A Financial Portrait of Solar in WA State

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Quick overview of the WA renewable energy incentive

• Credit against public utility tax
• Production-based incentive
  • $0.15/kWh for non-WA equipment
  • $0.39/kWh extra for systems using made-in-WA modules and inverters
• Incentive runs to June 30, 2020
• Limit of $5,000/year/participant
• Each utility capped annually at 0.5% of taxable revenue, or $100,000 if greater
• Community solar projects paid at double rate
• Ownership-based restrictions on eligibility
WA Incentive Program - Solar Installations by Year

Note: 2015 is projected. Actual through 9/30/2015 is 12.4 MW (preliminary)
Source: WSU Energy Program
WA market is mostly residential
Market is also mostly made-in-WA equipment
Projected Cost of Existing Solar Incentive Program

Projected Taxpayer Cost over Final 5 Years: $130 million

<table>
<thead>
<tr>
<th>Year</th>
<th>MW - Actual</th>
<th>MW - Projected</th>
<th>Cost - Actual</th>
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What are the “Costs” Being “Recovered” in the Existing “Cost Recovery” Program
Data on installed prices in Washington

Median Installed Price
(per Watt)

Statistical estimate of price of a 10 kW MIW system:

2\textsuperscript{nd} Half 2014: $42,180
3\textsuperscript{rd} Quarter 2015: $38,858

Not enough info to estimate prices for non-WA systems.

Source: Puget Sound Cooperative Credit Union.
Excludes systems using non-Washington equipment.
Installed Price of 2014 Residential PV Systems by State

Source (except WA): Lawrence Berkeley National Laboratory, *Tracking the Sun 2015*, Fig. 19

WA: Loan data reported by PSCCU (MIW systems only)
How WA incentives compare to other states

National Range: Lawrence Berkeley National Laboratory, *Tracking the Sun report 2015*, Fig. 11
Note: WA SB6170 in 2009 extended term of incentive from 2015 to 2020.
WA does not include sales tax exemption.
Snapshot of WA solar economics in 2015

Assumed Generation: Western WA 1,000 kWh/kW, Eastern WA 1,300 kWh/kW

- State MIW incentive ($0.39/kWh for 5 years)
- State solar incentive ($0.15/kWh for 5 years)
- Electricity value ($0.10/kWh for 10 years)
- Federal tax credit (30%)
- Installed Cost (7.6 kW @ $4.19/W)
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1.3 MW of new utility-owned community solar

<table>
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<tr>
<th>Utility</th>
<th>Participant Cost per Watt</th>
<th>Projected State Incentives per Watt</th>
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Considerations for the Next Washington State Solar Program
2015 legislation – issues list (partial)

- Manufacturing incentives – modules
- Manufacturing incentives – inverters
- Technology incentives – inverters
- Technology incentives – storage
- Technology incentives – distribution system
- Technology incentives – integrated solar
- System ownership limitations
- System size constraints (non-community)
- Incentive levels – residential
- Incentive levels – small commercial
- Incentive levels – large commercial
- Incentive levels – third-party owned
- Incentive levels – utility owned non-community
- Incentive levels – Non-utility community systems
- Materials sourcing
- Incentive levels – Utility-owned community systems
- Community solar ownership structures
- Incentive payment period
- Mechanisms to change incentive rates
- Regulation of third-party system owners ("solar energy service companies")
- Consumer protection provisions
- Program limits – dollar amounts
- Program limits – installed capacity
- Program limits – per-utility caps
- Net energy metering
- Solar sales tax exemption or partial refund
- Program administrative agency
- Effect on existing incentive program
- Programs for low-income participants
NREL: Best practices for designing solar incentives (a partial list)

- Use multiple approaches and data sources to evaluate appropriate incentive levels
- Consider different incentive structures to encourage various market segments
- Modify incentive-levels to respond to changing market conditions
- Institute consumer protection measures to encourage reputable business practices that help ensure the long-term viability of the solar industry

National Renewable Energy Laboratory, Distributed Solar Incentive Programs: Recent Experience and Best Practices for Design and Implementation (2012)
Concepts for the next solar program

• More emphasis on market development
  • Solar on new homes
  • Solar on commercial buildings

• More coordination with utility programs
  • Panel orientation, inverter selection and operation
  • Integration with energy efficiency programs
  • Use in green power programs
  • Renewable portfolio standard (I-937)
  • On-bill financing and leasing
  • EPA Clean Power Plan
More concepts for the next solar program

- More program oversight and transparency, especially about costs
- Specific targets and limits
- Lower incentive rates
- Fewer constraints on ownership and financing
- Better use of federal tax benefits, especially in community solar
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