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**U.S. Senate Committee on Energy and Natural Resources
Senate Subcommittee on Energy
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Good afternoon, Chairman Franken, and Members of the Subcommittee. Thank you for inviting me to testify before you today about Hawaii's innovative efficiency and renewable energy policies, and to identify opportunities the federal government can take to support job creation and innovation at the state and local level. I will also provide some other examples of state leadership that might inform your deliberations.

Hawaii's commitment to a clean energy future is propelling Hawaii into national leadership for renewable energy installations and energy efficiency measures. Energy transformation is a key component of the the HI Growth Initiative; our State's economic development strategy to create high growth, high wage jobs. By deploying clean energy and attracting test bed investments and innovation, Hawaii is creating a clean energy cluster that is a leading source of new construction expenditures and green jobs. This is growing our economy and diversifying our business base away from a heavy reliance on the tourism sector. For example, distributed PV installations accounted for 28.5 percent of all construction expenditures in Hawaii in 2012 as we reached second place in the nation for solar PV installations per capita. Hawaii is second in the U.S. for cumulative installed PV capacity per capita in 2012, according to the Interstate Renewable Energy Council, and also second for solar PV capacity installed in 2012, according to Environment America Research. We happen to be the most isolated

population center in the world, 2,500 miles from the U.S. West Coast, with oil imports accounting for 74 percent of our electrical production in 2013 at a cost of \$4.5 billion. Averaging 34-cents per kilowatt hour, Hawaii has the highest electricity rates in the nation, more than three times higher than the national average. Hawaii's clean energy policies are designed to transform the most oil dependent state in the nation to a national model for job creation, industrial transformation, environmental compliance, and technological innovation.

At the heart of the transformation is a bold policy agenda and coalition of energy stakeholders called the Hawaii Clean Energy Initiative. Initiated by a Memorandum of Understanding ("MOU") between the State and the U.S. Department of Energy in 2008, the Hawaii Legislature adopted a Renewable Portfolio Standard ("RPS") in 2009 requiring 40 percent of our electricity to be generated from renewable energy by 2030. Hawaii also adopted an Energy Efficiency Portfolio Standard ("EEPS") in the same year to reduce electricity use by 4,300 gigawatt-hours ("GWh") by 2030, roughly a 40 percent reduction in electricity use from 2007 levels.

In the six years since that MOU, we have made significant progress. When 2013 figures are released in a couple of months, we expect our Renewable Portfolio Standard to be at 18 percent, which means we will have surpassed the 2015 interim goal two years early.

In efficiency, Hawaii has led the nation for two consecutive years in the per capita value of our energy performance contracts. Our state has committed to the Clinton Global Initiative-CGI America to more than double Hawaii's existing energy savings performance contracting investments by State and County Agencies by 2015. As a partner in the U.S. Department of Energy's Performance Contracting Accelerator Program, Hawaii has also pledged to execute an additional \$100 million in performance contracting projects by the close of 2016. These are not empty pledges. I'm pleased to report that Hawaii has recently executed \$167.4 million in energy savings performance contracts featuring two state agencies. One covers 33 buildings that will save \$28 million over the 20-year contract term. A second contract covers 12 airports

statewide that will save at least \$518 million over the next 20 years and is the largest single performance contract by a single state agency in the nation.

In 2013, Governor Neil Abercrombie also established the State's first energy policy directives and dedicated the State to move the needle even further when he announced that Hawaii is going beyond 40 percent for renewables at the State's annual energy summit last year, the Asia Pacific Clean Energy Summit and Expo. Hawaii's energy policy also encourages full use of our diverse, abundant indigenous natural resources, such as solar, wind, geothermal, biomass, and hydro, each which compete favorably with the avoided cost of oil. Please go to energy.hawaii.gov for complete information on Hawaii's energy agenda and online clean energy tools.

Our early success has brought unexpected challenges for our six isolated, island grid networks. On Oahu, our major population center, 25 percent of circuits are beyond the 100 percent of minimum daytime load. Hawaii Island has 46 percent renewable penetration and at certain times of the day exceeds 100 percent of minimum daytime load. This translates to something that mainland interconnected grids rarely experience, curtailment of excess renewable energy on a regular basis, and in some cases grid instability on a system level.

