

Maine lawmakers propose groundbreaking way out of net metering wars

Legislators want a 'Standard Buyer' to acquire distributed generation and value it properly

By [Herman K. Trabish](#) | June 8, 2015

Lawmakers in Maine may have found the best solution for getting off the net metering merry-go-round since [Massachusetts' minimum bill proposal \(http://www.utilitydive.com/news/is-the-massachusetts-utility-solar-compromise-a-model-for-the-industry/274572/\)](#) sank, clean energy advocates in the state say.

The [Maine Office of the Public Advocate \(http://www.maine.gov/meopa/\)](#) and an influential state legislator led a joint committee of the Legislature to unanimous approval of a proposal that will offer solar developers at every market level an opportunity to opt out of net energy metering (NEM). Instead of retail rate NEM, they will have the choice of a new plan that allows them to capture more value for their solar.

"We've brought stakeholders together only to find that, for different reasons, everyone is looking for renewable energy policy that will bridge us seamlessly into the future," explained [Rep. Sara Gideon \(D\) \(http://legislature.maine.gov/housedems/gideons/index.html\)](#), the House Assistant Majority Leader who helped craft the proposal.

"In a policy area that is [so often partisan \(http://www.utilitydive.com/news/maine-lawmakers-push-bills-to-boost-solar-efficiency/359195/\)](#) and that often pits environmentalists, solar businesses, and utilities in opposition to each other, we are now working on really exciting and groundbreaking policy," she said.

Recent distributed energy debates in Maine look much like similar discussions surrounding the value of solar from Hawaii to Massachusetts. They center on two key aspects: How do distributed solar providers and utilities get past the looming 1% of peak load NEM reconsideration trigger that [Central Maine Power \(http://www.cmpco.com/\)](#) (CMP), the state's dominant utility, will soon hit? And how do legislators apply [Maine's value of solar \(VOS\) study \(http://www.utilitydive.com/news/is-solar-worth-033-per-kwh-inside-maines-valuation-debate/376364/\)](#), submitted earlier this year, that found solar-generated electricity's actual value could be as high as \$0.33 per kWh -- even though Maine's retail electricity rate is around \$0.13 per kWh?

The Resolve

In Maine, a legislative resolution is called a Resolve.

"Resolve, To Develop an Alternative to Net Energy Billing that Fairly and Transparently Allocates Costs and Benefits of Distributed Generation to All Customers," [LD 1263 \(http://legislature.maine.gov/legis/bills/display_ps.asp?LD=1263&snum=127\)](#), was recently approved by the Legislature's bipartisan Joint Committee on Energy, Utilities and Technology. If approved by the full House and Senate and allowed to become law by the Governor, it would initiate a proceeding at the Maine Public Utilities Commission to answer those two key questions.

"Solar is coming to Maine. Over time, with rising electricity rates and the [falling price of solar \(http://www.seia.org/research-resources/solar-market-insight-report-2014-q4\)](#), we will have more solar one way or the other," explained Maine Public Advocate Timothy R. Schneider. "The VOS study calculates what the value of solar is and we are not capturing it but we want to because that would be a good deal for ratepayers."

The Resolve was supported by the committee's seven Democrats and six Republicans, representing both the lower and upper houses. It was endorsed by [Revision Energy \(http://www.revisionenergy.com/index.php\)](#), the [Natural Resources Council of Maine \(http://www.nrcm.org/\)](#), and the energy subcommittee of the Maine Association of Building Efficiency Professionals, which includes many solar installers.

It is opposed by [The Alliance for Solar Choice \(http://allianceforsolarchoice.com/\)](#), which calls it -- without explanation -- an attempt "to keep Mainers captive to their constantly rising rates."

The Resolve designated a recent value of solar white paper, entitled "[A Ratepayer Focused Strategy for Distributed Solar in Maine \(http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf\)](#)," as the basis of the regulators' deliberations. The white paper was commissioned by the Public Advocate's office and written by Strategen Consulting's Lon Huber.

