

BE+ Decarbonize Existing Buildings Alliance
December Roundtable: Carbon Offsets + RECs
12.6.2023

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Q&A

Related to Carbon Offsets

Q1 How do the credits actually bring carbon use down? If one entity is saving, but selling credits to overspenders, is this just a zero sum?

A: *The generation of energy and the obligation both grow over time. RECs have a price cap where if the market price goes higher, the overage goes to the state for investment in future generation.*

For BERDO, SMART RECs are allowed to be double counted for both utility and for BERDO; intended to not disincentivize solar in the city; solar is removed from the emissions from the building's energy usage for BERDO reporting

Related to APS Credits

Q2 Would Eversource be the primary buyer of credits in MA or is there another buyer to consider?

A: All Retail Electricity Suppliers in Massachusetts are obligated parties in the Renewable Energy Portfolio Standard and the Alternative Energy Portfolio Standard. In 2022, there were 62 Retail Electricity Suppliers in Massachusetts, which included 3 state-regulated investor-owned utilities. Those 62 Retail Electricity Suppliers are the buyers of credits in MA. Eversource, National Grid, and Constellation would be considered three of the largest buyers.

Q3 What kind of prices do we see in the market for credits? Is there a price associated with getting into the market in the first place with a broker or other agent?

A: RPS class I price cap is \$40; roughly \$37/mW; APS has a price cap of \$26.46; currently trading around \$6.00/mW. A few programs set the price cap and it will remain in place, other programs (like the APS) increase the price cap each year on pace with inflation (Northeast Consumer Price Index). There is no cost to register and apply to APS

or RPS programs but brokers take a fee for their services when the credits are monetized.

Q4 How long can eligible technologies generate credits?

A: Estimated 10 yr life; can generate until end of life; biodiesel is a 1-time; geothermal is life of system for med-large; single homes is a one-time benefit.

Q5 Would a school likely be large enough for metering if it installs a ground source heat pump or would it receive all of the credits upfront?

A: Yes, the system would likely be large enough to meter and earn credits. Receiving credits up-front is primarily for small scale, i.e. homes + apartments. Larger projects would receive a quarterly minting of credits. In the APS, GSHP are classified as small (10-years of estimated credits are minted at the time of application approval), intermediate (credits generated quarterly based on metering and output)., and large (credits generated quarterly based on metering and output). To classify as a small system, the GSHP system must have a capacity less than or equal to 134,000 Btu per hour. Intermediate GSHP systems have an output capacity between 134,000 and 1,000,000 Btu per hour. Large systems have an output capacity greater than or equal to 1,000,000 Btu per hour.

Q6 Can you go back to capture APS credits if you have a larger building that wasn't metering until now? (I'm guessing not!)

A: Can apply for any system installed after 2016. However, the site would need to be metered, reporting + verifying quarterly to earn credits so most likely it would generate credits starting now. If the larger building was a multi-family residential building, each individual unit would be able to apply for any ASHP installation dating back to 2016 and receive 10-years of credits at the time of installation.

Q7 How would an owner installing an eligible technology get started?

A: Reach out to an aggregation, like Diversified Energy Specialists, who will walk you through the application process and monetize the credits that your property generates.

Q8 Is this credit available for Towns?

A: Yes, I believe towns would qualify for this incentive as long as all other eligibility requirements were met.

Q9 Are there minimum efficiency standards for new ASHPs?

A: Yes. There is a list of MA APS eligible ASHP equipment at the following link (<https://www.mass.gov/info-details/qualifying-air-source-heat-pump-in-the-aps>). If you scroll half way down the page, there is a link titled "APS Eligible Small Air Source Heat Pumps" to an Excel document with all eligible ASHP equipment listed.

Q10 Can you give a few C&I scale bldg examples and \$s of annual credits (at current APS price)? We're doing a 40k s.f. house of worship/school VRF

conversion right now so it would be helpful to have a few reference points. Thx, it's Mitsubishi ASHP VRF.

A: There have only been a few larger facilities that have qualified for the APS with an ASHP or GSHP installation since 2016. Each of those facilities is very different and the number of credits generated are dependent on use, output capacity, technology, and other factors. In this case, I would feel more comfortable taking a look at all of the information and modeling it out on an individual basis to make any type of projection.

Q11 The town of Needham installed geothermal on the public Services Administration building in 2013, Are any credits available for early adopters?

