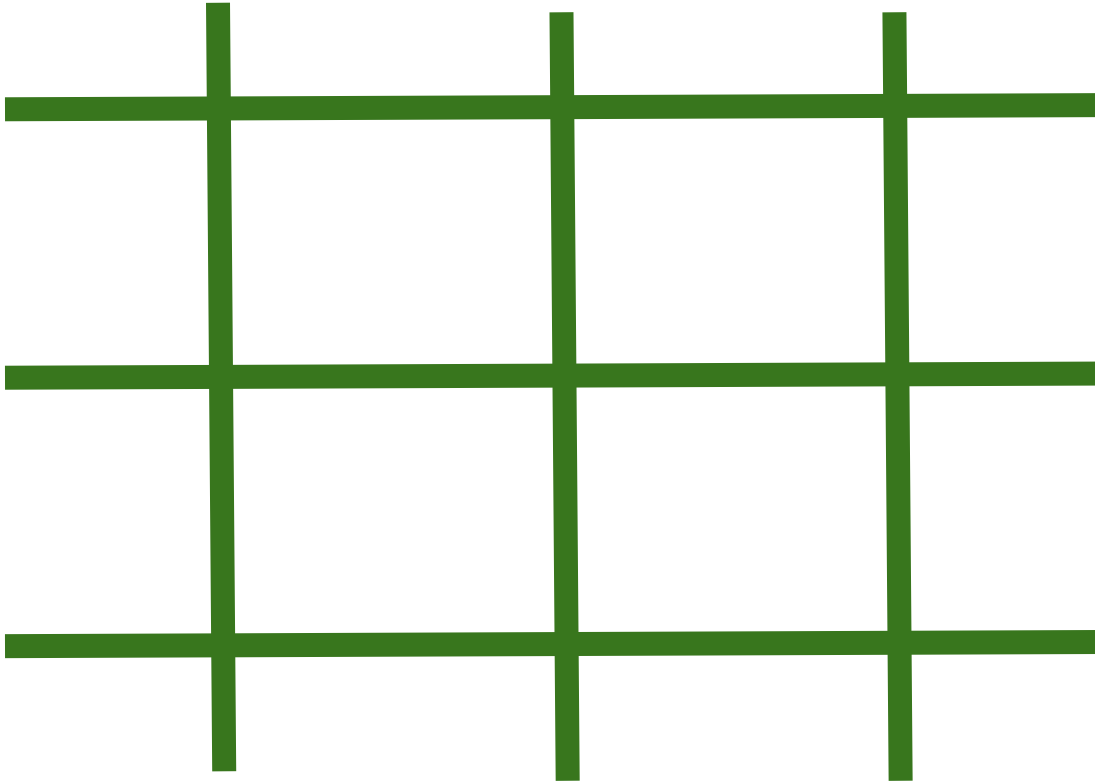


Greening the Grid:

Decarbonizing the Berkshire's Electricity Supply



Megan Powell '20, Evan Wright '21, Louisa Ebby '20, Danielle Moore '20

ENVI 302: Environmental Planning Workshop

Professor Gardner

16 December 2019

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Acknowledgements

We would like to thank our clients Nancy Nylen and Wendy Penner, members of the Williamstown COOL Committee, for their help and direction with our project. We would also like to thank our professor, Sarah Gardner for her guidance and feedback throughout this process. Lastly, we would like to thank all our interviewees for taking the time to talk with us and provide us with valuable insight and expertise.



From left to right: Wendy Penner, Nancy Nylen, Louisa Ebby '20, Evan Wright '21, Megan Powell '20, Danielle Moore '20.

Executive Summary

This report explains Williamstown's residential electricity supply through a municipal aggregation. Williamstown is a member of the Berkshire aggregation, which includes 12 other towns in Berkshire county. As allowed by Massachusetts law, these communities joined together for more purchasing power to sign their own electricity contract, bypassing the utility, and providing their towns with cheaper and greener energy. While this aggregation claims to be 100% renewable, backed up by National Wind renewable energy credits, we examine why this claim has no effect on reducing carbon dioxide emissions. We make recommendations for the future contract of this aggregation to include local renewable energy (by including more Class I renewable energy credits than required by law), directly impacting the electricity mix in New England. This will make the Berkshires more energy resilient and a leader in green energy.

Introduction

Project Overview

The residents of Williamstown currently receive their electricity from a municipal aggregation with 12 other towns in Berkshire County. The contract for this aggregation expires in November 2020. We aim to provide a greener suggestion for the town's next energy contract, which will reduce the town's carbon emissions.