"We have found it increasingly challenging to agree on [a policy that works for solar \(http://www.gosolarcalifornia.ca.gov/\)](#)," Gideon noted. "The basic concepts in the white paper are why we have been able to proceed as far as we have."

What's next for the Resolve

"The Legislature finds that the policy structure described in [the white paper] merits further exploration," the Resolve declares, while specifying that the legislature does not affirm the white paper's hypothetical numbers for installed capacity and [per-kWh rates \(http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_net_metering.pdf\)](#).

"The legislature and state regulators will determine those numbers," Schneider said.

The Resolve instead instructs Maine's commission to "develop an alternative to [net energy billing \(http://www.utilitydive.com/news/what-net-metering-will-do-to-the-utility-business/315432/\)](#) through a stakeholder process" that captures a consensus and to report its findings to the legislature by the end of January 2016.

The commission's report is also to include an overview of the alternative policy, [technical specifications \(http://www.rmi.org/elab_empower\)](http://www.rmi.org/elab_empower), necessary rules and policies, a proposed timeline, technical and legal barriers, and areas where stakeholders could not agree.

With NEM, which Maine's investor-owned utilities are required to offer, customers get bill credit at the retail electricity rate for the electricity their on-site systems send to the grid. It is popular with customers and the solar industry primarily because, the paper explains, [it is simple \(http://puc.nv.gov/uploadedFiles/pucnv.gov/Content/About/Media_Outreach/Announcements/Announcements/E3%20PUCN%20NEM%20Rep.pdf=Net-Metering-Study\)](http://puc.nv.gov/uploadedFiles/pucnv.gov/Content/About/Media_Outreach/Announcements/Announcements/E3%20PUCN%20NEM%20Rep.pdf=Net-Metering-Study).

But [skyrocketing solar growth \(http://www.seia.org/news/us-installs-62-gw-solar-pv-2014-30-over-2013\)](http://www.seia.org/news/us-installs-62-gw-solar-pv-2014-30-over-2013) driven by the falling cost of solar and the increasing cost of electricity is undermining consensus agreement on NEM, the paper explains, because "customers are compensated at rates that do not reflect the value of the resource."

The problem with [NEM economics \(http://www.rmi.org/electricity_grid_defection\)](http://www.rmi.org/electricity_grid_defection), it adds, has resulted in residential customers facing changes in rate design that compromise the value proposition of their investments. NEM does not drive solar adoption by commercial-industrial customers, whose big rooftops represent a huge market opportunity, because their per-kWh charges are much lower than their demand charges.

Utilities object to NEM because it seems to lead to [a shift of costs \(http://www.utilitydive.com/news/wellinghoff-and-tong-a-common-confusion-over-net-metering-is-undermining-u/355388/\)](http://www.utilitydive.com/news/wellinghoff-and-tong-a-common-confusion-over-net-metering-is-undermining-u/355388/) for grid infrastructure to non-solar owners, the paper reports. And the lack of a connection between the compensation rate and solar's actual value makes it difficult to conclusively prove its costs and benefits to the satisfaction of utilities or solar advocates.

The white paper

Huber's white paper offers a new way to use the VOS study through a multi-tiered [Market-based Aggregation Credit \(MAC\) program \(http://strategen.com/storagealliance/sites/default/files/White%20Papers/Market-based_Aggregation_Credit.pdf\)](http://strategen.com/storagealliance/sites/default/files/White%20Papers/Market-based_Aggregation_Credit.pdf) with five policy objectives:

