ALTERNATIVE ENERGY PORTFOLIO STANDARD REVIEW

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Prepared For

Massachusetts Department of Energy Resources

Diversified Energy Specialists, Inc.
Joe Uglietto, President

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I. Summary

A. History of the APS

The Massachusetts Alternative Energy Portfolio Standard (APS) was created to facilitate investment into low-carbon alternative energy systems in residential thermal and commercial power generation. The APS requires retail electric suppliers to obtain a percentage of the electricity they serve to their customers from alternative energy sources. The APS offers opportunity for Massachusetts business, institutions, governments, and retailers to earn an incentive for installing alternative energy systems (or distributing alternative fuels), which are not necessarily renewable, but contribute to the Commonwealth's clean energy goals by reducing greenhouse gas emissions. Requires a mandated percentage of the state's electric load to be met by eligible technologies. Eligible facilities and retailers generate Alternative Energy Credits (AECs), which are sold to retail electric suppliers.[1]

B. Success of the APS

The APS has facilitated significant capital investment into combined heat and power (CHP) generation units. From 2010-2017, CHP generated 99% of the Alternative Energy Credits (AECs) in the APS. In 2018, renewable thermal technologies were introduced into the program. Of those technologies, liquid biofuels have experienced the most participation and growth. Residential air-and ground-source heat pumps have seen growth in the number of generation units over the last year.

C. Scope of the Review

Diversified Energy Specialists analyzed the APS policy, financial incentive, market dynamics, supply and demand, and greenhouse gas reductions of the highest generating technologies in the program. All technologies were analyzed based on ratepayer costs, capital investment required, emissions reduction, and growth potential.

[1] Massachusetts Department of Energy Resources

II. Supply and Demand Analysis

A. Policy

The policy levers that impact the supply and demand in the APS include the minimum standard, the alternative compliance payment (ACP), eligible technologies, banking constraints, and a cap on the available number of AECs for a technology. All these policy levers were analyzed under the current regulations.

1. Compliance Obligation

Electric load serving entities (LSEs) are obligated to purchase a certain percentage of their distributed electric load in Massachusetts from alternative energy. This is accomplished by purchasing Alternative Energy Certificates (AECs) or by the Alternative Compliance Payment (ACP), which is a cap on the price of AECs. The compliance obligation can be calculated as the Massachusetts retail electricity load, multiplied by the minimum standard percentage. Since 2014, the minimum standard has increased by 0.25% per year and will continue at this rate under current regulations.

The supply of AECs has surpassed the compliance obligation and it will be necessary to increase the minimum standard to facilitate further capital investment into eligible technologies in the APS.

Table 1: Compliance Obligation

Compliance Year	Massachusetts Retail Electric Load (MWh)	Minimum Standard	Compliance Obligation (AECs)
2010	50,026,093	1.50%	626,902
2011	49,386,169	2.00%	911,748
2012	48,992,430	2.50%	1,185,236
2013	49,252,929	3.00%	1,448,421
2014	48,129,294	3.50%	1,681,759
2015	48,009,723	3.75%	1,799,068
2016	46,864,431	4.00%	1,874,261
2017	45,722,855	4.25%	1,942,089
2018	46,448,304	4.50%	2,087,123
2019	45,951,935	4.75%	2,182,717
2020	45,047,645[2]	5.00%	2,252,382

[2] DOER 2016 RPS and APS Annual Compliance Report
https://www.mass.gov/files/documents/2019/01/22/RPS-APS%202016%20Annual%20Compliance%20Report%20FINAL_REV1.pdf

a) Projected Compliance Obligation

The compliance obligation was projected through 2030 under the current minimum standard regulations. The Massachusetts retail electric load was projected by using the ISO-NE Final 2019 Energy Efficiency Forecast[3] and adding the electrification forecasts from the ISO-NE 2020 CELT Report[4].

Table 2: Projected Compliance Obligation

Compliance Year	Massachusetts Retail Electric Load (MWh)	Minimum Standard	Compliance Obligation (AECs)
2020	45,047,645	5.00%	2,252,382
2021	44,856,000	5.25%	2,354,940
2022	45,671,000	5.50%	2,511,905
2023	46,516,000	5.75%	2,674,670
2024	47,312,000	6.00%	2,838,720
2025	48,071,000	6.25%	3,004,438
2026	48,852,000	6.50%	3,175,380
2027	49,635,000	6.75%	3,350,363
2028	50,412,000	7.00%	3,528,840
2029	51,081,132	7.25%	3,703,382
2030	51,755,477	7.50%	3,881,661

2. Alternative Compliance Payment

The ACP price caps the price of AECs. Retail electricity suppliers can choose to pay the ACP price to meet compliance for each MWh they are obligated or can purchase AECs. The ACP is determined by taking the most recent ACP and adding the result of the consumer price index for the most recent year divided by the consumer price index from the year prior.

Diversified Energy Specialists does not believe any changes should be made to the current ACP regulations. Increasing the ACP price will directly impact the ratepayer cost of the APS program. LSEs factor the ACP price into their projected accounting each year and increasing the ACP will increase the cost of electricity for all ratepayers in Massachusetts. With the current oversupply in the market, increasing the ACP will not have any effect on the price of AECs.

[3] ISO-NE Final 2019 Energy Efficiency Forecast
[4] ISO-NE 2020 Capacity, Energy, Loads, and Transmission Report

Table 3: Alternative Compliance Payment

Compliance Year	Alternative Compliance Payment Price
2010	$20.00
2011	$20.40
2012	$21.02
2013	$21.43
2014	$21.72
2015	$22.02
2016	$22.00
2017	$22.23
2018	$22.64
2019	$23.13
2020	$23.50

3. Banking

LSEs can bank up to 30% of their obligation in additional AECs. These AECs can be rolled forward up to two years. This is a policy lever that should remain unchanged. AEC generation has exceeded the compliance obligation and the ability for LSEs to bank AECs has allowed all generated AECs to be monetized.

Table 4: Banked AECs

Compliance Year	Number of AECs Banked by LSEs
2017	221,624
2018	317,814
2019	354,882

4. Cap on Liquid Biofuels

Liquid biofuels are capped at 20% of the generated AECs in the APS. The cap is calculated by multiplying the Massachusetts retail electric load of two years prior by the current year's minimum standard. The number of generation units and participation in the APS program from liquid biofuels has grown significantly since it became an eligible technology. The cap was surpassed in 2019 and in the first two quarters of 2020, the cap was nearly doubled.

The cap on liquid biofuels should be increased. The cost-benefit for a liquid biofuel generation unit to participate in the APS program is no longer present and generation units are choosing to opt out of the program.

Table 5: Liquid Biofuels Cap

Compliance Year	20% Cap on Biofuels (AECs)	Biofuel Generation (AECs)	Percent of AECs Minted
2017	408,082	410,331	98%
2018	421,779	292,748	100%
2019	434,300	557,616	78%
2020	464,100	436,184 (Q1&Q2)	53%

B. Supply

Since renewable thermal technologies were introduced in 2018, the supply of AECs has surpassed the compliance obligation. The price of AECs has crashed to below $3.00 per MWh and policy changes need to be made to incentivize further investment into renewable thermal technologies.

1. Eligible Technologies

a) Combined Heat and Power

CHP has generated the most AECs of any technology since the program began. CHP generated greater than 75% of the AECs in 2018.

In addition to the APS, CHP units receive incentives from MassSave and the Federal ITC. Daymark Energy Advisors reports that CHP is economic without the support of the APS[5].

Analyzing the growth in CHP generation over the last three years and using 1.6M AECs generated from CHP in 2018 as a reference point, a growth rate of 180,878 AECs per year was projected from CHP in the APS.

Diversified Energy Specialists recommends placing a cap on CHP generation at the total number of AECs generated from CHP systems in 2021. Generation units that received large capital investments, expecting to receive an incentive in the APS, need to be able to come online prior to the cap being set. If CHP does exceed the cap, those AECs should be awarded on a pro-rata basis.

b) Fuel Cell

AECs were generated from fuel cell technology for the first time in 2018. Using that limited data, fuel cell growth was projected at 19,758 AECs per year. A

[5] Daymark Energy Advisors, Alternative Energy Portfolio Standard Review

multiplier of 1.5 AECs to 1 MWh equivalent of useful thermal energy generated applies to fuel cell generation units.

Diversified Energy Specialists does not recommend changing the eligibility requirements of fuel cell generation units.

c) Renewable Thermal

(1) Air-Source Heat Pump

Air-source heat pump units generated 28,416 AECs in 2018 from 231 generation units. In 2017, 55 ASHP generation units were adopted. Based on the adoption rate of ASHP units over the last few years in the APS program, a growth rate of 19,190 AECs per year was projected through 2030.

