Creating A Cleaner Energy Future For the Commonwealth

Massachusetts Department of Energy Resources

Massachusetts Solar Market

Post-400 MW Solar Program Policy Design

Stakeholder Meeting

Renewable Energy Division

March 22, 2013

Scope and Agenda for Today's Discussion

- Existing RPS Solar Carve-Out – Observations
- DOER's Policy Analysis
  - Objectives
  - Basic Policy Options
  - Current Design Considerations by DOER
  - Key Policy Issues
- Discussion on DOER's Analysis and Directions
- Call for Other Policy Issues from Stakeholders

RPS Solar Carve-Out Rulemaking

- This meeting is <u>not</u> a forum for comments on the current rulemaking pertaining to revisions to the existing 400 MW RPS Solar Carve-Out.
- Public Hearing is scheduled for March 22nd , 1pm-3pm.
- Public Comments due March 25th.

To the extent that the post-400 MW policy design builds upon and requires a transition between programs, discussion of the current regulatory process may be appropriate.

Existing RPS Solar Carve-Out Observations (page 1 of 5)

General Market Observations

- The Solar Carve-Out was successful in aggressively growing solar installations and businesses in MA.
- Project development has been reasonably well distributed across system size, including a robust residential market.
- Projects owners and financers are not always fully knowledgeable of the nuances of the program design, and solar installers are not consistent in informing owners of the SREC market risks and mechanics.

Existing RPS Solar Carve-Out Observations (page 2 of 5)

Market Price Observations

- The SREC shortage in 2010 and 2011 resulted in SREC prices near the ACP Rate.
- The SREC oversupply in 2012 resulted in buyer market power in early trading quarters, and SREC prices below the Auction price.
- Oversupplied SREC market in 2012 did not see SREC prices fall to low levels experienced in other states without "price support mechanism".
- Solar Clearinghouse Auction mechanism has supported SREC prices from collapsing.

EXISTING RPS SOLAR CARVE-OUT OBSERVATIONS (page 3 of 5)

Investor and Ratepayer Impact Observations

- Undersupplied market leads to SREC prices near the ACP, and cost to ratepayers well above PV economic need.
- High ACP rates justified to compensate PV investors' risk exposure to SREC prices below economic need during oversupply.
- Therefore, a strong and sufficient SREC floor price or long term contract, can reduce price risk exposure to investors and the need for high ACP rates – containing ratepayer costs within a narrower band around economic need.

Existing RPS Solar Carve-Out Observations (page 4 of 5)

Market Diversity and Economic Need Observations

- Existing program does not accommodate variations of economic need between system size, application, site/interconnection conditions, and ownership model.
- Existing program does not accommodate changes in economic need of systems over time.
- DOER's selected the current 400 MW cap in 2009 with the understanding that policy adjustments would be prudent after this threshold, given the rapidly changing market and economic conditions.

EXISTING RPS SOLAR CARVE-OUT OBSERVATIONS (page 5 of 5)

Social Policy Observations

- Solar Carve-Out has raised land-use issues in some communities – particularly with regard to use of agricultural lands, open space, and forestland.
- Third party ownership options in the residential market has substantially increased its market share from about 1/3rd to 2/3rd. This approach has significantly expanded the ability of homeowners to adopt solar installations. But has also raised concerns by some about effective distribution of policy benefits.

Policy Development – Objectives (page 1)

- Provide economic support and market conditions to maintain and expand PV installations in MA.
  - If possible, establish a program now that will drive the market towards and until the technology reaches cost parity with RPS Class I.
- Provide clear policy mechanisms that control ratepayers costs and exposures.
  - Heading well beyond 400 MW is only practical at costs to ratepayers (per MW) less than today.
  - Ratepayer costs should better reflect marginal cost of solar installations over time.

Policy Development – Objectives (page 2)

- Maintain robust growth across installation sectors – residential, small commercial, utility-scale, roof mounted, ground mounted, etc.
- Maintain competitive market of diverse PV developers , without undue burdens of entry.
- Address financing barriers limiting direct ownership, without compromising third-party ownership model.