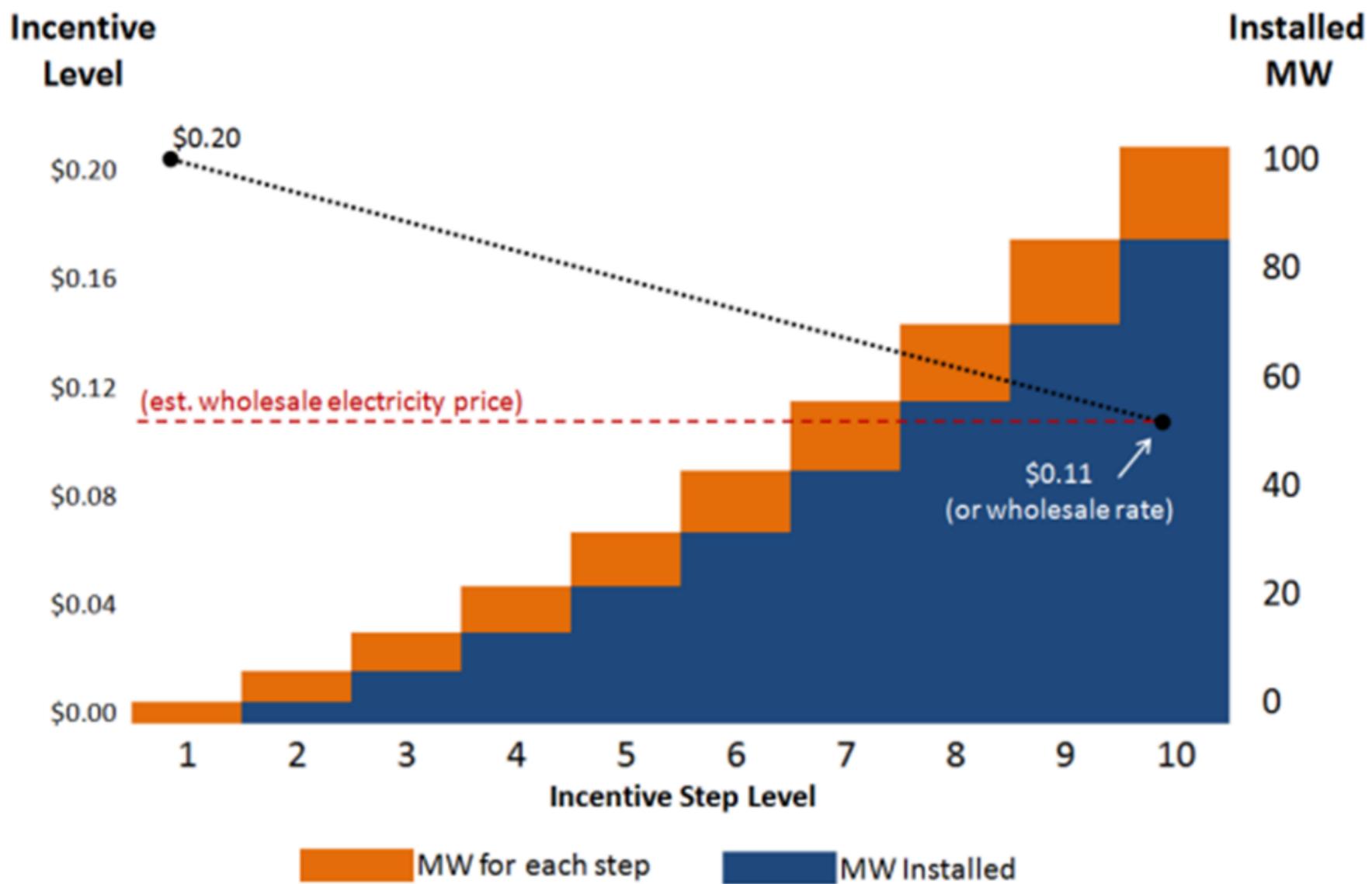
1. An alternative to NEM that is "fair" and "cost-conscious"
2. Long-term compensation for solar that is based on the value of solar analysis and better than NEM
3. A competitive reverse auction for the commercial-industrial sector and a capacity-based declining block program for residential solar — two market mechanisms designed to drive the price of solar down, while another program provision (see objective 5) captures its full value
4. The potential for Maine to get to as much as 300 MW of new solar capacity by 2025, with 150 MW coming from the wholesale segment, 100 MW from the residential and commercial sectors, and 50 MW from industrial and community solar markets
5. Procurement by a Standard Buyer agency that would aggregate and sell renewables-generated electricity into all available markets to monetize the full value of solar