For new construction, small ASHP systems must supply 100% of the building's total annual heat load. In retrofit construction, small ASHP systems must provide at least 90% of the total annual heat load and have a heat-rate capacity at five degrees Fahrenheit of at least 50% of the nameplate capacity of the existing heating source equipment.

A multiplier of 2 AECs to 1 MWh equivalent of useful thermal energy generated applies to small ASHP generation units supplying less than 100% of the buildings annual heat load. A multiplier of 3 AECs to 1 MWh equivalent of useful thermal energy generated applies to small, intermediate, and large ASHP generation units supplying 100% of the buildings annual heat load.

Diversified Energy Specialists recommends increasing the eligibility requirements of retrofit construction for small ASHP systems. Small ASHP systems must provide at least 95% of the total annual heat load of the building and have a heat-rate capacity at five degrees Fahrenheit of at least 75% of the nameplate capacity of the existing heating source equipment.

(2) Ground-Source Heat Pump

Ground-source heat pump units generated 71,910 AECs in 2018 from 74 generation units. In 2017, 26 GSHP generation units were adopted. Based on the adoption rate of GSHP units over the last few years in the APS program, a growth rate of 22,350 AECs per year was projected through 2030.

Small GSHP systems must provide 100% of the building's total annual heat load. A multiplier of 5 AECs to 1 MWh equivalent of useful thermal energy generated applies to small, intermediate, and large GSHP generation units.

Diversified Energy Specialists does not recommend changing the eligibility requirements of GSHP generation units.

(3) Liquid Biofuels

Liquid biofuels generation units have experienced growth in the APS that is only rivaled by CHP. In Q1 & Q2 2020, liquid biofuels units nearly doubled the 20% cap, generating 436,184 AECs, of which only 217,150 were minted. The greenhouse gas savings from liquid biofuel generation units in the first six months of 2020 was 287,068,220 lbs. CO2e vs. the alternative. In the three and a half years that liquid biofuels were eligible in the APS, the total greenhouse gas savings has been 1,116,825,889 lbs. CO2e. In addition, these greenhouse gas savings vs. the alternative have been accomplished at zero cost to the end user. Retailers are selling biofuel blends at the same price as heating oil.

Liquid biofuel generation units are unique in the APS program in several ways. First, a single generation unit can reduce greenhouse gas emissions in thousands of buildings at once. No modifications to equipment are needed to deliver a biodiesel blend instead of a heating oil. Therefore, distributors can deliver a biodiesel blend to their entire customer base, which on average is thousands of homes, and reduce emissions on a large scale. Second, liquid biofuel generation units can provide greenhouse gas emissions to thousands of homes at no cost to the end user. Other renewable thermal technologies require significant capital investment from the end user and installation can take months. The barriers to emissions reductions from a heat pump system are significant to and end user, while a liquid biofuel generation unit has the ability to start or stop delivering biofuel blends to end users at any time at no additional cost. Third, liquid biofuel generation units can reduce emissions immediately. Since equipment modifications, construction, and capital investment are not needed, liquid biofuel generation units can generate greenhouse gas emissions savings at large scale today, helping the state meet its greenhouse gas reduction goals.

Diversified Energy Specialists recommends increasing the cap on liquid biofuel generation units from 20% to 30% in 2022. Increasing the cap will facilitate continued growth from the lowest cost and highest emissions reduction technology vs. the alternative in the APS program.

(4) Solar Thermal

Solar Thermal units generated 44,198 AECs in 2018 from 114 generation units. 139 generation units were adopted in 2019. Based on the adoption rate of solar thermal units over the last few years in the APS program, a growth rate of 9,693 AECs per year was projected through 2030.

Small, intermediate, and large solar hot water systems used for domestic hot water receive a multiplier of 3, while intermediate and large solar hot air systems receive a multiplier of 5.

Diversified Energy Specialists does not suggest changing the eligibility requirements of Solar Thermal generation units.

To better understand the barriers to emissions reduction and adoption of the largest generation technologies in the APS, a list of key metrics was developed that demonstrate the value of each technology in the APS.

Capital Investment Required: The capital investment required to reduce greenhouse gas emissions vs. the alternative. The cost of the Generation Unit. (High, Moderate, Low, Zero)

Greenhouse Gas Reduction Per Generation Unit: All generation units the APS must reduce greenhouse gas emissions by 50% or more vs. the alternative, but some generation units reduce more emissions per AEC than others. (High, Moderate, Low)

Widespread Adoption Potential: Considering the capital investment required, the emissions reduction vs. the alternative, and the level of the supply chain incentivized. (High, Moderate, Low)

Adoption Speed: How quickly can generation units begin providing emissions savings to Massachusetts? (Slow, Moderate, Fast)

Greenhouse Gas Savings to Massachusetts: The total emissions savings from the technology in the APS. (High, Moderate, Low)

Table 6: Technology Comparison

Technology	Capital Investment Required	GHG Reduction per Unit	Widespread Adoption Potential	Adoption Speed	GHG Savings to MA
CHP	High	High	Low	Slow	Moderate
ASHP	High	Moderate	Low	Slow	Low
GSHP	High	Moderate	Low	Slow	Low
Biofuels	Zero	High	High	Fast	High
Solar Thermal	High	Moderate	Low	Slow	Low

2. Supply Analysis

Supply of AECs surpassed demand in 2017 and policy changes are necessary to bring the market back to equilibrium.

Figure 1: AEC Generation (2010-2019)

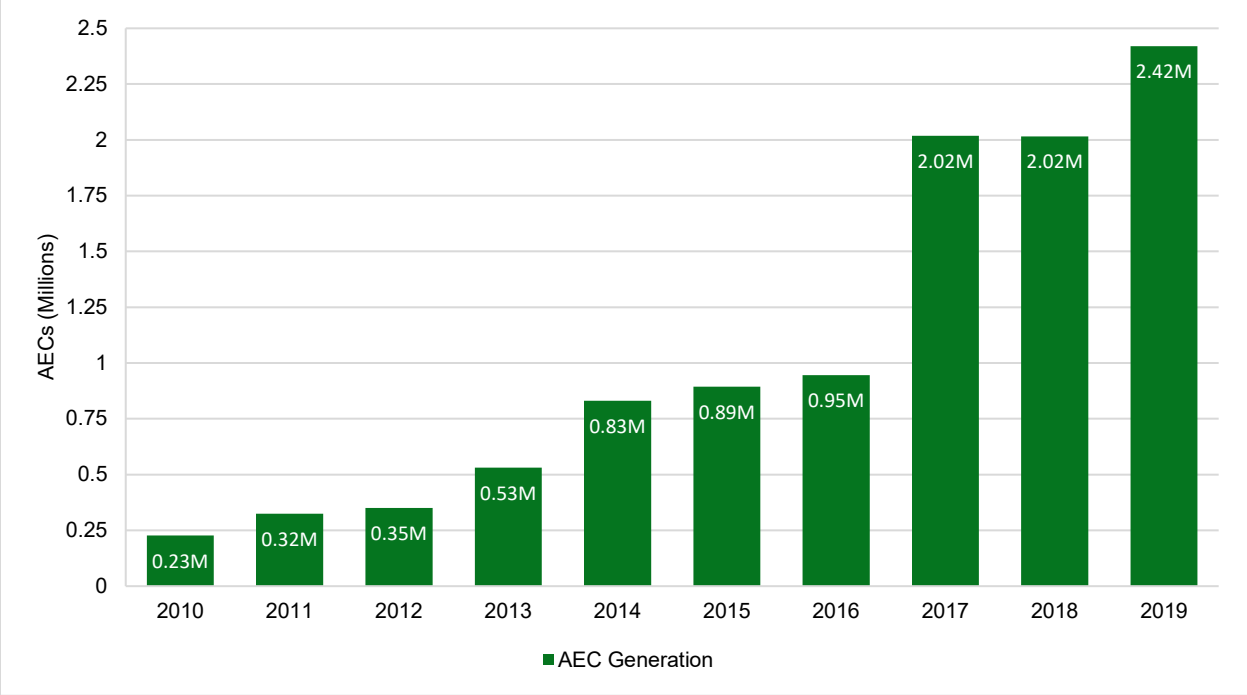
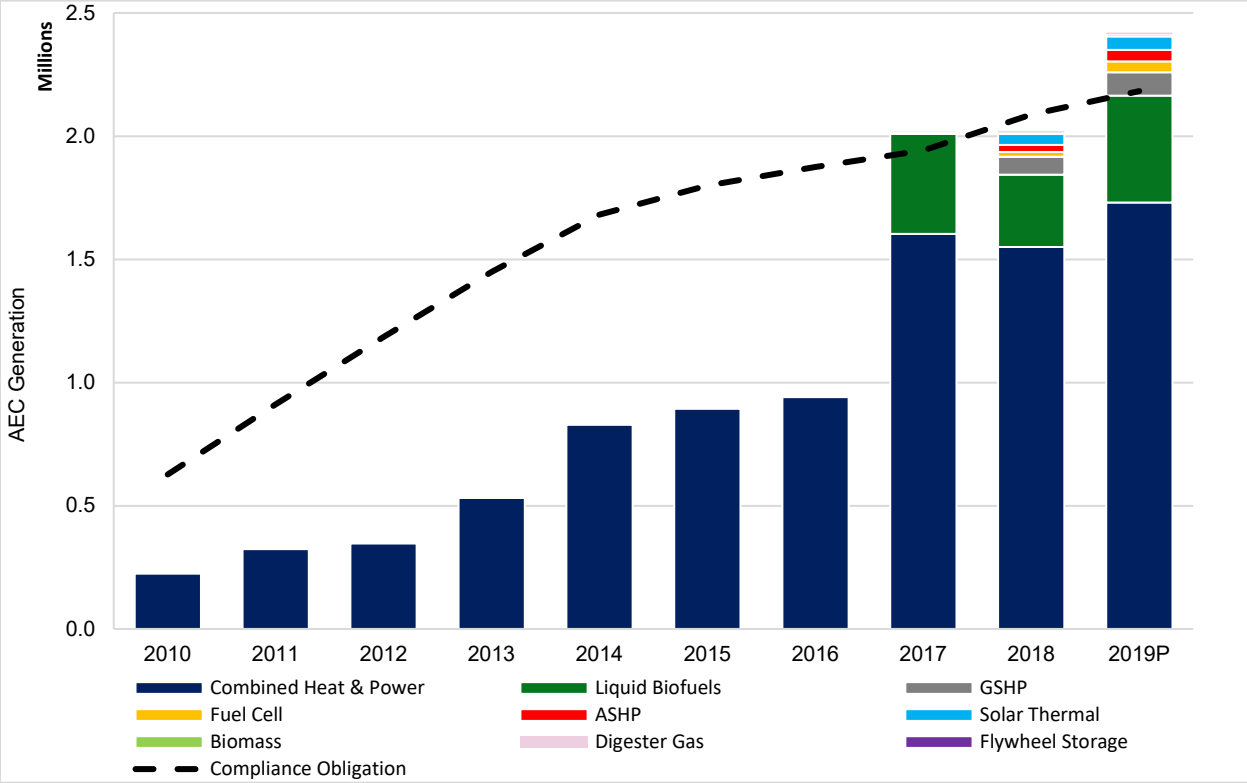


