

# Next Generation Solar Policy Framework for Massachusetts

Developed by Acadia Center with significant input, advice, and contributions from numerous friends,  
including extensive discussions with the solar and environmental communities

*Endorsers to date: Acadia Center, Acuity Power, American Lung Association of the Northeast, Appalachian Mountain Club, Arise for Social Justice, Beaumont Solar, Berkshire Environmental Action Team, Berkshire Photovoltaic Services, Better Future Project, Blacksmith Solar, Boston Community Capital, Boston Local Initiatives Support Corporation, Boston Solar, Cape & Islands Self-Reliance Corp., Citizens Awareness Network, Citizens' Housing and Planning Association, Clean Water Action, Climate Action Business Association, Coalition for Social Justice, Codman Square Neighborhood Development Corp., Community Labor United, Conservation Law Foundation, Conway Energy Committee, Coop Power, East Light Solar, Enterprise Community Partners, Environment Massachusetts, Environmental League of Massachusetts, FireFlower Alternative Energy, Green Dalton Committee, Gridwerks Consulting, Health Care Without Harm, Healthlink, Heartwood Group, Heidrea Communications, International Brotherhood of Electrical Workers Local 103, Mass. Assoc. of Community Development Corporations, Mass Energy Consumers Alliance, Massachusetts Climate Action Network, Massachusetts Interfaith Power & Light, Massachusetts Sierra Club, Massachusetts Solar Owners Association, MassSolar, Nashoba Conservation Trust, New England Chapter of Environmental Entrepreneurs (E2), New England Clean Energy, No Fracked Gas in Mass, Northeast Solar, Pope Energy, PV Squared, RePower Partners, SHR Energy Management, Solar Design Associates, SolarFlair, Solar Store of Greenfield, South Coast Energy Challenge, South Mountain Company, StopNED, SunBug Solar, Toxics Action Center, U.S. Green Building Council - MA Chapter, WinnCompanies, Zapotec Energy, and 350 Massachusetts*

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**Contact:**     **Mark LeBel, Staff Attorney, Acadia Center**  
[mlebel@acadiacenter.org](mailto:mlebel@acadiacenter.org), 617-742-0054 x104

## **Introduction**

Solar provides many benefits to ratepayers and society, including reducing electricity prices at times of peak demand, minimizing the need to invest in transmission and distribution infrastructure, protecting consumers from the unpredictable cost of fossil fuels, and lowering greenhouse gas emissions and health-threatening local air pollution. Numerous in-depth studies of the benefits and costs of solar, across the country and regionally, have determined that the benefits of solar outweigh the costs of net metering, and any issues with net metering are primarily an accounting problem. Building upon the high-level recommendations of the Massachusetts Net Metering and Solar Task Force, we recommend reforming solar compensation to correct these accounting issues without sacrificing Massachusetts' leadership on solar policy. This framework has three sections: (I) Principles for Reform, (II) Elements of the Policy Solution, and (III) Explanations of Key Policy Elements.

## **Principles for Reform**

Action on solar policy in Massachusetts must:

- Credit solar projects fairly and fully for all value they provide;
- Develop a sustainable rate model for maintenance and modernization of the distribution grid;
- Contribute substantially towards all relevant state and federal environmental and public health requirements and goals, including climate and clean air;
- Make significant progress towards the achievement of 20% solar by 2025, a goal that is attainable based on Massachusetts' total solar potential and recent rates of solar growth;
- Maintain or expand equitable access to solar on fair terms, including for communities of color, renters, and others who cannot site solar on their roofs;
- Advance a long-term utility regulatory framework that supports solar, energy efficiency, storage, electric vehicles, and other distributed energy resources, and appropriately protects low-income customers and vulnerable populations;
- Empower consumers to make smart energy decisions, both economically and environmentally;
- Preserve individual consumers' right to self-determination through generation of clean electricity for personal consumption;
- Honor policy commitments made to date;
- Contain a market-driven development approach that fosters a diverse, self-sustaining solar market; and
- Continue a record of success on job growth inside and outside the solar industry and foster sustainable economic growth that includes good jobs with family-sustaining wages, benefits, and career pathways for local residents.

## Elements of the Policy Solution

We offer the following policy outline, which includes full and fair compensation for solar projects, a fair compensation mechanism for use of the distribution grid, and a pathway to a diverse, self-sustaining solar industry as well as a broader clean energy future.