Statement of Purpose

The purpose of our project is to lower Williamstown's contribution to climate change by reducing Williamstown's carbon footprint through increasing the Class I REC content of the Berkshire Aggregation.

Client Goals

Our clients, Nancy Nysten and Wendy Penner, are members of the Williamstown CO₂ Lowering (COOL) Committee. The overall objective of this project is to explore the potential energy options for Williamstown to increase the percentage of clean, local, renewable energy in residents' electric supply. Specifically, our clients were interested in determining the pros and cons of Williamstown remaining in its current municipal aggregation, as its contract is expiring at the end of 2020. We investigated changing the energy mix supplied to residents so that it contains more local, renewable energy, to lessen the dependence on fossil fuels and decrease carbon emissions.

Project Tasks

Our first step consisted of gathering significant background information on the current aggregation contract, case studies of other towns, and potential alternatives for energy sources. Pittsfield, Cambridge, and Newton are three examples of towns within Massachusetts that obtain their energy from greener sources compared to Williamstown. We looked to uncover what the process was for these municipalities. Once we developed a firm understanding, we interviewed key stakeholders in the Berkshire aggregation to gain further insights as well as gauge their opinions on the potential options we have identified. We also spoke with experts and consultants. Through our research, we came up with a range of options varying in price and clean energy sources.

List of studies, reports, websites reviewed

Here is an abbreviated list of laws and documents we reviewed:

General Information/Background

- Global Warming Solutions Act of 2008 (Massachusetts green energy policy)
- Energy Information Agency website (general policy and information)
- Demographics of Williamstown
- COOL Committee Action Plan

Municipal Aggregation

- Massachusetts Municipal Aggregation Policy
- Information about Case Studies
 - Cambridge, MA
 - Newton, MA

- Pittsfield, MA
- Green Energy Consumer Alliance website
- iBerkshire article about Berkshire aggregation

List of stakeholders interviewed

- Jason Hoch, Williamstown Town Manager
- Anne O'Connor, Williamstown Select Board
- Jane Winn, Executive Director, Berkshire Environmental Action Team
- Larry Chretien, Executive Director, Green Energy Consumers Alliance
- Jim McGrath, Pittsfield Open Space, and Natural Resource Program Manager
- Mike Canales, North Adams City Administrator
- Mark Cappadona, President, Colonial Power Group
- Paul Gromer, CEO, Peregrine Energy Group

Research Plan

We split our research into three phases. Phase One consisted of acquiring background information to become knowledgeable about the current aggregation, as well as looking into case studies in other towns to see what has been done. We learned the language of energy policy. We determined questions to ask in informational interviews and conducted these interviews with the stakeholders. The purpose of these interviews was to gain more background information. Phase Two was to research energy options for the town of Williamstown. This could include joining a different aggregation, creating a new aggregation while convincing the communities from the current aggregation to join, or changing the energy mix of the current aggregation. We also

researched the different municipal aggregation consultants in Massachusetts and interviewed some of them. In Phase Three, we devised a report detailing the options that the town of Williamstown and other towns in the Berkshires have for their energy in 2020, including our recommendations.

Background Information

Williamstown Demographics

Williamstown has a total of 1,394 housing units in the town. Of these units, 62% of them are owned by their residents. 84% of units pay extra for their utilities. Thus, the cost of electricity is an important factor for residents. However, only 10% of residents use electricity to heat their homes, so in greening the electricity sources, there will be minimal effect on the emissions from the heating sector.¹

The total population of Williamstown in 2017 was 4,229. 13% are below the poverty line. The median household income is \$70,750. However, should Williamstown opt to join another aggregation with surrounding towns, other demographics will also become important. In North Adams, the neighboring city and a member of the current aggregation, the population is 13,211 and the poverty level is 17.8%, almost 5% higher than in Williamstown and representing a larger amount of people, since the population of North Adams is much larger. The median household income in North Adams is also almost half of that in Williamstown at \$38,774. Therefore, an energy plan for several towns in the Berkshires must be sensitive to these differences.

Williamstown COOL Committee Action Plan

Our clients are members of the Williamstown CO₂ Lowering (COOL) Committee. The committee was formed in 2001, when Williamstown became a member town of the Cities for Climate Protection Campaign. The purpose of the COOL committee is to:

¹ TownCharts, "Williamstown, Massachusetts Housing Data," accessed December 10, 2019, [http://www.towncharts.com/Massachusetts/Housing/Williamstown-CDP-MA-Housing data.html](http://www.towncharts.com/Massachusetts/Housing/Williamstown-CDP-MA-Housing%20data.html).

Promote sustainable living practices in Williamstown in a way that inspires community engagement, prompts individual action, and promotes exchange of ideas and practices in order to reduce greenhouse gas emissions.