Figure 2: AEC Generation by Technology (2010-2019)



C. Demand Analysis

The compliance obligation outpaced AEC generation in the APS until 2017. AEC generation is now higher than the compliance obligation and growing at a compound annual growth rate that is higher than the year over year minimum standard increase of 0.25%.

Figure 3: Compliance Obligation vs. AEC Generation (2010-2019)

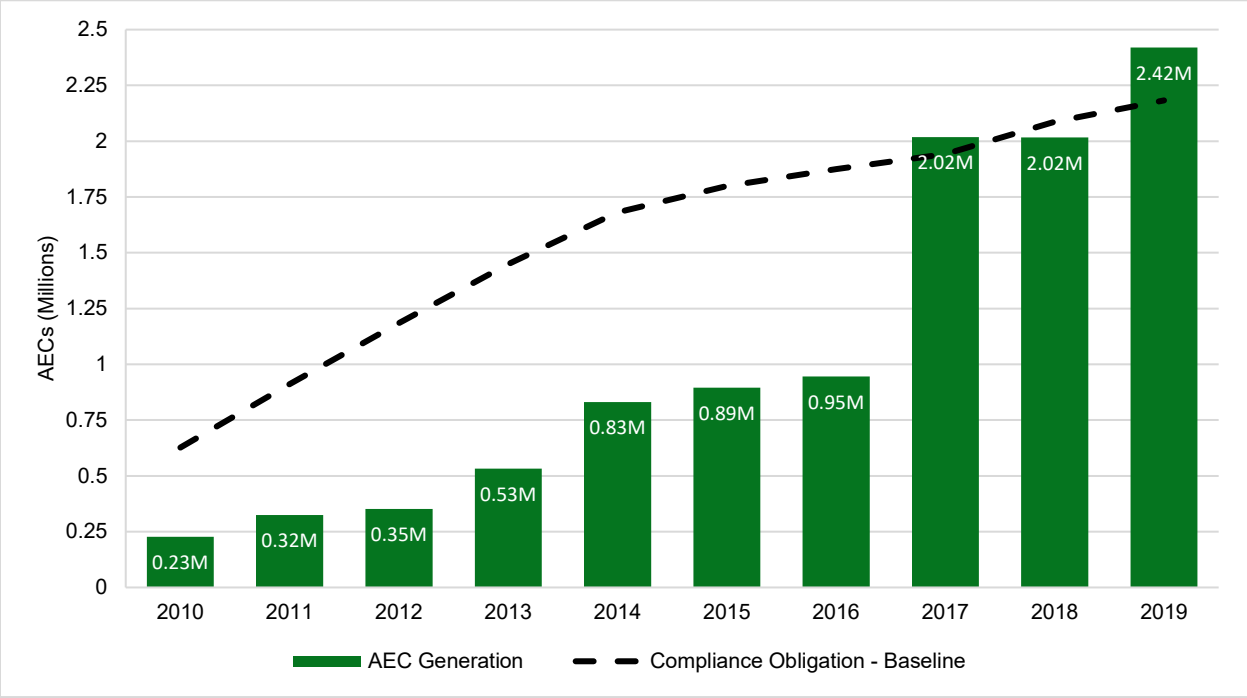
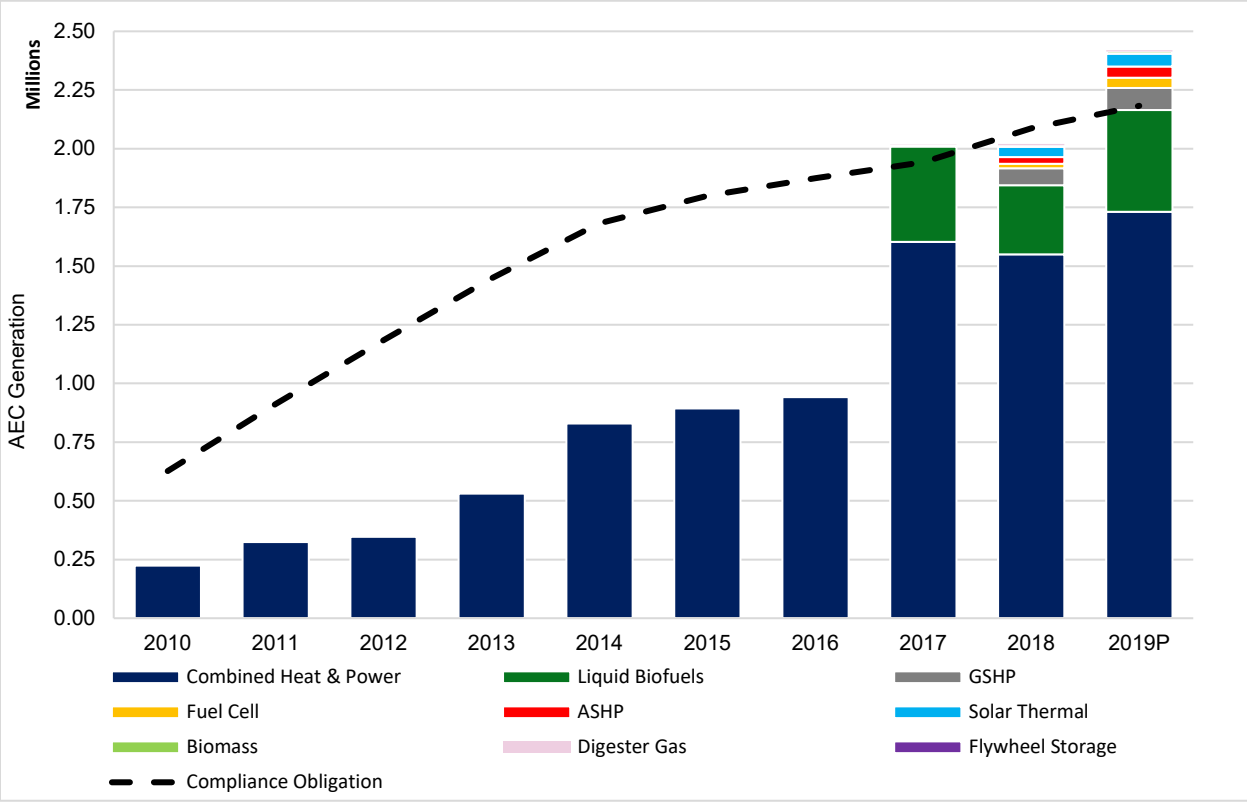


Figure 4: Compliance Obligation vs. AEC Generation by Technology (2010-2019)



D. Projected Supply and Demand

Daymark made assumptions about renewable thermal adoption from 2019-2030, some of which was based off installations that provide less than 90% of the buildings annual heat load.