Two Primary Policy Options

- Maintain and expand, with revisions, the RPS Solar Carve-Out framework.
- Establish new Central Procurement framework.
  - Long Term Contracts through frequent, standardized, competitive solicitations.
    - Supported by the utilities with rate recovery.
    - Supported by another agent with funds generated from an System Benefit Charge.
  - Feed-In Tariff with set pricing and automatic eligibility, and costs recovered across ratepayers.

Policy Options
Procedural Implications

- RPS Solar Carve-Out
  - Most likely could be implemented through a rulemaking alone.

- Central Procurement
  - Would require enabling legislation, followed by rulemakings (possibly for both DOER and DPU)

Policy Options Pros and Cons

Policy Approach	Pros	Cons
Extension/Modification of Existing RPS Solar Carve-Out	Industry is familiar with and generally supportive of program design. Extended program could involve additional features to reduce subsidy levels and to accommodate subsidy differentiation between solar sectors.	May not substantively address SREC price risk, which increases solar costs. Complex financing limits investor entry.
Central Procurement	May provide a simpler and more predictable solar market. Competitive solicitations and LTKs can substantially reduce financial risk and solar costs. Can hold separate solicitations to accommodate subsidy differentiation between solar sectors.	Competitive solicitations may impair business planning and concentrate solar market to fewer businesses.

Extending/Revising the RPS Solar Carve-Out

One SREC Market or Two?

- Does a new program require a new SREC market (SREC-II) or can the current 400 MW cap be raised and allow the current SREC market to expand into the larger cap?
  - New SREC-II market requires additional compliance burdens.
  - Maintaining one SREC market may breach expectations of existing 400 MW generators.
- Would maintaining one market be more acceptable to existing generators if Auction mechanism created a "real" floor?

Auction Mechanism – Firming the Floor

- Representative Calter – Bill filed (H. 2915)
- Requires that Distribution Utilities purchase any SRECs that remain un-cleared in final round of Clearinghouse Auction.
  - Purchase price set at the fixed Auction price (or small discount at DOER's discretion).
- What is stakeholder level of interest in this proposal?
  - Should language be added regarding the utilities' disposition of SRECs purchased in this manner?
- If Auction price is backstopped in this manner, project financial risk is significantly diminished.
- May call for substantial reduction in ACP levels to reduce ratepayer exposure to high compliance costs.

Regulating Incentive Value as PV Costs Decline

- With fixed-price Solar Clearinghouse Auction framework, SREC price support level remains constant, unless multiple separate SREC markets (and compliance obligations) are created.
- DOER seeks mechanism to reduce incentive value as the market expands and installation costs decline.
- Introduce **Carve-Out Generation – *SREC Factor***

Carve-Out Generation – SREC Factor

- For each MWh of generation, a Solar Carve-Out Unit generates the following attributes:
  - SRECs = 1 MWh x SREC Factor
  - RPS Class I RECs = 1 MWh x (1 - SREC Factor)
- SREC Factor starts at value towards 1
- SREC Factor declines gradually based on regulation formula dependent on cumulative MW qualified, or time.
- Declines to near 0 prior to end of new Carve-Out program.
- Decline of Solar Factor is very gradual (non-step function) to reduce financial uncertainty and avoid market bumps.

Maintaining Market Sector Diversity

- Current program does not discriminate incentive value by market sector.
- To date, additional incentive necessary to maintain robust residential/small system market has been afforded by MassCEC Commonwealth Solar II rebates.
- SREC Factor Adjustment would enable incentive differentiation, e.g. for Small Systems:
  - Adjusted SREC Factor = SREC Factor x Small System Adjustment
  - where Small System Adjustment > 1 but adjusted factor not to exceed 1.
    - Additive Adjustment Factor might be more appropriate.

Maintaining Market Sector Diversity

- Are SREC Factor Adjustments justified for other market sectors?
  - Installations on large roofs, parking lots, closed landfills, contaminated sites.
  - Site/Local Owned projects.
  - Adjustments for Government/Non-Profit (non taxable) Owned projects.
  - Adjustments for electric grid benefits and emergency power and microgrids.
- Sounds complicated (?), but accounting is “just” math.