In relevance to this project, the COOL Committee action plan stresses the need for greener energy sources. While electricity is only a portion of Williamstown's CO₂ emissions, switching to a greener electricity supply would still reduce these emissions. The plan proposes purchasing green power for the residential sector. It suggests the program New England GreenStart. Under this program, residents can opt to pay just \$0.019 more per kWh for 100% regional renewable energy. This calculates to about \$6 to \$12 more on each household's electricity bill per month, though these figures are from 2010 and may not be accurate any longer. Each kWh of fossil fuel produced electricity emits 1.5 pounds of carbon dioxide into the atmosphere. Joining New England GreenStart would eliminate these emissions from participating households.² This program has already been in effect and residents of Williamstown are already participating. This program had 6% of Williamstown residents participating at its peak.³

Massachusetts Electricity

It is crucial to understand how the Massachusetts electric system works. According to the U.S. Energy Information Administration, most of the electricity that Massachusetts produces is

² Williamstown COOL Committee, "Williamstown COOL Committee Action Plan," last modified December 1, 2010, <http://www.coolwilliamstown.org/content/williamstown-action-plan>.

³ Interview with Wendy Penner of the Williamstown COOL Committee.

coming from nuclear power and renewables. In 2017, the state's energy production estimates came from two sources: nuclear electric power and renewable energy such as solar and wind.⁴ In addition, Massachusetts was the fifth highest state in installed solar generation capacity. However, the state does import a high percentage of its energy from other states and relies heavily on fossil fuels. For example, the 2017 MA energy consumption estimates show that natural gas, motor gasoline, and distillate fuel oil were the top three energy sources. Specifically, the state used about 470 trillion British thermal units (Btu) of natural gas, 310 trillion Btu of motor gasoline, and 140 trillion Btu of distillate fuel oil. On the other hand, renewables accounted for only 10 trillion Btu and nuclear 50 trillion Btu.⁵ The sectors using the most energy were the transportation and residential sectors. By 2018, Massachusetts eliminated its use of coal for energy generation, "making it the third New England state without coal-fired generation."⁶

In the Berkshires, there are a some solar and wind farms, but they are minimal in comparison to the rest of the state. As a result, the Berkshires are reliant on energy from sources in Eastern Massachusetts and the rest of New England.

Importance of Green Laws

All of Massachusetts's energy policy is shaped by the Global Warming Solutions Act of 2008. This piece of legislation aimed to reduce the state's greenhouse gas emissions by 10-25% compared to the levels in 1990. The Massachusetts Department of Environmental Protection (DEP) is responsible for implementing and enforcing the act. The recommendations included in

⁴ U.S. Energy Information Administration (EIA), "Massachusetts Energy Production Estimates, 2017: Massachusetts State Profile and Energy Estimates," accessed December 10, 2019, www.eia.gov/state/?sid=MA#tabs-3.

⁵ U.S. Energy Information Administration (EIA), "Massachusetts Energy Consumption Estimates, 2017: Massachusetts State Profile and Energy Estimates," accessed December 10, 2019, www.eia.gov/state/?sid=MA#tabs-1.

⁶ Ibid.

the original legislation are for the state and its agencies to support a reduction of energy use, increase efficiency, and encourage renewable sources of energy in energy generation, buildings, and transportation.⁷

The 2018 10-year progress report highlights the success of the bill in reducing greenhouse gas emissions. Overall, the state has been reducing its greenhouse gas emissions, reducing energy usage, and electrifying transportation on schedule. The Massachusetts government has done this by increasing the energy efficiency of buildings, electrifying vehicles and thermal conditioning in buildings, and replacing fossil fuel sources with renewable energy. So far, carbon dioxide emissions from power plants have gone down 40% since 2007, and they are expected to go down another 30% between 2021 and 2030.⁸ Furthermore, the statewide greenhouse gas inventory went down about 22% from the 1990 levels, even though the state's population grew 13%. So far, the act has been quite successful in setting emissions standards. It has forced the energy and industrial sectors to change their practices to decrease their impacts on the environment.

In addition to the Global Warming Solutions Act, Massachusetts was one of the first states to create a Renewable Portfolio Standard (RPS). The RPS requires utilities and competitive suppliers who provide electricity to have a certain percentage of their energy mix derived from renewable energy sources. Suppliers can achieve this through the purchase of renewable energy credits (RECs). This program began in 2003, requiring 1% of the energy mix to be renewable and has now increased to 14% in 2019.⁹

⁷ Commonwealth of Massachusetts, "Global Warming Solutions Act 10 Year Progress Report," last modified April 2, 2019, www.mass.gov/files/documents/2019/04/02/GWSA-10-Year-Progress-Report.pdf?_ga=2.267580430.161729377.1570121026-1181430166.1567386226.