In 2018, 442 renewable thermal generation units were adopted in the APS. In 2019, 638 renewable thermal generation units were adopted in the APS. Our renewable thermal growth projections were based on those growth rates, separated by technology and the average numbers of AECs generated per unit.

Figure 5: Compliance Obligation vs. AEC Generation (2019-2030)

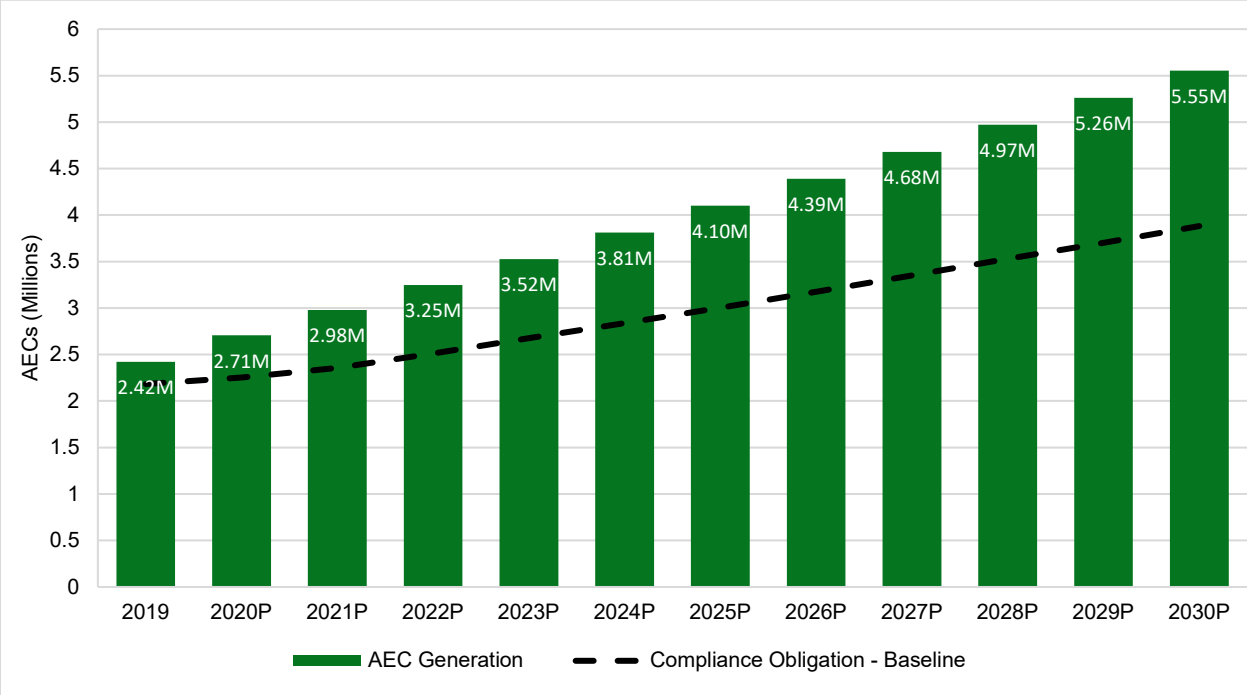
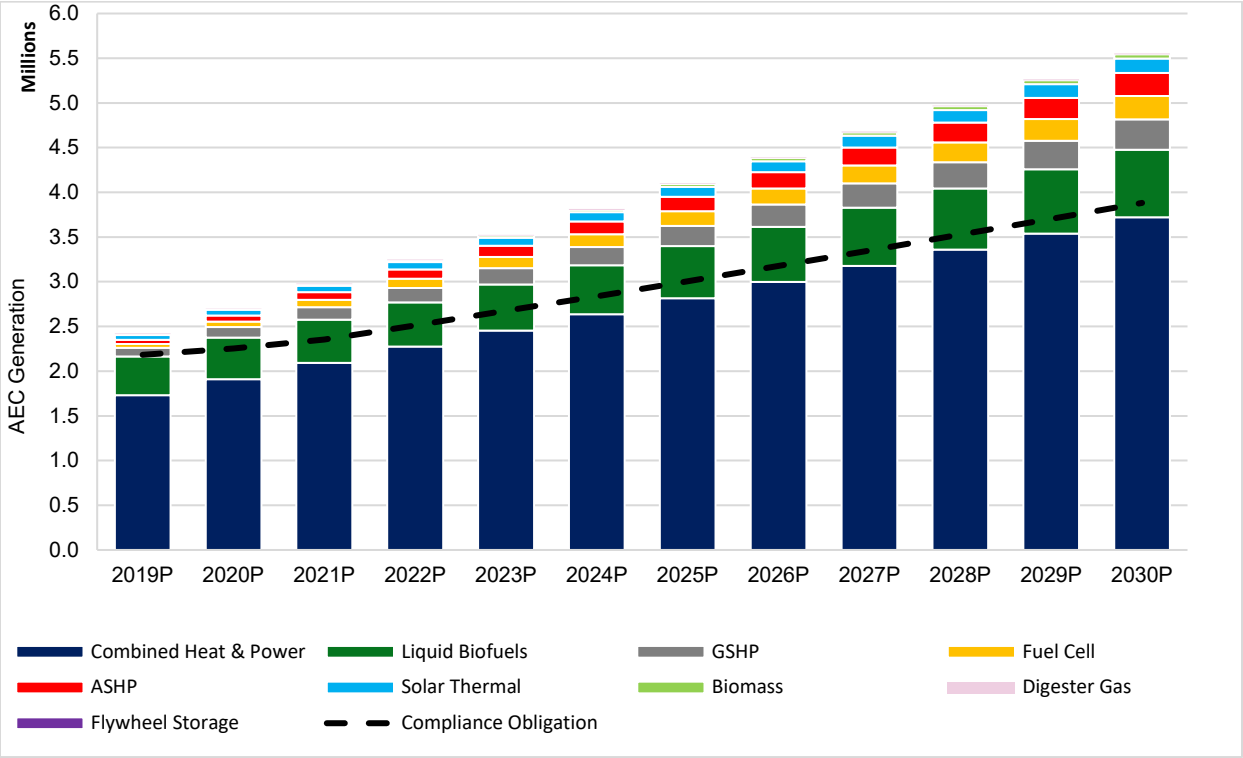


