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17 May 23

MEMORANDUM FOR RECORD

SUBJECT LD 1778, An Act to Ensure a Sustainable Electric Grid

Committee Chair Senator Lawrence, Committee Chair Representative Zeigler and distinguished members of the Joint Standing Committee on Energy, Utilities and Technology,

Thank you for allowing me to bring forth my bill, An Act to Ensure a Sustainable Electric Grid

This bill attempts to accomplish several things sections 1 through 4 and 7 through 9 is designed to remove the expensive and destructive practice of net energy billing Sections 5 and 6 brings parity among all forms of renewable energy generation by removing the 100 MW cap to allow them to compete competitively with solar and wind power generating stations, thereby promoting a free market in the utility market and encouraging a more stable and dependable grid by diversifying our generating options Finally, sections 10 and 11 overhaul our participation in the Regional Greenhouse Gas Initiative Trust Fund (RGGI) to lower consumer costs by returning some of the investment to the very people who are paying the tax to belong in the fund

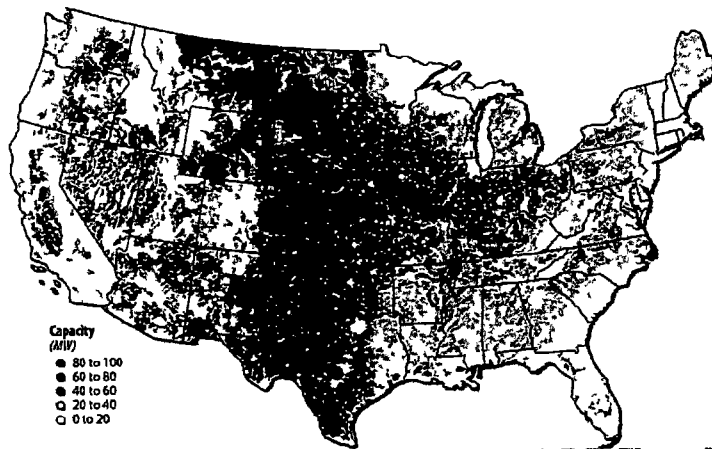
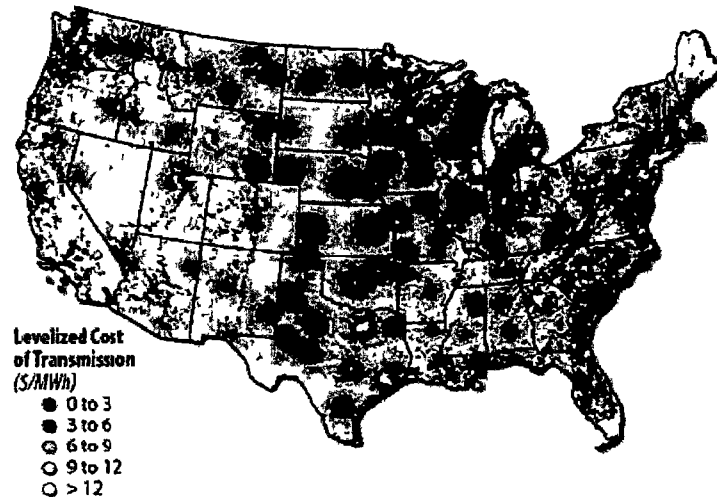
According to the Maine Office of the Public Advocate, in a document entitled "The Cost of Net Energy Billing" released last month, Net Energy Billing will cost Maine electrical rate payers an additional \$220 million per year by 2025, with those costs increasing over the next 20 years These costs come from 'stranded' costs which were created after the power companies were 'deregulated' and transmission and generation assets were separated into individual entities, and are exasperated by the use of subsidies paid to Community Solar Projects

Traditionally, net energy billing had been used for small solar projects installed by homeowners who installed local systems and used the generated power to offset their electrical bills However, under legislation passed in 2019 the use of Net Energy Billing was expanded to Community Solar Projects

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This legislation, along with caps on other sources of renewable forms of electrical generation, caused a flood of new solar projects. Investors rushed into Maine to install new small solar farms despite the fact that Maine is one of the worst states to install such facilities based on our latitude, average cloud cover (averaging less than 2.5 hours daily peak solar exposure), ground cover and average elevation resulting in some of the highest per megawatt dollar cost in both generation and transmission and capacity for solar power.



