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Clean Energy Policy in Delaware: A Small Wonder

Collin O'Mara, Philip Cherry, and David Hodas

The United States' transition to a clean energy economy will require innovative approaches to reducing energy consumption, increasing renewable energy generation, and ensuring smarter transmission and distribution infrastructure nationwide. Under the leadership of Governor Jack Markell, the state of Delaware is rapidly emerging as a leader among states as it puts into place the laws, regulations, programs, and projects necessary to make the idea of a clean energy economy a tangible reality.

Delaware's efforts in these areas are built upon a proud tradition of innovation. From chemicals and pharmaceuticals, to financial instruments, vehicles, and agriculture, Delaware companies have led the nation in these areas for generations. And while the Delaware economy has often been defined by these four c's (chemicals, cars, credit, and chickens), the state is rapidly gaining a reputation for another "c"—clean energy or clean tech. That said, in Delaware, building a clean energy economy means much more than attracting a few companies—it means greening of the entire economy as we move towards a low-carbon future and putting in place both demand-side and supply-side policies to maximize both environmental and economic development benefits for the state.

At the root of this transformation is energy. Through a series of innovative laws, policies, and programs adopted in the past two years, Delaware is setting the stage to prosper in a clean energy economy by focusing on four principal areas: energy efficiency, renewable energy, utility planning and infrastructure, and leading by example in State operations. The effort to implement these initiatives spans the entire Markell administration, spearheaded by the Delaware Department of Natural Resources and Environmental Control (DNREC), and includes the Delaware Departments of State, Agriculture, and Transportation; the Delaware Economic Development Office; the Delaware State Housing Authority; and the Delaware Public Service Commission. In addition, the Governor's Energy Advisory Council (Council), composed of individuals representing government, utilities, energy providers, environ-

mental advocates, and other key stakeholders, advises the governor on energy policies, updates the State's Energy Plan for Delaware, and provides a critical forum for discussing energy issues of statewide significance.

In 2007, the Council, as required by statute, 29 Del. C. § 8055, began the process of drafting a five-year energy plan for Delaware for submission to the governor in early 2009. The goal for the energy plan was to identify where Delaware's energy system should be headed over the next twenty to thirty years and what can and ought to be done over the next five years to move Delaware in that direction. The process of developing the energy plan was governed by six Guiding Principles that the Council established at the outset: (1) increasing energy end-use efficiency and conservation; (2) reducing the environmental impacts (footprint) of energy used and generated in Delaware; (3) reducing energy used for transportation; (4) maximizing clean energy economic development opportunities; (5) maintaining and improving the reliability and security of Delaware's energy systems; and (6) minimizing energy-related costs and impacts on Delaware citizens.

The Energy Advisory Council sought to maximize public input into the process and to arrive at a broad consensus on the plan. To do this, the Council first conducted a public survey to assess the priorities in voters' minds and then set up five working groups to gather data and develop policy recommendations to guide the Council in its deliberations on the following issues: (1) Reducing Energy Use, (2) Reducing the Environmental Footprint of Energy Used by Delawareans, (3) Reducing Transportation Energy Use, (4) Ensuring Efficient and Effective Energy Transmission and Distribution systems, and (5) Supporting and Growing Delaware's Clean Energy Businesses. Each work group comprised about twenty to thirty volunteers and a chair. The work groups met regularly, in public meetings, gathering and evaluating a wide range of data and relevant information; identifying specific energy issues, needs, and goals; and finally developing a set of consensus-based recommendations for the Council to consider. The Council debated these recommendations and reports, accepting some, rewriting others, rejecting some, and adding a number of its own. The final result was a set of recommendations for the governor, which was the core of the proposed 2009–2014 Energy Plan (Plan) for Delaware. See GOVERNOR'S ENERGY ADVISORY COUNCIL, DELAWARE ENERGY PLAN 2009–2014 (Mar. 26, 2009), available at www.dnrec.delaware.gov/energy/Documents/Energy%20Plan%20Council%20report%20-%20Final.pdf. Each recom-

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mentation represented the unanimous vote of the Governor's Energy Advisory Council.