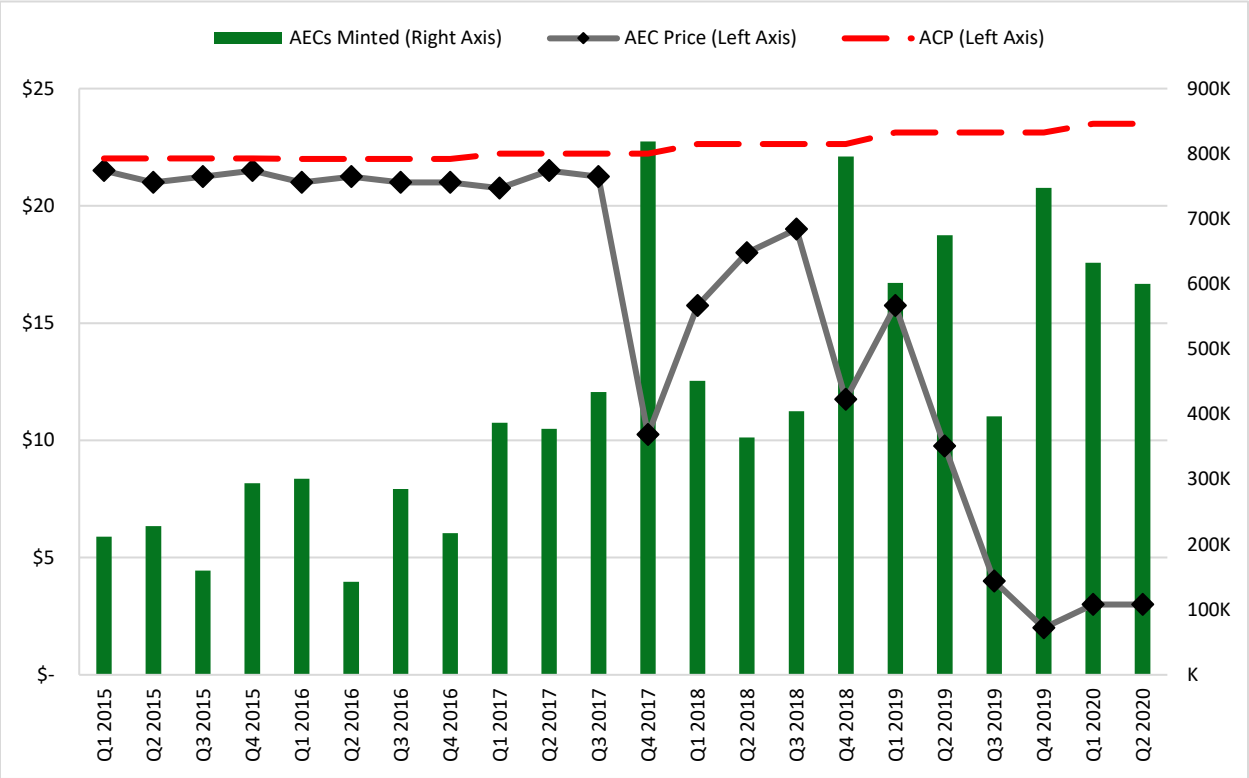
Figure 6: Compliance Obligation vs. AEC Generation by Technology (2019-2030)



E. Price Analysis

The supply of AECs surpassed the compliance obligation in 2017, which caused the price of AECs to crash. The price of an AEC has been trading below $4.00 for nearly a year, which will continue until the current regulations are changed. There are two options to increase the price of AECs; the first is to increase the compliance obligation and the second is to decrease the supply of AECs.

Figure 7: APS Price History (2015-2020)