⁸ Ibid.

⁹ Renewable Energy Division of the Massachusetts State Government, "Program Summaries: Summaries of all the Renewable and Alternative Energy Portfolio Standard programs," Mass.gov, accessed December 10, 2019, www.mass.gov/service-details/program-summaries.

Municipal Aggregation

Municipal aggregation has been allowed by law in Massachusetts since 1997 when "An Act Relative to Restructuring The Electric Utility Industry in the Commonwealth, Regulating the Provision of Electricity and Other Services, and Promoting Consumer Protections Therein," was passed.¹⁰ The law allows the town to devise its own contract for energy supply with a competitive supplier, instead of receiving their supply from the utility. The town can partner with other towns to form an aggregation with competitive pricing. The aggregation then provides electricity to residents. Participation is voluntary and residents can opt in or out at any time. If customers decide, they may still purchase electricity from the utility or from another competitive supplier and choose not to purchase from the aggregation. Towns decide to form aggregations to provide both cheaper and greener energy to their residents than the utility offers.¹¹

The process for creating an aggregation has four main steps. The first step is to have the municipality vote to create an aggregation. For Williamstown, this occurred as a vote by the selectboard. Then the town, in conjunction with a consultant and the Department of Energy, creates a plan for this aggregation. Next, the municipality can review the plan. Finally, the plan is submitted and approved by the Department of Public Utilities.¹²

¹⁰ Department of Energy Resources of Massachusetts, "Guide to Municipal Electric Aggregation in Massachusetts," accessed December 10, 2019,

http://www.ocpcrpa.org/docs/comprehensive/MA_DOER_Guide_to_Municipal_Aggregation.pdf

¹¹ University of Massachusetts, Amherst. "Municipal Aggregation." The Center for Agriculture, Food, and the Environment. Last modified August 30, 2018. <https://ag.umass.edu/clean-energy/municipal-aggregation>.

¹² Department of Public Utilities of Massachusetts, "Municipal Aggregation," Mass.gov, accessed December 10, 2019, www.mass.gov/info-details/municipal-aggregation.

The Berkshire Aggregation

Williamstown is a part of an aggregation with twelve other towns in the Berkshires including Adams, Cheshire, Clarksburg, Dalton, Florida, Lenox, Monterey, New Marlborough, North Adams, Sheffield, and West Stockbridge.

Residents in these Berkshire towns are automatically enrolled in the aggregation and then can opt out at any time. Customers participating in the aggregation continue to pay National Grid or Eversource, the utility, for energy delivery. For energy supply, they also pay the utility, and utility then pays Public Power, the supplier of choice for the aggregation, for their share of the energy bill. Participants in the aggregation with solar panels receive the net metering credits for the energy that they produce for the grid.

Colonial Power Group is the consulting group that manages this aggregation. The current rate is \$0.10708/ kWh. In the aggregation, prices lower than the prices the utility offers are not always guaranteed, but the goal is to have the aggregation be net cheaper in the long run than the utility's price for electricity. There are no penalty charges for opting in or out of the aggregation, but if customers do not pay the bill for the aggregation, they may be put back on the utilities supply.¹³

We received the Competitive Electric Service Agreement between Public Power and Williamstown from Jason Hoch, the Williamstown town manager. In the contract, it states that the electric service agreement "may be extended beyond the termination date...by mutual, written agreement of the Parties."¹⁴ However, when the contract is up, there is no penalty should Williamstown want to devise a new agreement. The contract only includes one paragraph about

¹³ Colonial Power Group, "Williamstown Community Choice Power Supply Program," accessed December 10, 2019, <https://colonialpowergroup.com/williamstown/>

¹⁴ Competitive Electric Service Agreement Between Public Power, LLC and Town of Williamstown, pg.10.

renewable energy supply. It states that the supplier will provide renewable energy in accordance with the Massachusetts Renewable Portfolio Standards or “pay all penalties imposed by the Department related to Renewable Energy requirements.”¹⁵ It also states that the supplier will “purchase National Wind RECs for a total amount equal to 100% Renewable Energy.” However, it is up to the supplier to determine the credibility of these RECs. Thus, there is no accessible information as to what they are, where they come from, or who certified them.

¹⁵ Ibid., pg. 32.

