

Understanding Market Opportunities to Reduce Energy Spending

A Better City Conversations Webinar Series



CFR – A Strategic Partner for ABC Members

- > **10-year track record** in the C&I renewable energy (RE) space
- > **+16M MWh/year under contract** for strategy and procurement mandates
- > Served **+50 global businesses & institutions** (Including MIT, BMC, Post Office Square)
- > Enable large energy users' transition to **cost-effective, low-carbon solutions** with deep expertise in RE projects onsite & offsite, across all contract types
- > **Our services:**
 - RE & water strategy development, stakeholder education & engagement
 - Procurement, analytics, financial modeling, risk management, due diligence, negotiation
 - Performance monitoring, energy portfolio optimization, wholesale/retail procurement

Selected Clients (Aggregation = boxes)



Today's Speakers



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Business Development



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Senior Engagement Manager
Client Service & Innovation



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Today's Discussion

- > **Solar Massachusetts Renewable Target (MA SMART) community solar**
- > Massachusetts Clean Peak Energy Standard (CPS) with onsite battery storage
- > Understanding and eliminating inefficiencies in retail energy supply (electricity and natural gas)
- > Next Steps and Questions

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SMART Community Solar – Overview

The Solar Massachusetts Renewable Target (SMART) is a legislatively-enabled program to drive the development of small-scale community solar projects, providing bill credits to utility customers who subscribe to their output.



Program Details

- > Opened in 2018 for “large” projects
 - <5MW / ~6.5M kWh/yr.
- > Projects must be sited within customer’s utility territory
- > Customer cannot buy >50% of a project’s output; can buy from multiple projects
- > 20-year term required
- > Incentive payment based on utility’s basic service rate
 - Steps down with each tranche of program capacity (3,200 MW total)
 - Various multipliers (e.g., low-income shared solar, storage)



Benefits to Subscribers

- > Enables the development of local clean energy
 - Public health, climate change benefits close to home
 - Renewable Energy Certificates (RECs) kept by utility
- > Can subscribe to any off-take quantity
- > Additional incentives for projects that share output with low income residents
- > Typically built and operated by 3rd-party developer
- > Nothing located onsite, no upfront investment



Financial Incentives

- > Receive monthly bill credits
 - Capped at 100% of monthly utility cost
- > Project developer shares incentive with customer
 - Typically 10% of basic service rate; developer retains 90%
 - Fluctuates with utility rate, but no risk of added costs
- > Open to customers with Competitive Retail Supply
- > Credits transferable to other sites/accounts or a new subscriber if needed

SMART – Key Considerations for Buyers

Program Considerations

- > Standard contract makes participation relatively simple
 - Requires 20-year commitment; can transfer bill credits to other sites, account numbers
- > Only customers with Eversource, National Grid, or Unitil accounts are eligible
- > Utility retains RECs, so buyers unable to make public claims to using/buying renewable energy
- > While significant capacity remains (COVID-19 legislation doubled program cap to 3,200MW), there is a looming bottleneck as developers sell out their current pipeline and look for new sites to develop
 - Eversource East especially constrained

Buyer Considerations

- > Buyers with Competitive Retail Supply should evaluate current billing methodology
 - Complete billing: SMART credits applied to total monthly bill
 - Pass through billing: credits applied only to utility delivery costs (i.e., standalone utility bill)
- > Minimum annual load of 5M-10M kWh required to attract developer interest
- > Most developers require investment-grade buyers or audited financials
 - Some are open to non-IG buyers, but will reduce bill credit rate

SMART Solar Block Status Update						
Last Update: 11/2/2020 8:45 AM						
LARGE PROJECTS (>25 kW AC)	Accepting Applications for Block ¹ :	Current Block/Size (MW) ²	Total Allocated Capacity (MW) ³	Total Pending Capacity (MW) ⁴	Total Remaining Capacity (MW) ⁵	Waiting List (MW) ⁶
Electric Distribution Company (EDC)						
Eversource MA East	5 of 8	75.898	281.914	27.379	276.396	0.000
Eversource MA West	1-8 Full	N/A	98.055	65.319	0.000	0.000
National Grid (Massachusetts Electric)	10 of 16	71.984	558.014	106.179	490.929	0.000
National Grid (Nantucket)	3 of 4	2.575	1.000	3.713	5.271	0.000
Unitil	7 of 8	3.257	12.444	9.522	3.693	0.000
Total			951.427	212.112	776.290	0.000
Small						
Eversource MA East+West	TBD	TBD	TBD	TBD	TBD	TBD
Large						
Eversource MA East+West	9 of 16	85.355	379.969	92.698	210.174	0.000

Today's Discussion

- > Solar Massachusetts Renewable Target (MA SMART) community solar
- > **Massachusetts Clean Peak Energy Standard (CPS) with onsite battery storage**
- > Understanding and eliminating inefficiencies in retail energy supply (electricity and natural gas)
- > Next Steps and Questions

Clean Peak Standard – Overview

The Clean Peak Standard (CPS) is a new, first of its kind legislatively-enabled program intended to meet periods of peak electricity demand with clean generation and battery storage rather than fossil fuel generation.