We have called upon the most qualified subject matter experts in the nation to help us craft unprecedented solutions for unprecedented challenges in clean energy deployment. Our mantra is to focus on high impact solutions and leverage funding and other resources to build the solutions for a new energy ecosystem. States cannot do it alone.

State Energy Program ("SEP") funding has provided Hawaii with \$1.2 million since 2010, helping us move the needle on our key metrics: RPS, EEPS, and job growth. SEP has supported the State Energy Office's capability and leadership in regulatory proceedings, building efficiency, systems and infrastructure analysis, and energy assurance planning. Federal collaborations and funding have been and will continue to be critical ingredients in our success.

In 2013, Governor Abercrombie proposed and gained passage of SB 1087, a measure designed by the Hawaii State Energy Office that combines a rate-reduction

securitized bond structure and on-bill financing to enable a broader base of electric utility customers to acquire a renewable energy system or energy efficiency device.

We call this “GEMS,” for Green Energy Market Securitization and we’re using SEP funding to implement what is potentially a national model. When it is rolled out by year end, we expect GEMS to make energy improvements more affordable and accessible to Hawaii’s underserved markets, such as low- to moderate-income homeowners, renters and nonprofits.

SEP can help Hawaii and all other states with our increasing load of unfinished business. Building a 21st century grid is a must. In stretching the limits of what utilities can and should do, state energy offices, often with the coordination of the National Association of State Energy Officials (“NASEO”), can provide analysis, planning and regulatory support to fill the gaps. Smart technologies, such as advanced metering infrastructure and energy storage, are critical near term solutions to improving customer choice and widely deploying demand response.

For Hawaii, connecting our grids is an essential ingredient in going beyond 40 percent renewable penetration. A major policy achievement in 2012 was passage of SB 2785, establishing a regulatory framework and financing structure for interisland transmission cable development. Analysis commissioned by the Hawaii State Energy Office, with SEP and U.S. DOE support, has demonstrated that unifying the Oahu and Maui grids with an undersea transmission cable will expand renewable penetration, lower rates, enhance grid stability and reduce curtailment of renewable energy. This analysis is helping inform decisions soon to be made by the Hawaii Public Utilities Commission on next steps.

SEP funding can also be effectively used, as it has been in Hawaii, to build and update a suite of online tools that provide developers, investors and policy makers with assistance in clean energy project permitting, interactive resource data, and GIS mapping. We note that competitive SEP funding is useful, but increasing the formula funding offers greater flexibility for program design and implementation.

Clean energy has propelled Hawaii into one of the world's leading test beds for energy innovation. Our isolated, island setting has attracted entrepreneurs from around the world, looking to develop, test and prove emerging technologies and strategies before going to market. By leveraging state funding sources with federal SEP, we plan on seeding an innovation ecosystem to spur the development of clean energy solutions while also creating high-wage jobs and economic opportunities for the people of Hawaii.

Other State Examples

Like my colleagues appearing today from Minnesota and Texas, I am pleased to note that all the states have programs that we each learn from. We also believe that these examples can assist you as you consider options for federal action.

For example, in Arkansas they have developed a loan-loss reserve financing program through the utility bills. This on-bill financing program is intended to address the needs of residential customers. Like many other states, Arkansas has also targeted multi-family housing for energy efficiency services -- low-income homes are a special problem since the percentage of their income used for energy costs is so high.

In California, the voters approved a \$2.5 billion California Clean Energy Jobs Act, especially targeting schools and other public buildings. They have also developed a program for clean transportation infrastructure and energy -related R&D investments at a level of \$240 million annually. The state uses their SEP funds in the development and implementation of building codes and standards.

Colorado has instituted large new energy efficiency and renewable energy programs in the past few years. They are moving towards their targets of 5% reduction in peak electricity demand by 2018 and 30% of electricity coming from renewable energy by 2020. The state is estimating that this effort will add \$4.3 billion to the state's economy and 33,000 jobs.