Renewable Energy Credits (RECs)

A renewable energy credit is a certificate created for every megawatt hour of renewable energy produced. This credit, or REC, can then be purchased by a utility or competitive supplier. Thus, the environmental impact of electricity production is bought and sold separately from electricity. In evaluating the effect of a REC, it is important to consider when and where it was created, and the market it is created in. In Massachusetts, RECs can be classified as Class I, meaning they come from a source created after 1997 and contribute electricity from a renewable source to the New England grid.¹⁶ According to Massachusetts' Renewable Energy Portfolio Standard (RPS), in 2019, all electricity suppliers must source 14% of their electric load from Class I RECs.¹⁷ This amount required will increase by 2% every year from 2020 to 2029.¹⁸

There are approximately 140 cities and towns in Massachusetts with an aggregation plan in place. A Green Municipal Aggregation (GMA) is a model of aggregation in which the default option for all participants includes a commitment to at least 5% additional Massachusetts Class I RECs than the minimum percentage required by the state's RPS (Figure 1). Looking at the state of Massachusetts, no town in Berkshire County can be considered a green municipal aggregation. Williamstown and all members of the Berkshire Aggregation are marked brown on the map because their energy contains no more additional Class I content than required by law. Pittsfield is a light shade of green because it has 1% more Class I RECs than required by law.

¹⁶ Renewable Energy Division, "Program Summaries," Mass.gov, accessed December 10, 2019, www.mass.gov/service-details/program-summaries.

¹⁷ Department of Energy Resources of Massachusetts, "Renewable Energy Portfolio Standard – Class I," accessed December 10, 2019, <https://www.mass.gov/doc/225-cmr-14-renewable-energy-portfolio-standard-rps-class-i/download>.

¹⁸ Interview with Larry Chretien of Green Energy Consumers Alliance.

The aggregations in dark green are considered Green Municipal Aggregations because they have more than 5% additional Class I RECs than required by law. These aggregations are driving demand for new, in-region renewables, incentivizing the transformation from fossil fuel generate to renewable power that is necessary to combat climate change. As many of these communities have demonstrated, it is possible to deliver Class I RECs to residents affordably-- often at a lower price than the utilities' basic service rate--through leveraging their purchasing power during negotiations.¹⁹

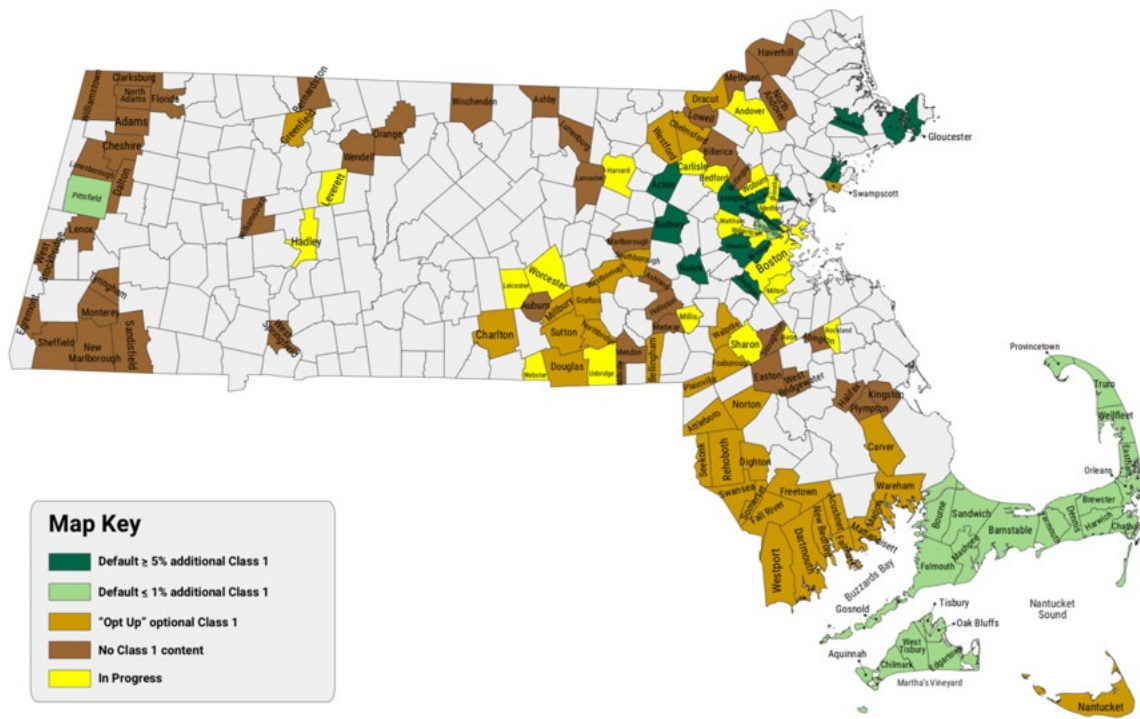


Figure 1: Map of the Aggregations of Massachusetts and their incorporations of Class I RECS²⁰