F. Scenario Analysis

Figure 8: Increase Minimum Standard in 2022

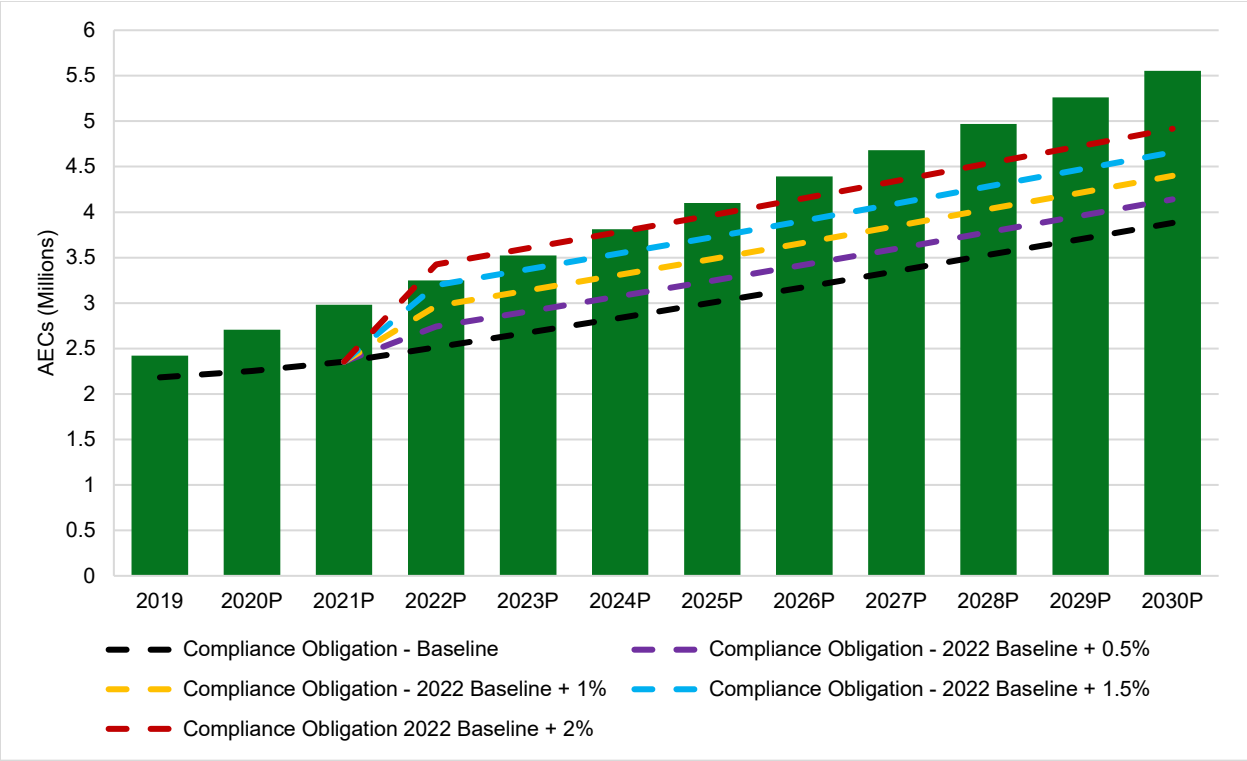


Figure 9: Increase Minimum Standard in 2022 & YoY Minimum Standard Rate in 2022

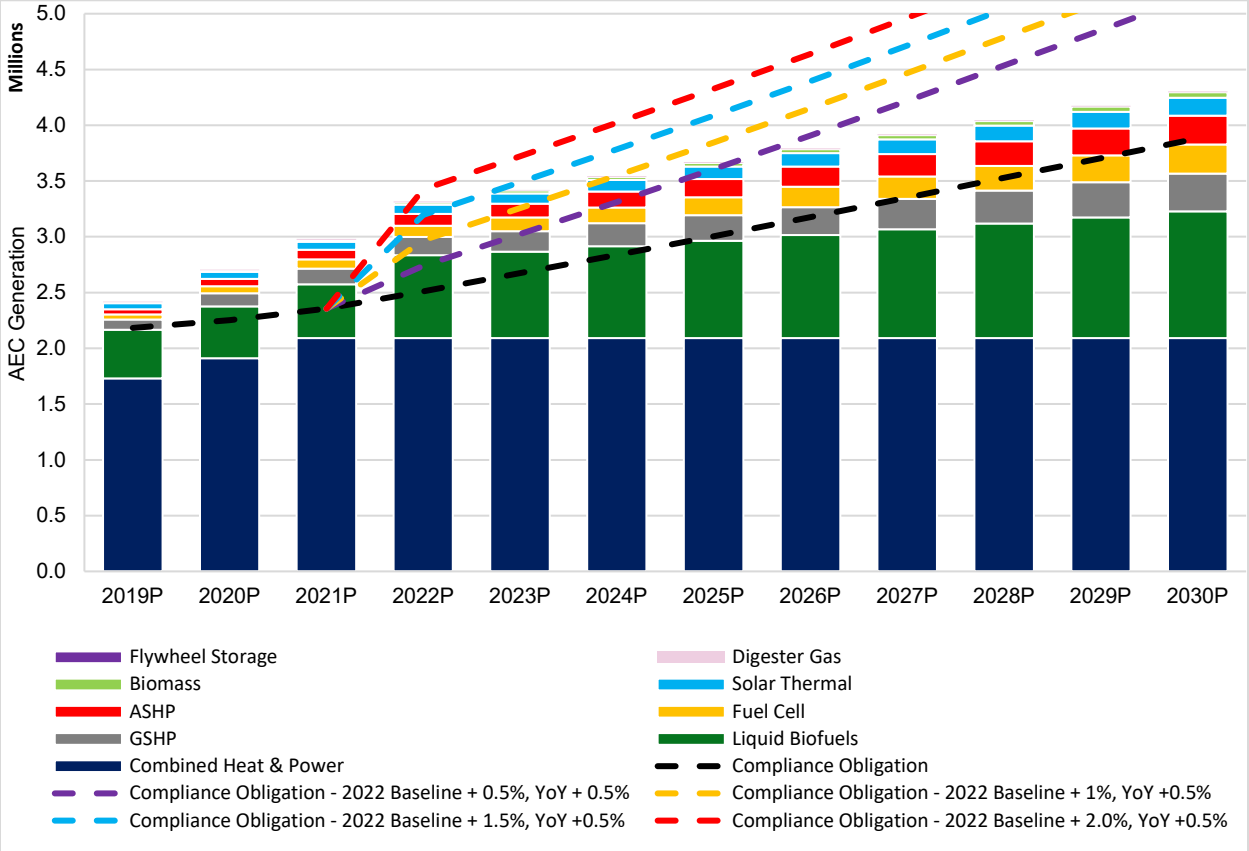


Figure 10: Cap CHP at 2021 Levels in 2022

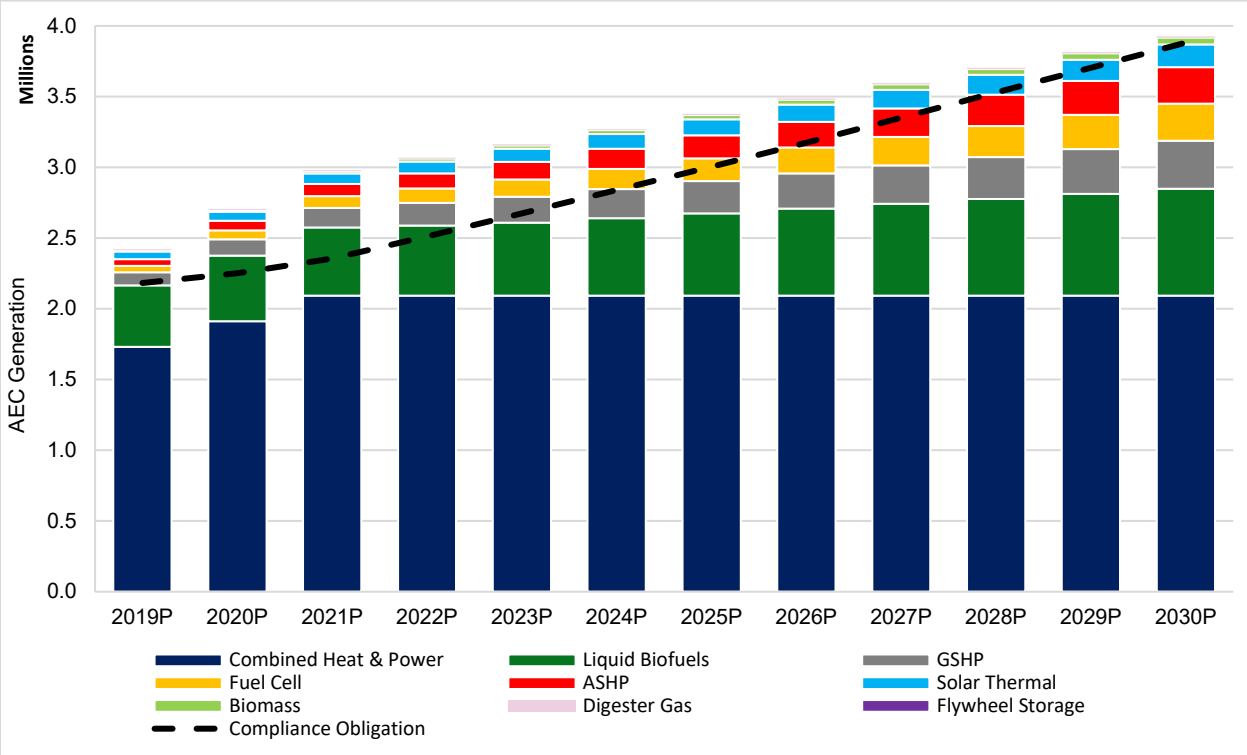


Figure 11: Cap CHP at 2021 Levels in 2022. Liquid Biofuel Cap Increased to 30% in 2022