- Suspend and then eliminate net metering caps
  - Immediately suspend the caps to enable the installation of 1600 MW AC of solar; eliminate caps entirely once the post-1600 MW policy framework is in place
- Maintain SRECII and other policy structures unchanged through 1600 MW
- Conduct a value of solar or solar cost-benefit study
  - DOER study must be a public and transparent process with ample opportunity for a wide range of stakeholder input
  - Study must consider full range of benefits and costs to ratepayers and society as a whole (listed in explanatory section below)
  - This study must be completed with sufficient lead time to inform rate proceedings initiated at DPU and follow-on regulatory proceedings at DOER
- Undertake DPU proceedings on new per-kWh rate compensation mechanisms
  - Preserve the current structure for the retail energy supply credit and the transmission credit
    - For virtual net metering projects in rate classes with demand charges or fixed charges that cover costs beyond metering, billing and service drop, these charges should be converted into a per-kWh credit
  - Determine non-discriminatory distribution system benefit credits and charges for using the distribution grid as the “fair compensation mechanism” agreed to by Net Metering and Solar Task Force
    - Solar systems under 25 kW continue to have full distribution retail rate credit
    - Solar systems between 25 kW and 1 MW AC receive equivalent treatment whether on-site or off-site
  - Establish an energy system benefit credit to account for ratepayer benefits not included in current retail energy supply credits, including but not limited to additional value from coincidence with periods of high demand, price suppression, reduced fuel price risk, and avoided environmental compliance costs (elaborated in explanatory section)
  - Establish a distribution system locational credit for solar projects that relieve congestion in specific areas, or provide other location-specific benefits
  - Establish a west-facing solar credit to account for additional value from these systems
- Require a DOER regulatory proceeding to establish an “adjustable block” compensation program implemented through a RPS carve-out
  - Continue the use of SRECs as a compliance option within the Renewable Portfolio Standard, but utilize an adjustable block program to improve certainty for developers and bring down costs for ratepayers
  - Provide additional consideration to enable viability for community solar projects, low-income projects, municipal projects, and other priority areas

- Protect existing solar investments
  - Projects qualified for SREC I and SREC II continue to receive the SRECs issued pursuant to those policies
  - Grandfather existing solar systems according to the rate policies in place when they were built, with option to participate in the new rate compensation mechanisms
- Treatment of off-site solar
  - The mechanisms should remain unchanged, and the reforms to compensation listed above will fairly and fully compensate all parties
- Related policies to consider in moving Massachusetts to a clean energy future:
  - Increase annual rate of growth for the overall Renewable Portfolio Standard
  - Provide incentives and remove barriers for energy storage and other emerging clean technologies
  - Implement measures to promote grid modernization and resiliency, to create new markets for grid services, and to align utility incentives with expansion of distributed energy resources
  - Streamline interconnection processes for distributed generation as well as permitting, zoning, and inspection policies at local and state level
  - Place caps on fixed customer charges and prohibit minimum bills

### **Explanations of Key Policy Elements**

#### *“Value of Solar” or “Solar Cost/Benefit” Study*

A “Value of Solar” or “Solar Cost/Benefit” study is a comprehensive assessment of the various benefits that distributed solar PV provides to the electric grid, ratepayers and society, as well as the costs to utilities and ratepayers associated with integrating solar PV and its generation. A comprehensive roadmap for this type of study was written by the Interstate Renewable Energy Council and Karl Rabago, titled “A Regulator’s Guidebook: Calculating the Benefits and Costs of Distributed Solar.”<sup>1</sup> It is an avoided cost study that assesses time and location specific benefits and costs over the useful life of a system and establishes a levelized present value for each unit or kWh of solar output. The results can establish the net value of solar generation, and can be used as a benchmark for incentives in addition to market compensation to achieve public policy goals.

A comprehensive study would include a component related to the grid value of solar as well as the value solar provides to society. The essential elements of the grid value include: avoided energy costs; avoided capacity costs; avoided transmission and distribution (T&D) costs; market price suppression effects or “DRIPE” for energy and capacity; reduced T&D line losses; avoided marginal reserve capacity; avoided fuel price hedging costs; avoided environmental and public health compliance costs; and any solar integration costs. If electric ratepayers are asked to fund new natural gas pipeline development, those costs would also be included. The grid value should also include the impact of location on avoided distribution costs, the impact of system orientation (e.g. west-facing), and other measurable values. The societal components are the net social cost of CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub> emissions; economic development values; and other measurable public health, environmental, and social values.