Program Details

- > Program opened in August
- > Provides Clean Peak Energy Certificates (CPECs) to resources that reduce load or supply clean generation peak demand periods
 - Each MWh generates 1 CPEC
 - Multipliers based on time of year, performance during monthly peak hour increase CPEC quantity
- > CPECs are sold to utilities and retail electric suppliers under long-term contracts
- > 3rd-party ownership allowed
 - Most storage projects will be onsite to maximize revenue

Benefits to Subscribers

- > Program intended to help further reduce local emissions from electricity generation
- > Standalone battery storage positioned to benefit the most from CPS
 - Onsite storage can provide backup power, increased resilience
 - Can be paired with onsite solar
- > Use cases can evolve over time based on market signals
- > 3rd-party ownership structure enables low-risk revenue sharing under ESPC model

Financial Incentives

- > Receive monthly revenue share with project owner
 - Detailed analysis required to calculate savings potential
- > Flexibility of storage enables “revenue stacking”
 - CPEC revenue
 - Demand response revenue
 - Peak demand charge reduction
 - Wholesale energy arbitrage
- > Enables reduced electricity spend with no capital expense or O&M cost

CPS – Key Considerations for Buyers

Program Considerations

- > Only customers of Eversource, National Grid, or Unitil are eligible
- > Because the program is so new, no contracts have been approved to serve as a base case for other participants
 - Some uncertainty around CPEC pricing, which will be driven by supply relative to compliance requirements
 - 1.5% of annual electricity sales in 2020 must be met with CPECs; increases 1.5%/yr. until reaching 46.5% in 2050
- > No unique sustainability claim can be made, beyond announcing participation in CPS

Buyer Considerations

- > While multiple revenue streams are available, value to participants will require in-depth load analysis and working with storage providers to assess
- > Minimum monthly peak demand of 700-800 kW required due to current cost of battery storage relative to revenue streams
 - 2MW+ monthly demand is safest bet to ensure feasibility
- > Hosting batteries onsite necessitates work with insurance providers
 - A 2MW system is roughly the size of a 50-ft. shipping container; outdoors or parking lots are good locations for siting to minimize insurance risk
 - May be some room to include any added costs in contract with provider
- > Most developers require investment-grade buyers or audited financials
 - Some are open to non-IG buyers, but will reduce revenue share percentage to compensate

	CPS %	Alternative Compliance Payment (CPEC price cap)
2020	1.5%	\$45
2021	3.0%	\$45
2022	4.5%	\$45
2023	6.0%	\$45
2024	7.5%	\$45
2025	9.0%	\$43.46
2026	10.5%	\$41.92
2027	12.0%	\$40.38
2028	13.5%	\$38.84
2029	15.0%	\$37.30
2030	16.5%	\$35.76
2031	18.0%	\$34.22
2032	19.5%	\$32.68
2033	21.0%	\$31.14
2034	22.5%	\$29.60
2035	24.0%	\$28.06
2036	25.5%	\$26.52
2037	27.0%	\$24.98
2038	28.5%	\$23.44
2039	30.0%	\$21.90
2040	31.5%	\$20.36
2041	33.0%	\$18.82
2042	34.5%	\$17.28
2043	36.0%	\$15.74
2044	37.5%	\$14.20
2045	39.0%	\$12.66
2046	40.5%	\$11.12
2047	42.0%	\$9.58
2048	43.5%	\$8.04
2049	45.0%	\$6.50
2050	46.5%	\$4.96