[Source: *The Renewable Energy Potential (Rev V) Model: A Geospatial Platform for Technical Potential and Supply Curve Modeling*, National Renewable Energy Laboratory]

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Instead of promoting sensible use of solar technologies, such as installation of passive solar heating systems, solar companies found a new 'black gold' in Maine and rushed to take advantage of the newly available subsidies. These small community solar installations, which are limited to 5 MW in size, have their rates pegged to the price of electricity generated by natural gas, which results in higher rates than those larger solar installations which generate electricity at a much lower rate.

For Tariff Rate program subscribers (available to non-residential customers only) the utility must purchase the energy from the project and sell them into the energy market, which is usually done at a loss. This loss of revenue is then passed on to all non-participating customers. The Office of the Public Advocate estimates that this will cost rate payers \$161 million dollars per year by 2025, going up each year after that for the next 20 years.

For kWh Credit Program subscribers, the utility must reduce the subscriber's bill by the amount of energy produced by the project. This loss of revenue is then passed on to existing non-participating customers. The Office of the Public Advocate estimates that this will cost rate payers \$56 million dollars per year by 2025, going up each year after that for the next 20 years.

The expansion of the subsidies to Community Solar Projects is strictly to encourage the growth of solar projects in Maine in support of the administration's stated policy goals, and according to Phil Bartlett, Chair of the Public Utilities Commission, "Funding public policy through electricity rates is a regressive way to do it. The issue is that the magnitude of the cost that we're seeing over a very short period of time is going to lead to significant increases in the costs of electricity bills."

Additionally, this bill attempts to bring balance to the market for renewable energy generation sources and remove the special status for solar and wind projects.

As I mentioned before, Maine is not the ideal environment for solar power. I would like to preface the following by informing the committee that I am NOT anti-solar. I am a big proponent of passive solar heating systems, a technology that seemed to attract some following 60 years ago and then fell away, presumably because of the technical inefficiencies and costs of photovoltaic cells of the era. I think that SoDis, or solar distillation, is one of the greatest things we have found to bring life saving, clean water to impoverished communities around the third world, as is the use of solar desalination plants near coastal deserts. I greatly appreciate the use of solar systems in remote installations where no other form of power generation is available and in emergency situations. On my farm I have several solar panels for emergency use and have setups to run my water pumps, some lighting, chargers and emergency ham radios in the event of an extended power loss and I look forward to the day when we perfect the use of Lithium-metal or Iron-acid batteries to make my systems more efficient.

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However, our current push to prioritize solar over other forms of power generation, including other forms of renewable power generation that may actually be more environmentally friendly, is turning into an expensive and unsightly boondoggle. While the solar 'snake oil' salesmen come to town, they offer great benefits, jobs and savings. However, the investment companies that own these projects (which often change several times over the course of a solar project's life) offer promises that are not delivered. The aforementioned savings are minimal and end up costing the Maine ratepayers as a whole more and the temporary jobs they offer are few.

More importantly, the products the solar salesmen promise to deliver with low cost energy just do not, well, deliver. These promises to deliver low cost energy solutions are based on what the Energy Information Administration calls the "capacity weighted Levelized Cost of Electricity" [*Levelized Costs of New Generation Resources in the Annual Energy Outlook 2022*], March 2022]. According to the EIA, standalone solar systems (without energy storage systems like batteries) and hybrid solar systems (with energy storage systems like batteries) each have a "capacity factor" of 30%. This means that the systems will generate an average of 30% of the power of the name plate rating, or the maximum power it could produce if running under peak conditions on a clear sunny day. However, according to the EIA, Maine has an average capacity factor of 16.1.