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<sup>1</sup> [http://www.irecusa.org/wp-content/uploads/2013/10/IREC\\_Rabago\\_Regulators-Guidebook-to-Assessing-Benefits-and-Costs-of-DSG.pdf](http://www.irecusa.org/wp-content/uploads/2013/10/IREC_Rabago_Regulators-Guidebook-to-Assessing-Benefits-and-Costs-of-DSG.pdf)

*Compensation through Rate Mechanisms (e.g., Net Metering)*

Currently, net metering credits in Massachusetts are primarily composed of the combined per-kWh charges for three components of retail rates: energy supply from basic service, transmission, and distribution. The new structure for compensation through rates should preserve the mechanism of net metering but the value of certain rate elements can be adjusted to account for any significant discrepancies, either upwards or downwards, between the value of solar generation and specific retail rate components. To begin, there are two areas where the current credit structure reasonably approximates the right values. First, the utility avoids the cost of one kWh of basic service procurement for every kWh of generation from solar. Similarly, the full transmission credit is also an appropriate measure of avoided costs since distributed solar does not use the transmission system in a meaningful way.

There are several areas where studies to date demonstrate that solar generation is being inaccurately compensated in a significant way, although major changes should be phased in. These studies demonstrate that the basic service credit undercounts many benefits that accrue to ratepayers in the long run. In Massachusetts, these values include the additional value for energy and capacity from the generation profile of solar, reduction in line losses, wholesale energy and capacity market price suppression, fuel price risk mitigation, avoided Global Warming Solutions Act compliance costs, and other reasonably foreseeable environmental compliance costs. These long-run values should be incorporated into a new “energy system benefit credit” and can be funded through a non-bypassable charge across the state. It is also evident from many studies that west-facing solar is currently being undercompensated compared to south-facing solar because it provides proportionally more on-peak generation. A new west-facing solar credit should be created to compensate this value appropriately. In select cases where the relevant transmission rate contains significant demand charges, solar generation from virtual net metering projects is undercompensated by the per-kWh rate. In order to address this under-compensation, the demand charge should be converted to an appropriate per-kWh credit.

Some studies demonstrate that the full distribution retail rate is inaccurate for some categories of solar projects. A new set of per-kWh distribution system benefit credits should be established to reflect the net value of solar to the distribution grid. This can be done by category and, for example, rooftop and other on-site projects should provide the most benefits to the distribution system. Other categories should also be considered to reflect any major differences in usage of the distribution grid and the related costs and benefits. All of these credits should reflect long-run costs and benefits to the system, including avoided distribution infrastructure, improved local reliability and reduced vulnerability to failures or disruption, and improved power quality. In select cases where the relevant distribution rate contains significant demand charges or fixed customer charges that recover infrastructure costs, solar generation from virtual net metering projects is undercompensated by the per-kWh rate. In order to address this under-compensation, these charges should be converted to an appropriate per-kWh credit. Lastly, these credits would be based on averages, but an additional distribution system locational credit should be created to incentivize projects in areas that are particularly constrained.

*Adjustable Block Program implemented through RPS Carve-Out*

Additional compensation for solar beyond rate mechanisms should be provided on the basis of societal benefits, the need to drive innovation, and any additional support for specific market segments for public policy reasons. For renewable electricity in general, this is done through the Renewable Portfolio Standard (RPS), a set of requirements on the electric utilities and competitive energy suppliers. Since 2010, Massachusetts has provided solar-specific compensation outside of rates through programs known as “SREC” and “SRECII”. These programs are both carve-outs to the existing RPS, allowing solar generators to create and sell a solar renewable energy certificate (SREC) that is used for compliance by the energy suppliers. The prices for SRECs are market-based and subject to a relatively high price cap.

The next generation of these programs can be improved in several ways by implementing an “adjustable block” program. This type of program offers a set price for a targeted amount of solar capacity. Once that amount of capacity has qualified or a finite period of time has expired, a new block is available at a new price. This can be implemented within a new carve-out to the RPS, as an open access long-term contracting mechanism. Projects could still be allowed to choose a market-based SREC, outside of the adjustable block program. However, the carve-out can be designed to be completely filled by acquisitions from the adjustable block program.

This program must be structured to provide reasonable certainty to solar developers, and any administrative adjustments allowed to the blocks of the program should be formula-based. The program should also ensure that we make proper progress towards environmental requirements and solar goals. Separately, the program should make reasonable distinctions by market segment to ensure a diverse solar industry and sufficiently support segments based on public policy needs, such as community solar, low-income solar, and municipal solar.