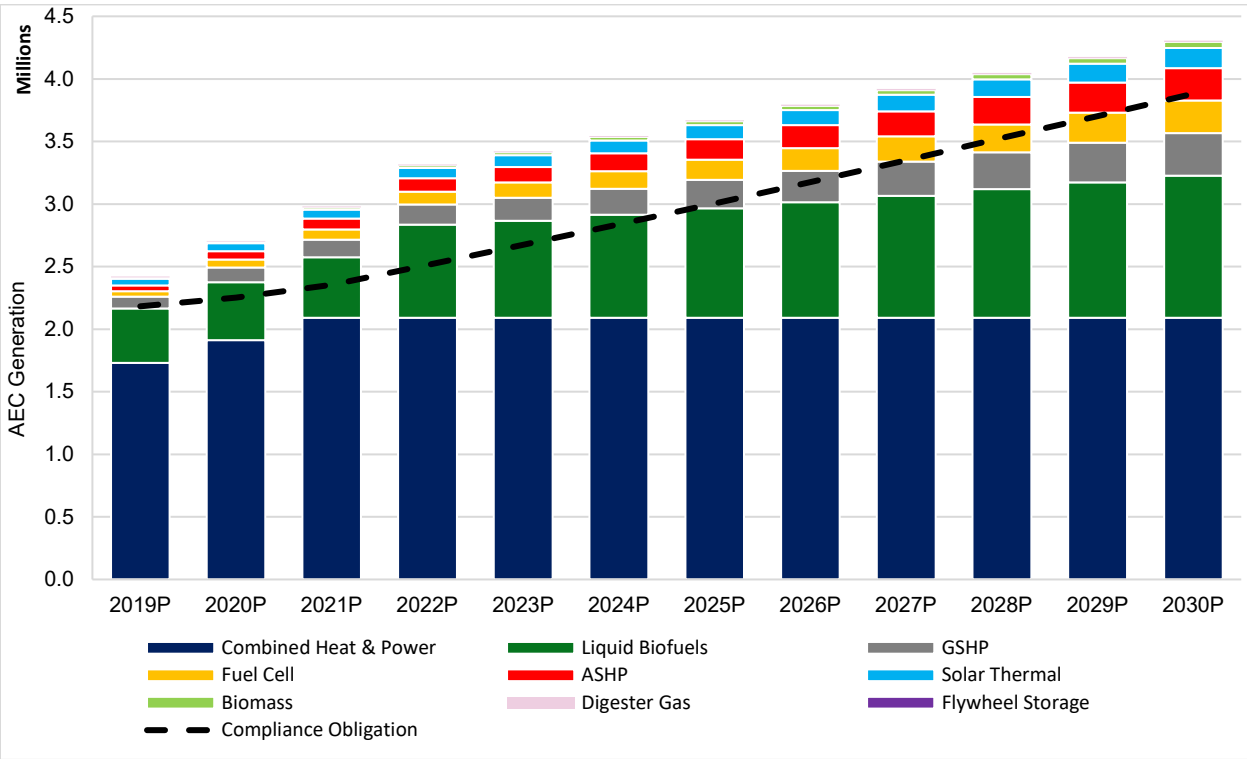


Figure 12: Cap CHP at 2021 Levels + Bio Increase 2% YoY

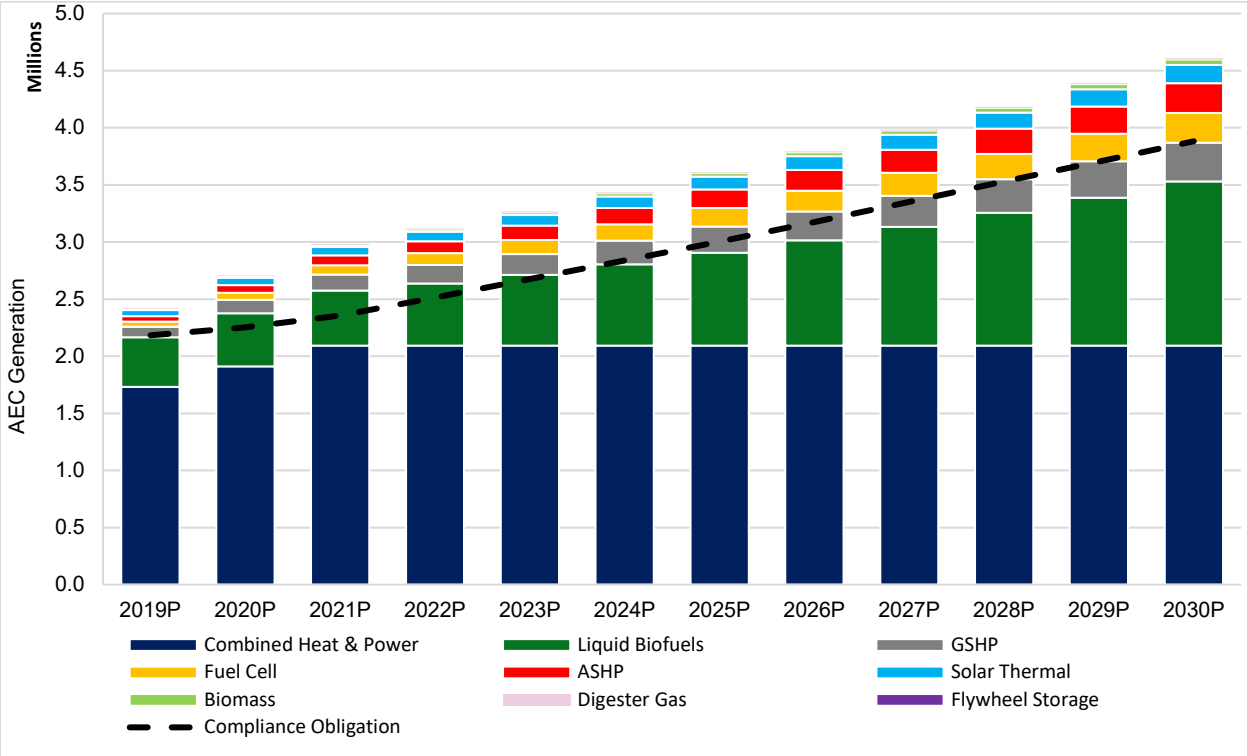


Figure 13: Cap CHP at 2021 Levels. Increase Liquid Biofuels Cap to 30%. 2022 Increase to Minimum Standard

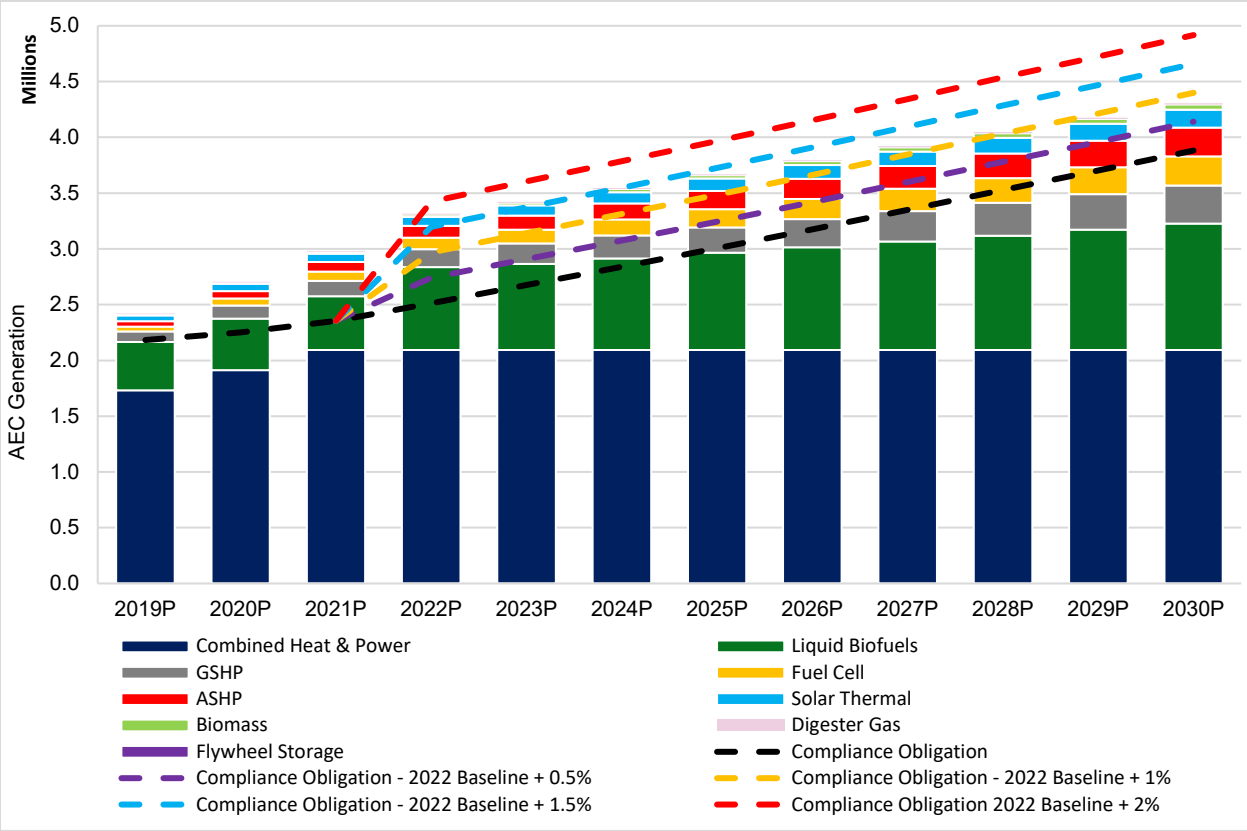
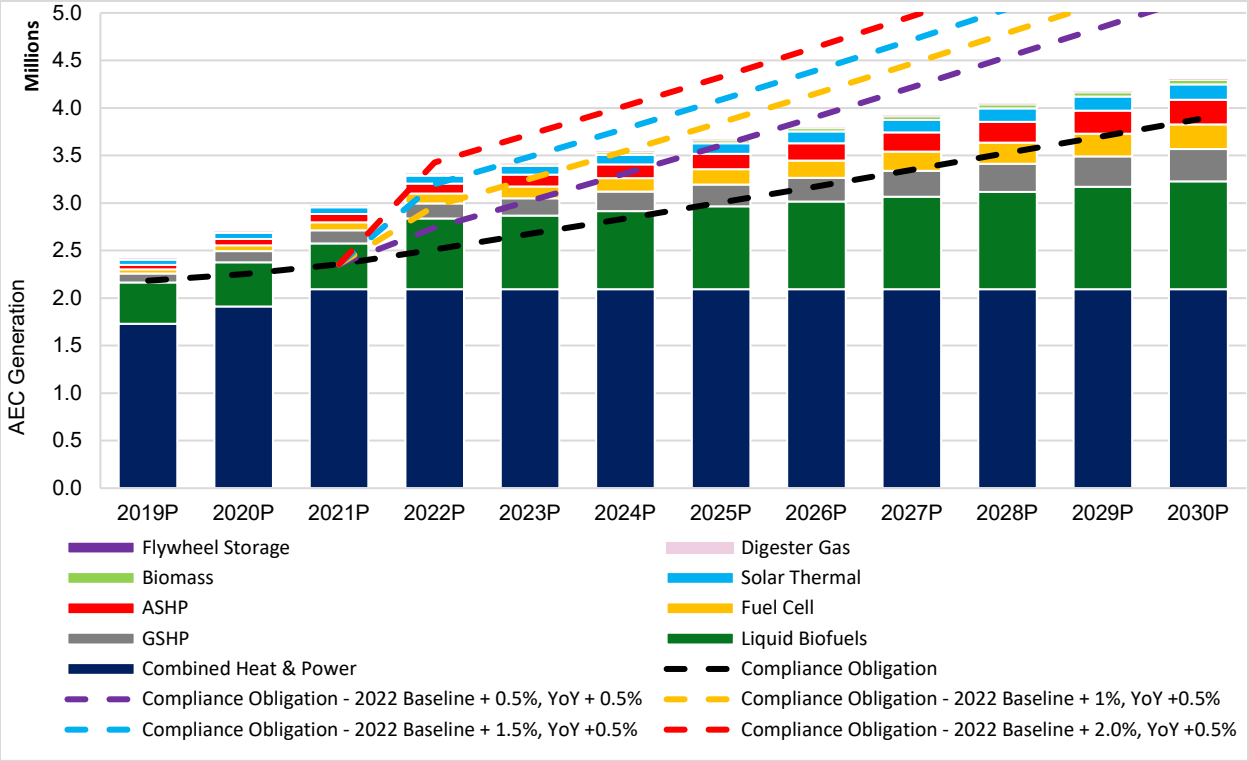


Figure 14: Cap CHP at 2021 Levels. Increase Liquid Biofuels Cap to 30%. 2022 Increase to Minimum Standard. Increase YoY Minimum Standard Rate



G. Findings and Recommendations

The above scenarios explored policy levers that decreased supply and increased demand. The goal was to find a scenario which created a less volatile AEC price by keeping the supply and demand close to equilibrium through 2030, while reducing greenhouse gas emissions at the highest rate with the lowest cost to the ratepayer.