A: Unfortunately, the MA APS program will only qualify thermal systems installed after 2015.

Q12 What about a mixed use building with housing and commercial? How will that be metered?

A: That system can either qualify as a large system that will be metered by specific metering devices that the MA DOER requires or it can be separated into a number of different facilities in the MA APS program. Each residential unit can apply as their own small facility and receive 10-years of credits at the time of application. On the commercial side of the building, the output would be metered and credits would be generated on a quarterly basis.

Q13 In some situations, utility incentives, grant funding , tax incentives etc, will cover all or a portion of the cost of heat pumps, geothermal, etc. How does that affect eligibility to participate in the APS program?

A: If a building receives an incentive that covers 80% or more of the cost of the system, it would not be eligible to receive an additional incentive in the APS program. For example, if a low-income building were to install a heat pump system and the LEAN program were to cover 100% of the cost, that facility would not be eligible to receive an APS incentive.

Q14 Are there increasing requirements for utilities to buy APS's so that there's upwards price pressure? (while supply also increases.)

A: Yes, that is one reason for the increasing requirements. In the APS program, the compliance obligation increases by 0.25% each year. In 2023, retail electricity suppliers are required to purchase AECs for 5.75% of the megawatt hours of electricity that are sold to end users within the state. In 2024, that requirement will be 6%. The compliance obligation increases each year in all APS and RPS programs. This is to expand the renewable energy (electricity) mix in the state over time and ensure that the MA GHG reduction goals are met.

Q15 Might be worth noting the difference between distribution utilities and third-party power suppliers--both are subject to portfolio standards.

A: Yes, both are subject to a compliance obligation in portfolio standards based on a percentage of the megawatt hours of electricity sold to end users in Massachusetts in each compliance year.

Q16 Are there any APS credit case studies involving ground source heat pumps that you would highlight?

A: Nearly all GSHP qualified generation units in the MA APS program have been residential. There have only been two “large” APS facilities with GSHP systems, one in 2016 and the other in 2019. I’ve reported to the APS residential GSHP systems as small as 230 credits and as large as 2,500 credits, with rebates ranging from \$3,000 to \$31,000. The number of credits generated mostly depends on the size of the home (square footage of conditioned space) and the type of GSHP system installed. The APS incentives for ASHP & GSHP systems are not large enough to favor these technologies based on the APS program, but they are helpful if you are interested in installing these technologies anyway.

Q17 Can you share the website for the program?

A: APS Program: <https://www.mass.gov/alternative-energy-portfolio-standard>

Q18 Is there new tech to pay attention to in regards to RECs?

A: There is a review of the APS and RPS programs every 3-5 years. Additionally, new technologies can apply and become eligible on a rolling basis. New technologies haven’t been added to the APS or RPS programs for a number of years. If I had to speculate about future programs, I believe there will be an opportunity in renewable heating fuels (biodiesel, renewable natural gas, renewable propane), and heat pumps. Additionally, I believe there could be programs in the future for energy storage. It is more likely that tax credits and other monetary subsidies are enacted for emerging tech rather than a market-based program.

Q19 In 2021, it seems like 90% of the MA Clean Energy Standard (CES) obligation was met through Alternative Compliance Payment (ACP) credits---cash paid to the state rather than actual investment in systems. Thoughts on why/how to fix it?

A: The relationship between the MA RPS Class I program and MA CES program is complicated. The CES requires retail electricity suppliers to procure a percentage of their sales from clean energy sources. The obligation was set at 22% in 2021 and increases by 2% annually. The retail electricity suppliers also have an obligation in the RPS Class I program. Solar and wind electric generation would qualify for the RPS Class I program and the CES. Despite the retail electricity suppliers facing a compliance obligation in both programs, their RPS Class I compliance counts towards compliance with the CES. Additionally, the ACP on credits in the CES is set at 50% of the ACP in the RPS Class I program. Given that the ACP is so low in the CES, many companies have chosen to pay

the ACP. There are a number of changes that could be made but we'll have to see if the MA DEP chooses to review the program.

Links & Resources

APS Program: <https://www.mass.gov/alternative-energy-portfolio-standard>

RPS Program: <https://www.mass.gov/renewable-energy-portfolio-standard>

LEED v5 has up to 5 points in a new GHG emissions reduction credit for renewable energy. [LEED v4 info](#).

Miro Board: https://miro.com/app/board/uXjVNFqAecc=?share_link_id=805294596309