The Berkshire Aggregation’s current electricity supply claims to be 100% renewable, including 77% National Wind RECs. However, a National Wind REC is not a Class I REC. It

¹⁹ Chretien, Larry, Gibbons, Eugenia T., and Reid-Shaw, Indiana, “Green Municipal Aggregation in Massachusetts,” Green Energy Consumers Alliance, accessed December 10, 2019, <https://cdn2.hubspot.net/hubfs/260434/State%20of%20GMA%20Report%20FINAL.pdf>.

²⁰ Ibid.

typically comes from states such as Texas or Pennsylvania where wind is financially viable. In these places, it is profitable to create wind projects, so wind is competitive with natural gas and other fossil fuels. These RECs are cheap, but they do nothing for the renewable energy supply in New England. There is no wire from Texas to Williamstown, so by purchasing this REC, Williamstown is not getting this renewable energy from Texas. Instead it is just purchasing the credit for it. A National Wind REC does not decrease the amount of fossil fuels in the New England grid or in Texas. A National Wind REC also does not increase additionality, since it is relatively cheap to build these projects, they would exist with or without the purchase of a REC. It does not incentivize new projects, since a REC on the national market can also come from a project in an area with a weak state RPS mandate. Renewable energy development in Texas has surpassed its RPS mandate, and so voluntary purchases of Texas RECs do not push renewable energy development forward.²¹ RECs from places like Texas are overabundant and cheaper than New England RECs, and many competitive suppliers have taken advantage of this situation. Competitive electricity suppliers can offer electricity at a low rate and claim to offer a “green” product through purchasing RECs on the national market. Purchasing these RECs does not make a difference in reducing carbon dioxide emissions because the projects are financially feasible even without REC revenue, and so it is not shifting the New England grid away from fossil fuels.²² Given that REC revenue is not necessary for projects’ financial feasibility in Texas, it is not shifting Texas’s grid away from fossil fuels either. Electricity suppliers are marketing their product as environmentally friendly when in reality the purchase of the RECs does not provide a benefit for the environment or a reduction in emissions.²³

²¹ Ibid.

²² Interview with Larry Chretien of Green Energy Consumers Alliance.

²³ Ibid.

The Importance of Class I RECs

A Class I REC, on the other hand, comes from a source which regionally produces renewable energy for the New England grid. It helps promote the introduction of renewable projects in the grid, therefore directly decreasing the supply of fossil fuels used for electricity in New England. Class I RECs are more expensive because the cost of entry is higher in New England. However, they increase the amount of renewable energy produced.