The Plan found that Delaware was in a position to become a national innovator and that the state has the opportunity to grow new fields of business and jobs. The energy planning process revealed that a shift to a greener-energy economy presented a remarkable opportunity to ensure a prosperous, healthy, vital Delaware in the twenty-first century. The Plan represents the emergence of a new generation of energy policy that will begin to move Delaware from a fossil-fuel-dependent society to one with a sustainable energy future. While Delaware is far too small to affect global climate change or world energy markets, the Council determined that it can prepare itself to be more resilient and less dependent on fossil fuels. See COUNCIL CHAIR'S INTRODUCTION, DELAWARE ENERGY PLAN 2009–2014 (Mar. 26, 2009).

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The Plan was presented to a newly elected Governor Markell, who had campaigned on a sustainable energy platform. Once in office, Governor Markell confirmed that “[p]lacing environmental sustainability at the forefront of our public policy debate creates jobs and opportunities for Delaware residents and companies,” so Delaware “must boldly move forward because efficiency produces real cost savings, environmental benefits, and economic opportunity.” Press Release, Office of Gov. Jack Markell, “Markell Signs Landmark Energy Legislation into Law” (July 29, 2009). Governor Markell also changed the energy governance structure within the state government by giving the Secretary of the DNREC (where the state energy office is located) overall responsibility for implementing the new energy plan. Secretary Collin O’Mara believes that the new energy policy “begins to fundamentally change the way we think about energy in the state, and moves us beyond cost being the sole determinant of supply.” Jeff Montgomery, *New Era May End Need for Fossil Fuel*, SUNDAY NEWS J., 1 (Aug. 9, 2009). Key legislators in the Delaware House of Representatives and Senate supported these policies and were instrumental in enacting key pieces of energy efficiency and renewable energy legislation, discussed below.

Energy Efficiency

Delaware Energy Efficiency Resource Standard. Millions, possibly hundreds of millions, of dollars are wasted on energy in Delaware annually because of inefficiencies. The Governor's Energy Advisory Council identified that Delaware's energy consumption per capita is among the highest twenty states in the nation and much higher than neighboring states. Some of most disadvantaged residents (low-income families and seniors on fixed incomes) are spending 20 percent of their total income on energy costs. By using energy more efficiently, Delawareans will have more money to save for the future or to spend in their local communities, which will, in turn, spur the creation of well-paying jobs and lead to a cleaner environment by reducing the need for generation. However, achieving these improved efficiencies will require the adoption of innovative laws and policies, both to remove the many deeply embedded structural market barriers and provide incentives for energy efficiency investments.

An Energy Efficiency Resource Standard (EERS) is a tool used in some jurisdictions to require energy efficiency resource deployment by load serving utilities, much the way a renewable portfolio standard (RPS) drives investment in renewable energy technologies. In June 2009, Delaware passed the Energy Conservation and Efficiency Act, 26 DEL. C. ch. 15, one of the most aggressive EERSs in the country, requiring the state's electric utilities to achieve a 2 percent electricity consumption savings and a 2 percent peak demand reduction by 2011, which will increase to 15 percent by 2015. Natural gas savings were also required. What is remarkable about the Delaware statute is that the EERS is in addition to the existing Delaware RPS (which is 25 percent by 2025). When taken together, Delaware's EERS and RPS represent one of the most aggressive clean energy targets anywhere in the country. Further, it is possible that a correctly instituted EERS could save consumers more money than will be needed to increase renewable energy to meet the short-term RPS goals; in the long run, renewable technology will be no more expensive than fossil-fuel-generated electricity (i.e., achieve grid parity) in the Mid-Atlantic region.

This new initiative also compliments the activities of the new Sustainable Energy Utility (SEU) (discussed below) and will promote the SEU's services in energy efficiency. Under the EERS statute, Energy Efficiency Credits would be created for use as trading commodities between utilities and energy service providers, such as the Sustainable Energy Utility, again much the same as Renewable Energy Credits are traded today for renewables.

Loading Order. The cheapest and cleanest electron is the one we do not produce. Energy efficiency is cost effective for utilities, saves consumers money, and can have significant environmental benefit, thus the frequently used mantra “Efficiency First.” Delaware institutionalized that slogan with passage of the Delaware Energy Conservation and Efficiency Act of 2009, which mandates that Delaware regulated utilities in Delaware “shall first consider electricity demand response and demand-side management strategies for meeting base load and load growth needs and shall preferentially obtain electricity demand response resources, and cost-effective renewable en-

ergy resources, before considering traditional fossil-fuel-based electric supply services to meet their retail electricity supply needs.” 26 DEL. C. § 1020(b).