A [reverse auction mechanism \(http://www.seia.org/policy/renewable-energy-deployment/reverse-auction-mechanism\)](http://www.seia.org/policy/renewable-energy-deployment/reverse-auction-mechanism) (RAM) invites developers of commercial-industrial and utility scale projects to bid competitively against other developers to provide renewables capacity. The buyer, in this case the Standard Buyer, would pick the offers that come in at the lowest prices.

In a [declining block program \(http://votesolar.org/wp-content/uploads/2013/09/Solar-Energy-for-a-Stronger-NY_Vote-Solar.pdf\)](http://votesolar.org/wp-content/uploads/2013/09/Solar-Energy-for-a-Stronger-NY_Vote-Solar.pdf) the price the Standard Buyer pays for residential solar would be pre-established by the commission. It might be the VOS price of \$0.33 per kWh, or the direct benefit to customer price of \$0.20 per kWh, or the retail rate of electricity, or the utility's avoided cost for other generation.

When the state achieves a commission pre-designated block of capacity, the price the Standard Buyer pays new solar owners will [drop to a lower level \(http://www.seia.org/state-solar-policy/new-york\)](http://www.seia.org/state-solar-policy/new-york) on the assumption the higher capacity means solar needs less of an incentive and economies of scale should be at work to make unsubsidized solar more affordable.

Figure 5. Overview of Step-level Changes



The white paper uses a \$0.20 per kWh as the price where regulators should start the reverse auction bidding and the declining block rates.

Credit: Credit: [Strategen white paper \(http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf\)](http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf)