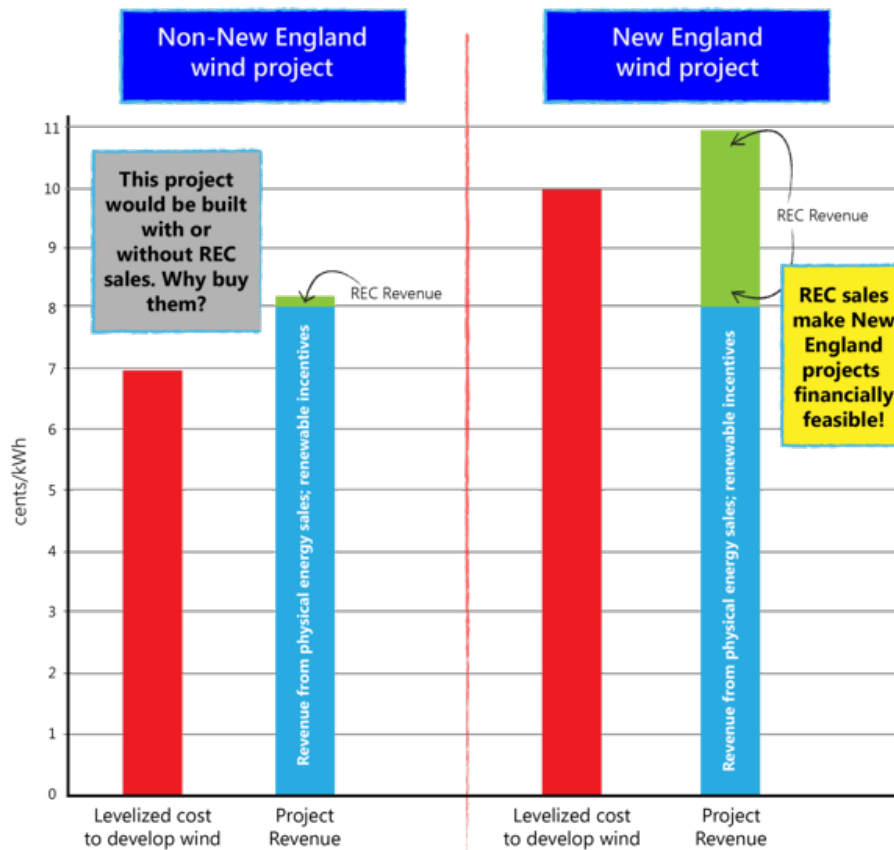


Figure 2: Class I RECs Diagram ²⁴

Figure 2 from Green Energy Consumers Alliance displays the importance of Class I RECS as opposed to national RECs. As you can see in the column for a Non-New England wind

²⁴ Kidwell, Katy, "Why Buying New England Class I RECs Is The Only Way To Make The Switch," Green Energy Consumers Alliance, last modified December 9, 2015, <https://blog.greenenergyconsumers.org/blog/class-i-recs>.

project, the revenue is already above the cost of creating the project. Therefore, the project would exist with or without the purchase of a REC. However, looking at the New England wind project, without the REC revenue, the revenue would be below the cost. This project could not be created without the assistance of RECS, which cause the revenue to exceed the cost.

In addition, Massachusetts requires utilities to provide a certain percentage of Class I RECs as part of their energy mix. This mandate will increase by 2% each year from 2020 to 2029. However, that is not nearly fast enough to encourage renewable energy production at the rate needed to combat climate change. If municipalities buy up more Class I RECs than required by law, this means utilities must find other projects to buy RECs from. This then increases demand and encourages more projects to be built, which is the goal of greening the electricity grid.²⁵

As Class I RECs are more expensive than national wind RECs, incorporating additional Class I RECs will likely mean that the Berkshire's aggregation's energy plan may no longer be considered 100% renewable. It will likely be difficult to explain to the public as well as to stakeholders that this in fact is greener than our current plan. The big takeaway that we have learned through our research is that greenness is not measured by the percentage of renewable energy credits a plan has, but rather by the amount of Class I RECs. Our current aggregation can only be considered a green aggregation if it incorporates 5% or more additional Class I RECs than is required by state law.

²⁵ Interview with Larry Chretien of Green Energy Consumers Alliance.

Consultants

Overview

Consultants bundle the residential, commercial, and municipal energy usage into a single load purchasing bid for electric supply. After bargaining with energy suppliers in the market, they then provide options in pricing and energy mix to the aggregations. Additionally, consultants interact with state agencies such as the DPU and have other managerial duties. Consultants play a very important role in the process of determining the energy portfolios of the aggregations, and as such it is imperative that the aggregation hire a consultant that will advocate for what they want and be transparent about their options.

Colonial Power Group

Colonial Power Group is the current consultant of the Berkshire aggregation and Pittsfield. When speaking with Mark Cappadonna, the president of Colonial Power, it became clear that he had a different opinion concerning the significance of Class I RECs than we had come to understand. Cappadonna believes that the amount of energy projects that exist in Massachusetts is determined by the state, and that buying additional Class I RECs does not increase additionality. As a result, he promotes energy plans to aggregations that are marketed as “100% green” but are comprised mostly of national wind RECs. From speaking with experts in the energy fields as well as other consultants, we strongly believe that Cappadonna’s opinion stands alone and that buying additional Class I RECs does increase the amount of renewable energy projects in the grid. Buying national wind RECs, however, has no impact on the number of renewable energy projects in existence, and is thus not a green option. Cappadonna stated to us that if an

aggregation was set on incorporating Class I RECs into their energy mix, Colonial Power would help them do so. There was recently a big push in Pittsfield to increase Class I RECs in their energy contract, and Colonial Power marketed the change as a 25% increase in more solar RECs than required by state law. Looking at the actual numbers, however, reveals that this was only a 1% increase in Class I RECs, since state law requires 4% Class I solar RECs. Through marketing, the plan was made to seem greener than it is. Solar RECs are especially expensive in Massachusetts compared to other types of Class I RECs, and it remains unclear whether this plan was really the most efficient allocation of funds, or if it was simply the easiest to market as green.

