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# Developing an Effective State Clean Energy Program: Renewable Energy Incentives

The American Recovery and Reinvestment Act provides an unprecedented level of federal funding (\$3.1 billion) to state energy programs to support investments in energy efficiency and renewable energy technologies. Clean Energy States Alliance (CESA), a nonprofit coalition representing state clean energy programs across the country, has prepared this series of briefs to assist state energy offices in designing programs to make effective use of these federal and other available funds.

## Designing an Effective State Clean Rebate Program for Small Renewable Energy Projects

This briefing paper summarizes innovative approaches and practices that have worked effectively for state clean energy programs in providing **small renewable project incentives**.

### Incentive Program Approach

"Rebates" are the most popular financing tool that states use to support distributed renewable energy projects. Rebates are lump-sum payments that cover a portion of a project's capital cost and are paid to the project owner upon project completion. The premise of a rebate program is to provide a temporary incentive to encourage investment until such time as prices decline to the point of becoming cost competitive in the marketplace. An effective rebate program is designed to lower the high upfront costs of purchasing and installing renewable energy systems and, in the process, build market demand, awareness of renewable energy technologies and an in-state dealer/installer network. In addition, particularly during a period of limited credit availability, a rebate lowers the amount of project costs that need to be financed.

### Eligibility Criteria

State clean energy programs offer rebates for widely-available renewable energy technologies targeted at residential and small commercial installations—solar photovoltaics, solar hot water systems, geothermal systems and small wind

turbines. Rebates have specific eligibility criteria—for example, programs can limit rebates to systems above or below a certain size, particular customer types (e.g., residential, small commercial), systems that meet specific performance standards, or systems that are installed by firms which have met certification requirements such as those offered by the North American Board of Certified Energy Practitioners (NABCEP).

### Rebate Levels

Setting appropriate rebate levels is part art and part science. Among the factors that need to be considered are the current market price of a technology, "natural" demand for a particular type of system in the absence of rebates, other available state and federal incentives, the market price for electricity or natural gas, anticipated energy generated by the system, the desired support for a particular technology by the state program and, of course, available funds.

Most clean energy programs provide rebates based on a fixed dollar amount per watt of installed capacity. Rebates can be capped based on a maximum dollar amount per project and/or maximum project size. The table below lists current rebate levels for residential solar photovoltaic systems offered by different state clean energy funds:

State	Rebate Level (\$/watt)	Maximum System Rebate
Arizona (AZ Public Service)	\$3.00	50% of project cost up to \$75,000
California	\$1.55-\$2.20 (declines as more systems are installed). Alternative performance-based incentive of \$0.22 to \$0.34/kWh	None
Maryland	\$2.50	\$10,000
New Jersey	\$1.75	\$17,500 (10 kW)
New York	\$3.00 (1st 4kW), then \$2.00	\$20,000 (8 kW)
Oregon	\$2.00 - \$2.25 based on utility	\$20,000
Wisconsin	\$1.5 per estimated kWh of production per year	25% of system cost up to \$35,000

Table 1. Rebate levels for residential solar PV systems

### Best Practice Recommendation

Whatever funds are made available for rebates, states should commit and release funding in a way that ensures long-term continuity of the program—for a period of 5 to 10 years. This is critical to allow local markets to develop and stabilize, without boom and bust cycles of funding. States also should consider establishing a gradually declining level of rebates, zeroing out after 10 years. This approach allows the state to set the maximum cost of the program, and if the initial rebate level is too high, the payment levels are self-correcting.

### Range of Incentive-Based Approaches

Historically, state incentive programs have provided rebates based on the rated capacity of a renewable energy system, disbursed prior to or immediately following installation. While simple to administer, this incentive structure does not directly create an incentive for energy production and system performance. To address this shortcoming, many states are adopting alternative incentive structures which base the incentive payment either on actual or expected performance.

The primary incentive-based approaches include:

- Performance-based incentives in which the incentive payment is calculated based on the measured output of the system over an operational period of usually one year or more;
- Expected performance-based buydowns, in which the incentive is provided up-front, but is adjusted to account for factors that are likely to affect performance (e.g., shading and orientation for solar installations);
- Incentive hold-backs, in which a portion of the upfront

rebate is held back and disbursed only after operational data have been submitted demonstrating acceptable performance.

### Strengths of Rebate Programs

- **Easy to Administer:** Once rebate levels and program budgets are set, rebate processing is relatively simple. Applicants typically need to fill out a form confirming the project's eligibility, providing proof of purchase/installation, and demonstrating that they have met any other program conditions (for example, the use of a certified installer).
- **Adjustable:** Rebates can be adjusted from one program cycle to the next based on market conditions and available funding. They also can be tailored to different types of applications (e.g., commercial, municipal) or modified to encourage projects in certain locations.
- **Provides Upfront Capital:** Rebates provide much-needed capital to projects, reducing the need to finance and accelerating a project's return on investment.

### Need for Complementary Policies and Programs

Successful rebate programs depend upon the existence of other policies that reduce barriers to system installation, such as uniform and streamlined interconnection procedures, net metering and supportive local zoning and permitting guidelines.

### Rebate Interaction with Federal Tax Incentives

In response to the increased value of the federal Investment Tax Credit (ITC), several state solar programs recently have reduced the level of their rebates since the combination of the two incentives could provide project support in excess of 50% of installed system cost. Reducing rebate levels may be appropriate in order to stretch available rebate dollars. However, rebates should not be reduced by the full value of the ITC; rather, the rebates and the ITC in combination can provide a powerful incentive to accelerate solar and wind installations.

### References

Almost every state public benefit fund has a rebate program for customer-sited renewable energy. Details about and links to these programs can be found at [www.dsireusa.org](http://www.dsireusa.org).

**For more information or assistance in developing an effective state clean energy program, contact Clean Energy States Alliance at [CESA@cleanegroup.org](mailto:CESA@cleanegroup.org) or call 802-223-2554**