When analyzing the compliance obligation, it is necessary to provide immediate relief to the oversupply in the market. Therefore, it is necessary to implement a one-time increase to the obligation in 2022. In table 13, increasing the minimum standard in 2022 from the baseline level of 5.50% by 1.50% to 7.00% proved to be the most attractive option. That one-time 1.50% minimum standard increase, followed by the baseline minimum standard increase of 0.25% per year provided a market where supply and demand were closest to equilibrium long term. This would create a market with higher and less volatile AEC prices, which would facilitate significant capital investment into renewable thermal technologies. Increasing the minimum standard by 0.50% per year proved to cause a significant undersupply in the market, which will lead to increased ratepayer costs of the program.

When analyzing AEC generation, it is necessary to reduce the compound annual growth rate, while prioritizing technologies that provide the highest emissions reduction at the lowest cost. CHP generates greater than 75% of AECs in the APS program and Daymark Energy Advisors showed that CHP units are economic to run without the APS incentive. Despite that fact, significant capital investments were made into CHP generation units with the assumption that they would receive an APS incentive. Capping CHP units at their 2021 AEC generation levels in 2022 would be the most advantageous policy decision for the APS. In addition, liquid biofuel generation units have the highest growth potential at the lowest cost. Liquid biofuel generation units are curbing their generation due to exceeding the cap and receiving little incentive for their high emissions reductions. To facilitate continued, and additional, participation from liquid biofuel generation units at no cost to the end user, the cap on liquid biofuels should be increased to 30% in 2022.

III. Emissions and Financial Analysis

A. Financial Analysis

Daymark Energy Advisors addressed the financial implications of most eligible technologies adequately in their report.

On average, liquid biofuel generation units are purchasing a blended biodiesel or a B99.9 biodiesel between the price of heating oil and $0.15 above the price of heating oil. The prices vary from different suppliers based on location and product. In Q1 & Q2 2020, liquid biofuel generation units received 53% of the credits they generated, due to exceeding the cap. With the market price of AECs at $3.00 in the Q2 2020 trading period, liquid biofuel generation units received roughly $0.045 per gallon of B99.9 purchased for their AECs. This caused many liquid biofuel generation units to question whether they should continue participating in the APS program. Higher AEC prices and a higher cap on liquid biofuels would generate continued growth from liquid biofuel generation units.

1. The Inequity of Emissions Reduction – Low-Income Accessibility

Every resident in Massachusetts deserves access to renewable thermal technologies, but most low carbon and renewable thermal technologies require a large capital investment. The high cost is a barrier to entry for most Massachusetts residents and it disproportionately effects low-income communities.

Any Massachusetts resident with a heating oil system in their home or apartment building could receive a biodiesel blended fuel that reduces greenhouse gas emissions by 80% vs. the alternative. The homeowner will not have to pay an additional cost for the biodiesel and there will not be any equipment adjustments or modifications required up to a B50. The resident will not have to save up for years to invest in an air-source heat pump system that will cost $15,000 - $20,000 and require keeping a secondary heat source. Greater than 700,000 Massachusetts households have equipment that could support a biodiesel blend and immediately reduce greenhouse gas emissions at zero cost to them.[6]

[6] Massachusetts Home Heating Profile – U.S. Census
https://www.mass.gov/service-details/how-massachusetts-households-heat-their-homes

B. Emissions Analysis[7]

Lbs. Co2e/MMBTU heat delivered - 100-year global warming potentials – Abiogenic Emissions

ULSD Heating Oil: 228.8 lbs CO2e/MMBTU
Propane: 206.1 lbs CO2e/MMBTU
Natural Gas (Municipal Grid): 188.3 lbs CO2e/MMBTU
ISO NE Air Source Heat Pump – Non-baseload Electricity Mix: 152.3 lbs CO2e/MMBTU
ISO NE Ground Source Heat Pump – Non-baseload Electricity Mix: 101.2 lbs CO2e/MMBTU
Plant-based Biodiesel (Soybean Oil Feedstock): 90.8 lbs CO2e/MMBTU
Animal-based Biodiesel (Tallow Feedstock): 63.7 lbs CO2e/MMBTU
Used Cooking Oil-based Biodiesel: 35.9 lbs CO2e/MMBTU

1. Time Value of Emissions Reduction[8]

Reducing greenhouse gas emissions today is more important than reducing greenhouse gas emissions in the future. It is important to meet the Massachusetts 2030 and 2050 greenhouse gas reduction goals, but it is just as important to start reducing greenhouse gas emissions today. Meeting a specific benchmark in 2030 does not account for the timing of greenhouse gas emissions, the cumulative impact of those emissions, or its long-term impact after 2030. Like compounding interest, timing matters.

If Massachusetts set a goal of reducing greenhouse gas emissions from the buildings sector 20% by 2022, biodiesel is the only technology in the APS that could reduce emissions by those levels immediately and at zero cost to the end user. A 50% biodiesel blend would reduce greenhouse gas emissions by more than 40% would not require any equipment changes and would not add any additional cost to the end user. There is adequate supply of domestically produced biodiesel to support increasing demand and reduce greenhouse gas emissions in Massachusetts today.

2. Biodiesel Emissions

Each gallon of biodiesel that displaces heating oil reduces greenhouse gas emissions by 19.598 lbs. of CO2e. In the first two quarters of 2020, 14.65 million gallons of APS eligible biodiesel was delivered to end users in Massachusetts, generating an emissions savings of 287,068,220 lbs. CO2e vs. the alternative. The 14.65 million gallons of biodiesel resulted in the minting of 232,050 AECs in Q1 & Q2.

Each biofuel AEC minted in Q1 & Q2 2020 resulted in an emissions savings of 1,237 lbs. CO2e.

[7] Kearney – Heat Source Carbon Footprint Comparison
[8] Renewable Energy Group, Carbon Reduction Now!

C. Recommendations

The emissions savings from biodiesel vs. the alternative per AEC is providing immediate results for the state, at zero cost to the end user, and has immediate and widespread adoption potential. On the other hand, some generation units (retailers) will choose not to participate in the APS program if they are losing money by participating. This is the case in 2020 and will also be the case in 2021.

Increasing the cap on biodiesel generation from 20% to 30% of the APS program in 2022 will facilitate continued participation and growth in both emissions savings and generation units.

IV. Daymark Energy Advisors Report Analysis

A. Daymark Recommendations Analysis

1. Moving obligation to Natural Gas LDCs

The one common trait of portfolio standards is that the compliance obligation is placed on the LSEs. All other thermal portfolio standards place the compliance obligation on the LSEs as well. Although this is an appealing concept, why Natural Gas LDCs and not propane distributors?

2. Heat Pump Multipliers

There are significant multipliers placed on both ASHP and GSHP in the APS. The low adoption rates from both residential and commercial buildings is because of the high cost of these systems. In addition, ASHPs are not able to sufficiently heat homes in Massachusetts in the cold winter days, requiring a secondary heat source. Further incentivizing a technology that is cost prohibitive and does not achieve the desired outcome is counterproductive. The state has incentives in place to adopt heat pumps and it should be the markets decision to embrace or not embrace the technology.

V. Recommendations

Diversified Energy Specialists recommends that the Massachusetts Department of Energy Resources DOER consider implementing the following changes to the APS.

A. Minimum Standard Increase

A one-time increase of 1.5% to the minimum standard in 2022. An increase of 1.5% to the 5.5% under current regulations to 7.0%. The minimum standard increase each year should remain at 0.25%.

B. Cap CHP

A cap on the generation of AECs from CHP. The cap should be set at the number of AECs generated in 2021 from CHP.

C. Increase Biodiesel Cap

The cap on biodiesel should be increased to 30% of the retail electric load from two years prior multiplied by the current year's minimum standard.

D. Increase Biodiesel Feedstock Eligibility

Soy-based biodiesel is a waste product that reduces greenhouse gas emissions by greater than 50% vs. the alternative. The feedstock eligibility should be extended to Soy-based biodiesel.

E. Biodiesel Mandate Provision

If the state of Massachusetts implements a fuel standard that requires a biodiesel blend, the APS program should institute a provision that states: Biodiesel blends must be greater than 10% above the mandated blend to be eligible and only the additional biodiesel will be incentivized, not the mandated biodiesel.

F. Modify Air-Source Heat Pump Eligibility Requirements

Retrofit ASHP must provide 95% of the buildings annual heat load and have a heat-rate capacity at five degrees Fahrenheit of at least 75% of the nameplate capacity of the existing heating source equipment.

G. Review in 2025

The MA DOER should plan another review of the APS in 2025.