In Kentucky, they have taken the lead in promoting "zero net energy" ("ZNE") schools. They have now constructed 10 schools under this program, and they are finding that the initial costs of ZNE schools is comparable to less energy-efficient schools. This is really a "no-brainer".

In Massachusetts, my colleagues have aggressively promoted energy efficiency, solar development and greenhouse gas emission reduction targets, while maintaining double digit clean energy industry growth. They recently began to implement a \$40 million program of community self-resilience associated with power outages caused by severe weather and climate change.

In New England, the governors of Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island and Vermont signed a regional infrastructure statement that commits them to develop a reliable, affordable and diverse energy portfolio. Working with the regional utilities they are focusing on expanding energy efficiency programs and renewable energy use, while also developing new natural gas and electric transmission capacity.

In Oregon, the state has helped fund more than \$11 million of projects in 60 school districts, including lighting upgrades, window replacements, HVAC improvements and biomass boiler installations. They are also implementing a program to convert 20% of all public and private fleets to alternative fuels.

Pennsylvania has joined other states in promoting alternative fuels. Pennsylvania has contributed \$20 million in incremental cost incentives for the purchase or retrofit of heavy duty natural gas vehicles. They have also deployed charging stations at all the rest stops on the Pennsylvania Turnpike. Whether utilizing ethanol, biodiesel, natural gas or electric vehicles, the states are pushing to diversify the fuels used within the transportation sector.

In Rhode Island they have implemented a partnership to achieve 20% energy use reductions in 100 public facilities by 2016. They have also targeted new combined heat and power (“CHP”) incentives that has already resulted in a new 12.5 MW project that reduced electricity use by 80%.

In Vermont, they have implemented a variety of renewable energy and energy efficiency projects for schools, communities and businesses, ranging from a biogas cogeneration project, a 12 MW wind plant and a 300 kW PV system.

In Washington, the state energy office announced the award of over \$14 million to financial institutions as seed funding to help individuals and companies finance

residential and commercial building energy efficiency retrofits and renewable energy installations. The Governor created 5 clean energy loans funds to stimulate economic development in the clean energy sector, and this is the first installment.

In West Virginia they have initiated an extensive energy planning process looking at all resources, both on the supply side and the demand side. This state is also trying to target the commercial/industrial sector through partnerships with the West Virginia University Industrial Assessment Center and the NIST-supported Manufacturing Extension Partnership.

Suggestions for Federal Action

The U.S. State Energy Program is the only program administered by the U.S. Department of Energy that delivers cost-shared, formula funding directly to the states, and allows each state to target funds to meet their needs. When Congress established SEP, it recognized that states were in the best position to understand their energy policy and program needs and opportunities. This flexibility is what has resulted in the program's track record of success. SEP is used by Hawaii, and all the states, to catalyze new energy business opportunities, reduce market barriers to energy efficiency and other alternatives, and support our governor's and legislature in the kind of energy planning and policy development that has transformed the energy sector over the past five years. SEP funding provided the seed funding and linkage to DOE that made the Hawaii Clean Energy Initiative possible. Similarly, the foundation for Hawaii's now successful ESPC program was laid using flexible SEP funding to develop public-private partnerships and technical assistance over a period of years – unlocking energy savings in the public buildings sector. This allowed our state to further advance ESPC when we recently partnered with DOE on the ESPC accelerator.

Conclusion

In conclusion, the State of Hawaii strongly supports SEP and we urge Congress to continue to provide your vigorous support to this engine for economic transformation.

Thank you for this opportunity to highlight Hawaii's clean energy leadership and offer suggestions on how future SEP funding can contribute to economic growth and innovation for Hawaii and the nation. As noted in Mr. Taylor's testimony, we also support enactment of the Shaheen/Portman bill (S. 1392), the SEP/Weatherization reauthorization bill (S. 1213), the Energy Productivity Innovation Challenge (S. 1209), the Residential Energy Savings Act (S. 1200), as well as Chairman Franken's legislation on building benchmarking (S. 1206) and the Local Energy Supply and Resiliency Act (S. 1205).