Building codes. Building codes are routinely updated in Delaware and most states. Last year, Delaware updated its building energy codes for residential (2009 IECC) and commercial buildings (ASHRAE 90.1-2007) pursuant to a new legislative mandate that building energy codes and standards in the state shall be the “highest available energy conservation code as determined by the Delaware Energy Office.” 16 DEL. C. § 7602(a). More interesting than the building code revision was direction from the Delaware General Assembly that Delaware establish a program for zero-net energy capable buildings. As of “December 31, 2025 all new residential building construction in the State of Delaware shall be zero net energy capable,” and as of “December 31, 2030 all new commercial building construction must also be zero net energy capable.” 16 DEL. C. § 7602(c). The idea behind zero-net homes is to make homes as energy efficient as possible and to couple those homes with distributed energy systems, such as geothermal, solar photovoltaic, or small wind facilities such that these homes require no power from the grid.

The Delaware Sustainable Energy Utility. As the State adopts demand-side policies, such as the EERS, loading order, and building costs, Delaware’s new and unique SEU provides direct services through an innovative energy services vehicle. The SEU is a nonprofit entity charged with providing energy efficiency services and renewable energy services to Delaware residents, businesses, industries, governments, and others with a need for energy services. 29 DEL. C. § 8059. Focusing first on energy efficiency incentives and programs for residential, commercial, and industrial customers statewide, the SEU will utilize its own funding sources and those provided through the American Recovery and Reinvestment Act (ARRA) to create a demand for energy service jobs and employment far exceeding current levels.

The SEU is unique compared to other state programs that furnish services to residents. Unlike many other programs across the country, the SEU furnishes sustainable energy services for not only electricity consumption, but also to oil, propane, and natural gas fuels as well as the transportation sector. Also unique is the funding streams used by the SEU to help pay for efficiency or renewable investments. Unlike many other states that rely on system benefit charges placed on utility bills for revenue, the SEU is postured to take advantage of the inherent financial savings that can accrue from efficiency investments and envisions a shared savings model for financing bonds to finance programs. An Oversight Board, composed of state officials, academic institutions, and the private sector, oversees the SEU’s operations.

Renewable Energy and New Generation

While energy efficiency can significantly reduce our need for energy and reduce emissions, we will need substantial new generation in the coming years. Powering the electric grid and

our transportation sector is at the center of our climate problems and our future prosperity. Again, Delaware is taking the lead by implementing numerous innovative laws and regulations, such as one of the most aggressive RPSs in the nation. Delaware’s RPS includes a 3.5 percent solar carve out; provides innovative incentives for deploying renewable energy, including additional incentives for local manufacturing and local labor; implements progressive net-metering provisions to allow system owners to sell back excess power (to the grid, aggregate multiple commercial or agricultural meters) into a single account and allow communities to join together virtually to install larger shared systems; and joins forces with other states on implementing market-based programs, such as the Regional Greenhouse Gas Initiative (RGGI). Delaware is also working with companies, such as NRG and Calpine, to shut down old coal units, install emission controls to improve air quality, and fuel switch units to natural gas, while also evaluating opportunities for additional generation in the state to improve reliability and increase capacity. However, without a sea-change in scalable alternative energy technologies, making real progress toward our nation’s climate goals will be difficult. Finding suitable energy alternatives that are clean, renewable, sustainable, and cost effective is a challenge, but Delaware has a leg up on several fronts.

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Offshore Wind. As of this writing, Delaware was the only state in the country where an offshore wind developer had a signed power purchase agreement with a local utility. While this may change, clearly Delaware is on the forefront of offshore wind development. The Delaware project is the result of a two-year competitive proposal process launched by the Delaware General Assembly in 2006. As a response to the lifting of price caps emplaced through deregulation proceedings in the late 1990s, Delaware was looking at a greater than 60 percent increase in electric costs for its citizens, prompting the Delaware General Assembly to initiate a search for local, clean, price-stable sources of energy for the future. The result was the

Bluewater Wind proposal for a 200–450 megawatt wind park 12 miles offshore of Rehoboth Beach. This project is currently on schedule for deployment in 2014–2015 and may become the first offshore wind facility in the United States.