These listed capacity factor ratings however are for single axis tracking installations. Single axis tracking installations rotate individual panels on an axis to keep the angle of incidence of the sun to a minimum to maximize the performance of the photovoltaic cell. These tracking systems require expensive, powered machines to move each 3x5 foot panel to track the sun's progress throughout the day. The solar companies that sell and install these Community Solar Projects, in order to maximize profits, do not typically use such systems. I have yet to see one solar installation in the state on anything but a fixed, windproof installation frame. Such static installations do not maximize the angle of the panel and thereby even lower the capacity factor. If the solar companies were actually serious investing in a sustainable and effective solar grid, they maximize the use of each installation site by utilizing tracking systems and using vertical installation strategies when available rather than littering our iconic and scenic landscape with inefficient photovoltaic eyesores, while cashing in on the subsidy craze (incidentally, the levelized costs for solar include the costs with subsidies applied and would therefore be more without the subsidy calculated in).

If policy makers were concerned about a sustainable grid, especially in a state where we have freezing cold nights in December, we would not prioritize solar over other forms of energy production, such as natural gas which has a capacity factor of 87 and currently provides 25% of our electrical generation capacity or hydroelectric, a renewable form of energy which provides 27%. Sections 5 and 6 would therefore remove the 100 MW caps for all other forms of renewable energy, including hydroelectric, geothermal and biomass generating facilities. This would encourage a free market approach to the electrical energy generating market which still promoting renewable energy (there have been towns

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in Maine, among them Augusta, Ellsworth and Dixmont that had banned or halted solar projects over environmental concerns with disposal of photovoltaic cells) This change will also level consumer electricity prices

I will make one final comment about our use of solar in the grid, or rather, I will ask a question Where are the batteries? If the goal is truly to be sustainable renewable energy sources, and we continue to put the emphasis on solar, we must consider two things For every kilowatt of power that has to be available when the sun shines, there has to be a kilowatt in standby for when the sun does not shine but the demand is present Currently, we are building thousands of solar projects without any energy storage systems to accompany them – non-hybrid systems If the goal is truly to supplant other forms of energy with intermittent systems such as solar, or wind, then it logically follows that at some point the power generation of those intermittent sources will surpass the other sources At this point you will either need to have some place to store, or ‘bank’, excess energy produced for when the sun is not shining and the wind is not blowing, or you will have no electricity to give out to the demand These will either be blackouts, or scheduled brownouts It has been happening in California for years, it has started happening in the last two years to the customers of the Tennessee Valley Authority We cannot have brownouts in sub zero weather after we convince half of our population to convert to heat pumps

The second thing we have to consider at this point, how much more will it cost once we have to start building the batteries? So much for solar being the ‘lowest cost’ energy solution, and Maine rate payers will pay

Finally, the last part of the bill addresses our participation in the Regional Greenhouse Gas Initiative Trust Fund While RGGI is a ‘cap and trade’ system rather than a carbon tax, it is a tax nonetheless by default as the costs incurred by generators for purchasing offsets is never borne by the company who is forced to purchase them – these costs are always passed on to the consumers As the Wall Street Journal writes (March 9, 2009), “Cap and trade is the tax that dare not speak its name”

While the goal of RGGI is to force compliance by participating entities and then charge them for doing so in order to fund policy initiatives, it comes at the cost of the rate payers all while the program’s “contribution to directly reducing the global accumulation of GHG emissions in the atmosphere is arguably negligible” [Congressional Research Service, 2019] As such, this bill proposes changes to require that a significant portion of the monies collected in the fund be returned to the taxpayers who bear the cost of the policy initiatives and sets a schedule to do this

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I encourage the committee to consider this legislation and support it with a vote of 'Ought To Pass' I thank you for your time and will gladly answer any questions to my ability

Respectfully,

A handwritten signature in black ink, appearing to read "Chad R. Perkins", written in a cursive style.

Rep Chad R Perkins
District 31

ATT

CF
Committee Chair Senator Lawrence
Committee Chair Representative Zeigler
Energy, Utilities and Technology Committee Members

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