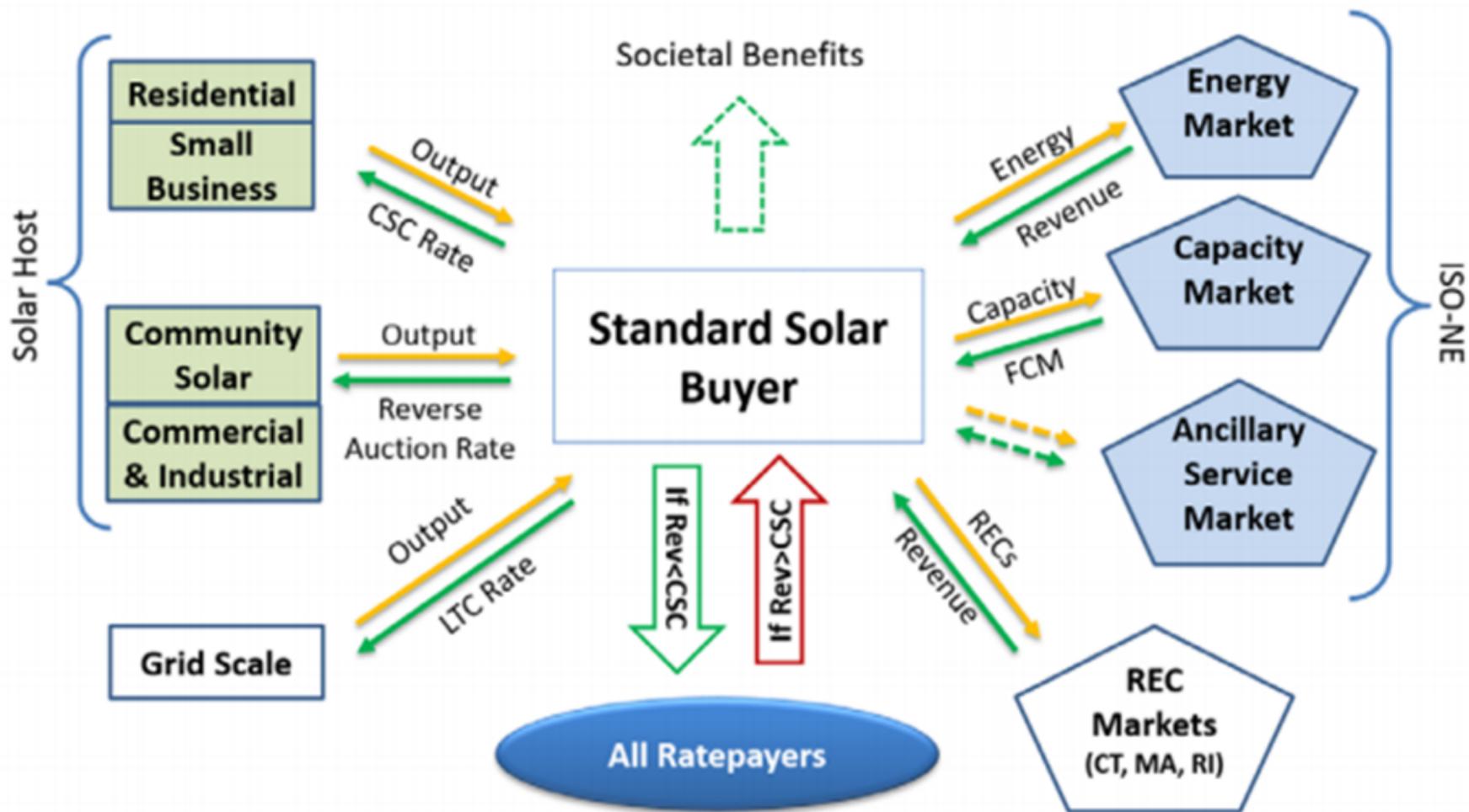
Perhaps the most innovative part of Huber’s program is that it will test Maine’s VOS calculations in real markets. As the Standard Buyer acquires and resells solar-generated electricity, it will be tracked. That could help illuminate debates over the value of solar in other states.

The Standard Buyer

Centralized management of all the customer-sited and wholesale distributed generation, procured through 20 year fixed-price contracts under the Standard Buyer, would “allow for a more efficient aggregation and sale of the different attributes solar energy can provide,” the paper explains. “The [Standard Buyer] would aggregate the energy, RECs, capacity value, and ancillary services potential and monetize these in the applicable markets.”

Figure 9. Market Overview

Overview of Market Transactions



Credit: Credit: [Strategen white paper \(http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf\)](http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf)

The white paper uses a \$0.20 per kWh rate as a “placeholder” for the price at which regulators will ultimately start the reverse auction bidding and the declining block rates, Schneider explained.

“It is the sum of the things in the VOS that directly benefit ratepayers, including the 20 year [levelized price for energy \(http://www.lazard.com/PDF/Levelized%20Cost%20of%20Energy%20-%20Version%208.0.pdf\)](http://www.lazard.com/PDF/Levelized%20Cost%20of%20Energy%20-%20Version%208.0.pdf), avoided transmission and distribution, avoided generation capacity, and avoided reserve capacity,” he said.

Figure 3. Levelized Value Stack (20 years) for Customer-sited Solar Contract - CMP

Value Component	CMP 20 Year LCOE (\$/kWh)
Avoided Energy Cost	\$0.078
Avoided Generation Capacity Cost	\$0.039
Avoided Residential Generation Capacity Cost	\$0.005
Solar Integration Cost	-\$0.004
Avoided Trans. Capacity Cost	\$0.016
Market Price Response	\$0.069
Total	\$0.20

\$0.20 per kWh is the starting point identified by Strategen for the value of solar

Credit: Credit: [Strategen white paper \(http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf\)](http://www.maine.gov/meopa/news/Maine%20VOS%20White%20Paper%20V2%202.pdf)

Revenues from sales of distributed generation into those markets by the Standard Buyer go into [Maine's stranded cost recovery mechanism \(http://legislature.maine.gov/statutes/35-A/title35-Asec3208.html\)](http://legislature.maine.gov/statutes/35-A/title35-Asec3208.html) and get redistributed to all ratepayers.