Worthy of note about Delaware's Advanced Metering Information efforts, by the end of 2010, with some small exceptions, the entire state and all electric customers will have smart meters in their homes and businesses.

Solar. Delaware also has a long-standing tradition as a leader in solar innovation. For more than twenty years, the University of Delaware has operated a high-efficiency solar laboratory that has collaborated with nearly all global leaders in the solar industry to improve performance and reliability. A Taiwanese solar cell manufacturer, Motech, recently purchased a former GE® facility for module manufacturing and plans to triple its production in the years ahead. DuPont™ is also committed to growing its solar business, providing a range of components products and recently dedicating its North American Photovoltaic Research Facility in Delaware.

Plug-In Hybrid Electric Vehicles. The advent of Plug-In Hybrid Electric Vehicles (PHEV) offers incredible opportunities for reducing our dependence on fossil fuels, cleaning our air, and responding to climate change. When coupled with alternative energy supplies furnished from a clean energy grid, the potential opportunities and impacts are astounding. In spring 2009, Delaware learned that GM® would be closing a large vehicle manufacturing facility in the state. Rather than lament this bad news, Governor Markell and his team quickly got to work trying to find a new manufacturer for the facility. The state recruited Fisker Automotive®, an emerging PHEV company, to manufacture in Delaware. Delaware did not offer the largest incentives among the states courting Fisker but was the most responsive and, in the words of Fisker's CEO, was able to pull together the deal faster than he can gather up his family of four to go out to dinner. In the coming years, Fisker anticipates creating more than 1500 jobs and manufacturing hundreds of thousands of PHEV.

Vehicle-to-Grid Technology. Google® the term "Vehicle-to-Grid" (V2G) and what comes up? The state of Delaware does, particularly the University of Delaware and their cutting-edge research under the guidance of Professor Willett Kempton. See University of Delaware, "Vehicle-to-Grid Technology," www.udel.edu/V2G/ (last visited Aug. 4, 2010).

The V2G system is one in which electric or plug-in hybrid vehicles communicate with the power grid to sell energy or demand response services by either delivering electricity into the grid or by curtailing charging rate. V2G technology also offers an elegant solution to the energy storage challenges associated with intermittent renewables such as solar photovoltaics (PV) and wind. By using the V2G-capable car as a storage device when grid power is inexpensive or otherwise plentiful due to highwind velocities (for instance at the Bluewater Wind facility offshore), Delaware can help reduce transportation-related emissions and levelize the variability of intermittent renewables. To demonstrate our state's commitment to this technology, Delaware passed the first legislation in the nation recognizing V2G technology as a potential distributed generation source and allowing the technology to access net metering benefits.

Utility Planning and Infrastructure

The intersection of energy policies and their impacts on consumers, the environment, and public health and welfare is at the utility level. What we do to spur a public policy agenda is often carried out by utilities as they provide services to their customers. Utilities are caught between the goal of providing reliable, low-cost power to ratepayers and the public policy agenda handed to them through state and federal regulatory agencies and state legislatures. Delaware deregulated its electric utilities in late 1999, as did many other jurisdictions, and is limited in the number of service providers currently operating within the state. This has led to a close working relationship between public policy and utility practitioners and has sparked some innovative and exciting developments.

For example, the Delaware Public Service Commission (PSC) is conducting an Integrated Resource Planning (IRP) process as required by the Electric Utility Retail Customer Supply Act of 2006 (EURCSA), 26 DEL. C. § 1007, the same law that brought the debate over new power sources for Delaware and that led to the Bluewater Wind offshore wind project. The PSC recently finalized IRP regulations that require, among many other things, utilities to account for all externality and life-cycle costs when evaluating current and future supply options. 26 DEL. ADMINISTRATIVE CODE Ch. 3010. This means that instead of comparing ten-cent wind to six-cent coal, in Delaware we will be comparing wind at ten cents to the real cost of coal—six cents *plus* coal's health and environmental costs. This integration of externalities into the energy planning process is rare in the United States and promises to help the state make more informed energy decisions. The IRP under these new guidelines is expected later this year.