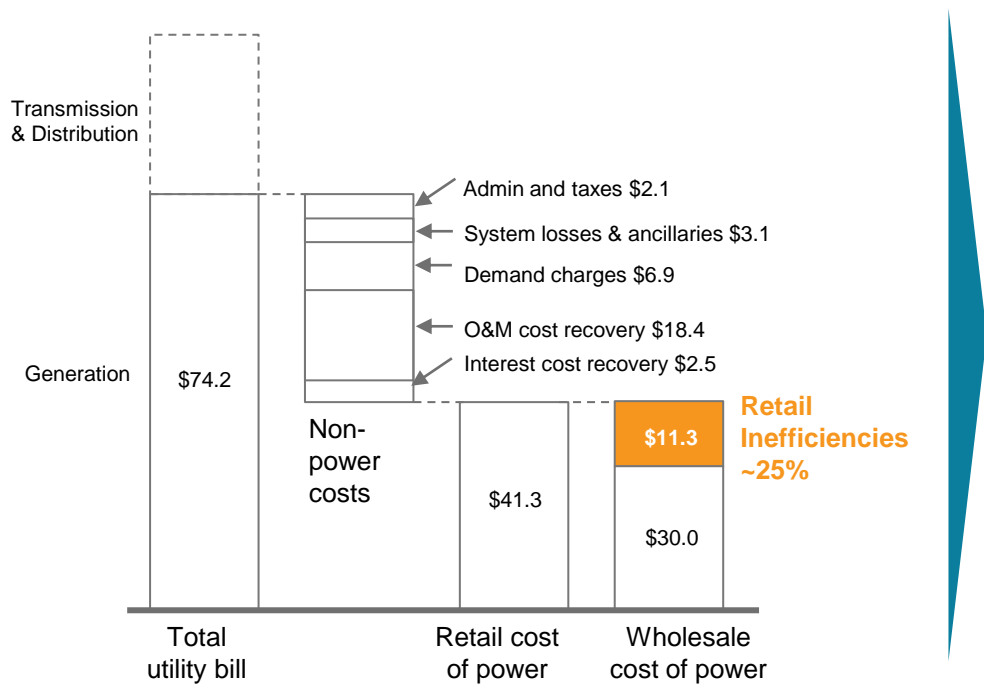
Today's Discussion

- > Meet CFR
- > Solar Massachusetts Renewable Target (MA SMART) community solar
- > Massachusetts Clean Peak Energy Standard (CPS) with onsite battery storage
- > **Understanding and eliminating inefficiencies in retail energy supply (electricity and natural gas)**
- > Next Steps and Questions

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Four Inefficiencies That Underlie Retail Supply Opportunities

Commodity Cost: Estimate of Retail Inefficiencies (\$/MWh)*



Inefficiencies in Retail Supply

- Broker/Supplier markups** on retail supply
- Poor integration** of new solutions
- Product structure mismatches** with goals
- Failure to capture portfolio value**

Understanding the sources of retail inefficiencies & overspending helps identify opportunities to capture savings

* Analysis based on large commercial general service customer. Estimates built from published rate class and does not include distribution charges.
 ** O&M and interest cost recovery estimated from utility parent company financial statements. System losses and ancillary charges estimated to be 7% of cost. Demand charge estimated using PLC and RPM pricing for utility territory. Other cost elements taken directly from published utility prices for rate class.

Source: Published utility cost information for mid-Atlantic utility within PJM; CFR analysis

Understanding Potential Retail Supply Inefficiencies



Broker/Supplier markups on retail supply

- > **Problem:** Lack of transparency when it comes to broker and supplier fees – often fees and margins are not communicated or understood completely and can increase over time via renewals
- > **Impact:** Margins embedded in several parts of the bill are difficult to isolate and can result in overpaying
- > **Action:** Align fees with value created



Poor integration of new solutions

- > **Problem:** Suppliers and providers are bringing **more creative options** to market – competitive options can exist even in historically regulated markets
- > **Impact:** Regulations and rules are evolving rapidly across all markets, opening up opportunities to competitively source new, cost effective options
- > **Action:** Find opportunities to capture new solutions and coordinate efforts across procurement to integrate effectively



Product structure mismatches with goals

- > **Problem:** Costs and risks can vary depending on product structure and term
- > **Impact:** Tradeoffs between limiting volatility and reducing costs may not reflect organization's goals
- > **Action:** Outcome should be tied to organization's goals. Establish an ongoing process to understand and measure impacts, pivoting quickly to react to changes in demand and market



Failure to capture portfolio value

- > **Problem:** Procurements are often **handled in isolation** as contracts expire, irrespective of other commodity purchases or product structures
- > **Impact:** This can result in missing out on scale and more favorable commercial terms and language
- > **Action:** Potential hedges exist across energy procurement – or risks can be unintentionally magnified. Find hedge value and synergies by synchronizing activities across the portfolio

Next Steps & Questions

- > Please reach out to ABC and CFR if interested in learning more the programs discussed today (SMART, CPS, retail procurement)
- > Any questions?

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