Other Considerations for Carve-Out Design Revisions

- Opt-In Term Adjustment
  - Should Opt-In Term be fixed, and not subject to formulaic adjustment?
  - Intent of adjustment is to throttle development up or down based on oversupply or undersupply.
  - Does it have this effect, and is it worth the market dis-continuity?
- Should Carve-Out projects be “term limited”, that is be eligible for SRECs for a fixed term, then moved over to Class I status?
  - Substantial ratepayer savings over long term, and SREC revenue may be over-subsidy to projects.
  - Complicates SREC accounting, but it’s “just” math

Creating a New Policy Framework

Central Procurement

Central Procurement – Options

- Long Term Contracts (for SRECs) solicited by distribution utilities.
  - Competitive, standardized contracts, frequent offerings
  - Cost recovery from across all ratepayers.
- Central Procurement of LTK for SRECs by other agent (e.g. DOER, MassCEC).
  - Cost recovery, or capital formation, through System Benefit Charge on all ratepayers.
- Feed-in Tariff requiring distribution utilities to purchase solar generation at regulated price.
- Hybrid Approach: LTK for large systems, FIT for small systems.

Central Procurement Market

- Central Procurement (not including FIT) may be lumpier – periodic solicitations, winners/losers.
- Winning bidders may be dominated by more limited number of developers (for better or for worse).
- As discussed for Solar Carve-Out framework, Central Procurement offers similar mechanisms to support market sector diversity.
  - Separate competitive LTK solicitations, or FIT prices, for market sectors.
  - Evaluation criteria which reflects market differences.

Ratepayer Cost and Market Sector Diversity

- Competitive solicitations maintains incentive value at near marginal need of solar generation. Price caps can protect ratepayers.
- LTK reduce financial risks to developers and ratepayers.
- As discussed for Solar Carve-Out framework, Central Procurement offers similar mechanisms to support market sector diversity.
  - Separate competitive LTK solicitations for market sectors.
  - Evaluation criteria which reflects market differences.

Is there a Compelling Reason to Move towards Central Procurement?

- Policy development lift is much greater than RPS Carve-Out model (need enabling legislation, DPU procedures, new regulatory developments, preparation of solicitation/contract document)
- Price certainty and risk mitigation are key.
  - Does pending solar legislation to strengthen Auction price support sufficiently address this issue under RPS framework?

Overarching Policy Issues

The Next Cap

- Not too Low
  - The Administration is supportive of expanding solar program and maintaining its status of a premier solar market in the U.S.
  - Solar can become an important in-state contributor to the RPS Class I obligations and GHG reduction commitments.
  - Solar deployment is continuing to grow, so next 400 MW will take significantly less time to develop.
  - We do not want to be back in three years re-designing program again.
- Not too High
  - Cost to ratepayers is high unless incentive cost in controlled.
  - If cost protections and reduction mechanisms can be built into the program, a higher Cap is likely to be supported.
  - Grid (or Class I) parity may be met soon if global cost reductions are successful.

The Next Cap

- Straw Caps that we have heard recommended by stakeholder:
  - 1000 MW
  - 1600 MW
  - 2000 MW
- Discussion on what criteria DOER should evaluate and justify this decision.

- *Nomenclature Note* – Is Next Cap the total cap including the current 400 MW, or the incremental Cap above 400 MW? DOER and others should make this clear in correspondences.

Other Policy Issues

- Should DOER policy intervene to protect agricultural and forest lands? What forms might this take? Any other land protection issues?

- Might DOER program design include option for "Forward Minting" of SRECs for small/residential systems to alleviate financing barriers? (E.g. minting 5 years of estimated SREC generation at project start-up for "up-front" revenue stream.)

Post-400 MW Policy Development Process

- DOER will take written comments on the information presented in this Stakeholder Meeting.
  - This Stakeholder Meeting presentation will be posted on the DOER website.
  - Comments due by April 8, 2013.
  - Submit comments to doer.srec@state.ma.us
    - Include Subject Line "Comments – Post 400 MW Policy"
- DOER will provide an outline of proposed policy design for comment in late April or May 2013.