"It is transparent and it is equitably allocated to all ratepayers," Schneider said.

The [full value of the DG \(http://www.rmi.org/rmi_page_adapting_utility_business_models\)](http://www.rmi.org/rmi_page_adapting_utility_business_models) production is returned to the system owner as a tax-free bill credit. But the system owner pays the full retail rate for all usage. "And because the output of the solar is separately metered, that customer pays a full transmission and distribution charge so there is no shift of costs to non-DG owners," Schneider said.

Using Maine's value of solar

Maine's [legislatively-mandated Value of Solar study \(http://www.mainelegislature.org/legis/bills/bills_126th/billtexts/SP064401.asp\)](http://www.mainelegislature.org/legis/bills/bills_126th/billtexts/SP064401.asp), overseen by the PUC, provided "a menu of values," according to Pace Energy and Climate Center Executive Director Karl Rabago, co-author of the "[Maine Distributed Solar Valuation Study \(http://www.nrcm.org/wp-content/uploads/2015/03/MPUCValueofSolarReport.pdf\)](http://www.nrcm.org/wp-content/uploads/2015/03/MPUCValueofSolarReport.pdf)."

In the Resolve, the committee asks the commission to find an alternative to NEM by using the program laid out by the white paper and values derived in the VOS study for different applications of solar.

As a utility executive, Rabago helped create [Austin Energy's 2006 first-ever value of solar tariff \(http://www.seia.org/research-resources/austin-energy%E2%80%99s-value-solar-rate\)](http://www.seia.org/research-resources/austin-energy%E2%80%99s-value-solar-rate). He endorsed the Maine proposal's innovation but raised three concerns. First, if more value is returned by solar than is paid at the retail electricity rate, solar owners end up essentially subsidizing non-solar owners. Second, it seems to pass over the quantifiable system benefits solar provides to non-solar owners. Third, it asks for solar to be bid at below its full value.

Strengths, weaknesses, and politics

There is stakeholder consensus on using the white paper and values derived in the [legislatively-mandated Value of Solar study \(http://www.mainelegislature.org/legis/bills/bills_126th/billtexts/SP064401.asp\)](http://www.mainelegislature.org/legis/bills/bills_126th/billtexts/SP064401.asp) for what will essentially be an alternate compensation mechanism to NEM, Gideon said. There is also agreement on using the residential rate declining block program and on NEM being phased out when the alternate compensation mechanism is fully phased in.

There is concern about getting the [reverse auction mechanism \(http://www.seia.org/policy/renewable-energy-deployment/reverse-auction-mechanism\)](http://www.seia.org/policy/renewable-energy-deployment/reverse-auction-mechanism) right to protect smaller businesses and about getting the long term contracts for grid scale solar right, she added. And there is disagreement on the numbers and the components of the alternate compensation mechanism.

Gideon singled out the efforts of Democratic Representative Marty Grohman and Republican Representative Larry Dunphy in pushing the Resolve through the committee.

Insiders say Gideon and her allies will shepherd LD 1263 past the Democrat-controlled lower house. Its fate in the Republican-dominated upper body remains uncertain.

Republican [Governor Paul LePage \(http://www.maine.gov/governor/lepage/\)](http://www.maine.gov/governor/lepage/) is said to currently be hostile toward legislation sponsored by Democrats but has been known to let popular initiatives like this one become law without his signature.

"I think this idea will work but some of it is brand new, which is why we are using the Resolve to send it to the PUC," Gideon said. "We are asking them to continue to take input from all the stakeholders and then to send it back to us with an explanation of how it would really work with real numbers."

Top Image Credit: Fotolia

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