Advanced Metering Information (AMI) technologies are being deployed across the country. What is interesting and worthy of note about Delaware's AMI efforts is that by the end of 2010, with some small exceptions, the entire state and all electric customers will have smart meters in their homes and businesses. This is mostly due to the smaller size of the market but is also a testament to the advantages of AMI technology.

gies to demand response initiatives and to empower customers with the knowledge necessary to reduce their demands, shave peak usage, and reduce their bills. AML, when complemented with a decoupled rate design that removes disincentives to energy efficiency and provides customers with the tools to maximize their savings, as is being considered in Delaware, will empower Delawareans to save even more on their utility bills by providing them real-time information on their energy usage. The prospect of an informed citizenry, coupled with the right public education and regulations and incentives designed to reduce electrical demand, may have a staggering impact on Delaware's energy usage into the future, making Delaware a state to watch in AMIs nationwide.

The issue of transmission of electrical energy has gained notoriety lately as states and the federal government grapple with how to integrate renewable energy into the grid and to move it from areas of plenty to areas of scarcity. Last year the governors of Delaware, Maryland, and Virginia signed a Memorandum of Understanding (MOU) to cooperate on offshore wind-energy issues and coordinated with the state of New Jersey to call for federal support for regional offshore wind energy transmission strategies. Delaware Governor Markell coordinated a joint submission with the governors of Maryland, New Jersey, and Virginia to the Federal Energy Regulatory Commission (FERC), urging FERC to require PJM, the regional grid manager, to evaluate innovative transmission solutions for offshore wind energy.

The Mid-Atlantic governors requested FERC to take action to ensure renewable energy sources such as offshore wind are included in transmission evaluation along with other energy sources. Further, the submission asked FERC to direct PJM to engage in a stakeholder process to resolve any related cost allocation issues and take any other steps necessary to incorporate renewable energy sources into its long-term transmission planning process. FERC has since issued a new Notice of Proposed Rulemaking, including much of what the governors had requested. In addition, PJM is rechartering their Regional Planning Process Working Group (RPPWG) to undertake a stakeholder process to evaluate and make recommendations on the need to expand the transmission planning criteria to include such issues as renewable generation. See www.pjm.com/committees-and-groups/working-groups/rppwg.aspx.

Lead by Example

In addition to the many initiatives described above, leading by example is an important priority for Governor Markell to show that the economic and environmental benefits from transitioning to a clean energy economy are tangible and replicable. In early 2010, Governor Markell issued Executive Order 18 (Feb. 17, 2010) (E.O. 18), known as the "Leading by Example" order. See http://governor.delaware.gov/orders/exec_order_18.shtml#TopOfPage. The executive order, among other things, requires agencies to (1) reduce their energy consumption by at least 10 percent by the end of fiscal year 2011, 20 percent by the end of fiscal year 2012, and 30 percent

by the end of fiscal year 2015; (2) receive 30 percent of the state's energy from renewable sources by 2013; (3) build new construction to the Leadership in Energy and Environmental Design (LEED) silver standard or equivalency; (4) divert 75 percent of solid waste leaving state facilities by reducing, reusing and recycling waste products; (5) reduce, from fiscal year 2008 levels, petroleum consumption by 25 percent, vehicle emissions by 25 percent, and vehicle miles traveled by 15 percent by the end of fiscal year 2012; and (6) measure progress by benchmarking, monitoring and tracking the energy use and carbon emissions of all State-owned and State-leased facilities.

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In just a few months, E.O. 18 has changed the way the state does business. For example, within just over a month of signing E.O. 18, an energy aggregation partnership was formed with all the state's counties and many municipalities and school districts, in which the demand for electricity for state and local facilities was totaled, and a "reverse auction" conducted to purchase the electricity for these facilities. The end result was an estimated \$22 million savings in electrical costs over the three-year life of the contract and achievement of the renewable energy purchase requirement well in advance of the 2012 deadline.

Given the wide range of efforts underway, Delaware is on a clear path to emerge as a national leader in the transition to a clean energy economy. Delaware, however, is not alone in seeking more energy efficiency, or renewable energy supplies, or reaping the job and economic benefits that may accrue from a sustained focus on clean energy. What sets Delaware apart is its ability to respond to urgent needs and complex issues in a timely and coordinated fashion. This advantage allows the state to integrate energy efficiency efforts, alternative energy technologies, utility planning, policies and incentives, and service delivery tools into a cohesive energy plan that will deliver real results, real savings, real economic opportunities, and real environmental and climate benefits for current and future generations. 