEV) is any car or truck that can be charged from an external source of electricity, such as a wall socket. These vehicles can be "all-electric" (running on electricity only) or "plug-in hybrids" (running on both electricity and liquid fuels). By running purely on electricity, PEVs are free from having to rely on gasoline, providing an economic benefit to the owner as well as numerous greater benefits to society. However, PEVs have yet to be accepted in the general marketplace, largely due to consumers' "range anxiety," or the fear that a PEV would be unable to get the driver to her destination.

To address this concern, Washington should ensure that the infrastructure necessary for PEVs gets built-out, particularly new PEV charging stations. This would put Washington at the national forefront of this technology, while also attracting investment dollars to the state and creating new jobs.

7. Amendments to the EIA (I-937)

The Energy Independence Act (EIA) aimed to ensure that new energy growth utilizes clean technologies and that energy costs remain low into the future. In order to best achieve these goals, we recommend that the legislature adopts several amendments to the EIA that will provide greater flexibility and cost-effective implementation of the conservation and renewable energy standards. Many of the suggested amendments will also advance Washington State’s goal of promoting distributed energy.

First, the definition of “eligible renewable resource” should be expanded to include facilities utilizing anaerobic digesters that capture and destroy methane by allowing these facilities to “unbundle” their power and non-power attributes into renewable energy credits and carbon reduction credits. This will encourage the development of this technology, which is an important alternative method of energy production because it reduces carbon as well as generating energy.

Second, the definition of “eligible renewable resource” should also be expanded to include two specific conservation technologies: cogeneration and net metering. To provide greater incentive for these clean technologies, the amendment could allow for double output qualification as a source of “distributed generation.”

8. Decoupling

Decoupling encourages utilities to invest in energy efficiency and conservation by separating their profits from the amount of energy used by consumers. Once decoupled, a utility’s profits are no longer determined by the amount of electricity or natural gas the utility sells. In order to decouple, a utility must receive approval from the Washington Utilities and Transportation Commission (UTC). The UTC has administrative authority to approve decoupling proposals, and even issued a policy statement on decoupling in 2010. Yet, none of Washington's Investor Owned Utilities (IOUs) is currently decoupled and so the state is missing out on the benefits that this policy can bring.

Notably, existing barriers to utility decoupling are administrative, rather than legislative. Given that the UTC already possesses the authority to approve decoupling proposals, the legislature need not address decoupling through legislation at this time.