Peregrine Energy Group

There are two other consultant groups in Massachusetts who work with aggregations and promote Class I RECs. We spoke with Paul Gromer, the founder and CEO of Peregrine Energy Group, who expressed his interest in working with the Berkshire aggregation. Gromer spoke to us about the potential challenges in convincing aggregations that greenness is not measured by the total percentage of RECs, but specifically by the amount of Class I RECs in the energy make-up. While Peregrine Energy group will work with communities that are well educated in the importance of Class I RECs to include more local renewable energy, they also promote 100% renewable energy plans largely composed of national wind RECs that are equivalent to the ones that Colonial Power sells to other aggregations. We believe Peregrine Energy Group will provide the Berkshire aggregation with a green energy plan that involves additional Class I RECs if the aggregation were to advocate for this plan. If the aggregation did not request additional Class I

RECs, then Peregrine Energy Group may provide a 100% renewable mix that is similar to aggregation's current plan.

Good Energy

Good Energy is the consultant group that most strongly advocates for Class I RECs. They are partnered with the Green Energy Consumers Alliance, a nonprofit dedicated to helping aggregations in Massachusetts become green. They have also developed a green energy model that predominates in the state, where a green aggregation is defined as having 5% or more additional Class I RECs than mandated by state law. Good Energy has worked with nearly 50 municipalities in Massachusetts and has shown that green plans can be achieved with little to no increase in cost compared to the utilities basic service.

Case Studies

Cambridge

Cambridge, Massachusetts operates under the Cambridge Community Electricity program, an aggregation which supports the implementation of local renewable energy sources. All new customers are automatically enrolled in the Cambridge Community Electricity program unless they choose to opt out. Like in other aggregations, the city chooses their electricity supplier, but the local utility (in this case Eversource) is responsible for delivery. Participants in the program are offered two options: Standard Green or 100% Green Plus. Standard Green is the default offering, where participants receive the minimum amount of renewable energy required by the state, all from projects in New England. Participants also contribute directly to the development of a new solar project in Cambridge through an additional charge of \$0.002/kWh and will receive additional renewable electricity from the new solar project above the state-required minimum once it is up and running. The new solar project will bring new renewable energy to the grid, displacing fossil fuel power production. The price for Standard Green stands at 11.12 cents per kWh for January 2019 to January 2021.

Residents may instead choose to participate in the 100% Green Plus program, where they will receive 100% renewable energy all from projects in New England by having 100% Massachusetts Class I renewable energy certificates (RECs) purchased on their behalf. Like with Standard Green, participants of 100% Green Plus are also charged \$0.002/kWh that contributes directly to the development of their new solar project in Cambridge and will receive renewable electricity from the project once it is operational.

The price for 100% Green Plus stands at 11.94 cents per kWh for January 2019 to January 2021, while the price for Standard Green is 11.12 cents per kWh for the same timeframe.

The program prices for both Standard Green and 100% Green Plus apply only to the electricity supply portion of the Eversource electricity bill. The Eversource Basic service is priced at 10.836 cents per kWh for residential establishments. One may opt out of the program at any time with no penalty.²⁶

Newton

As of March 2019, Newton, Massachusetts, is powered by an electricity aggregation program called Newton Power Choice. All new electricity accounts in Newton will be automatically enrolled into Newton Power Choice unless they choose to opt out. The program offers three different choices for participants: Standard Offering, 100% Green, or Basic. Standard Offering is the default offering, where participants buy renewable electricity that matches 46% of their electricity use in addition to the 14% minimum required by state law. As such 60% of a customer's total energy would come from Massachusetts Class I RECs. This is the highest amount of Class I RECs of any community electricity aggregation program in Massachusetts, although we learned from Larry Chretien of GECA that it was possible to achieve this incredibly high percentage of Class I RECs in part due to the low REC prices at the time of Newton's bid.²⁷ The 100% Green option involves buying 86% of one's electricity from recently built New England renewable sources in addition to the 14% minimum required by state law. Finally, the basic option only requires participants buy the minimum 14% from renewable sources as required by Massachusetts state law. The basic option is different from Eversource's Basic Service as it is specific to Newton Power Choice. All of the program options purchase renewable

²⁶ Massachusetts Power Choice, "Cambridge Community Electricity Program," MassPowerChoice.com, accessed December 10, 2019, masspowerchoice.com/cambridge.

²⁷ Interview with Larry Chretien of Green Energy Consumers Alliance.

electricity from New England-based renewable energy projects, and participants can leave or switch programs at any time with no penalty. The Standard Offering charges 11.34 cents per kWh, the 100% Green Option charges 11.75 cents per kWh, the Basic Option costs 10.87 cents per kWh, and the Eversource basic service costs 10.836 cents per kWh.²⁸

Of the 140 cities and towns in Massachusetts that have aggregation programs, only 40 provide electricity from renewables above the state requirements, and of those 40, none come close to the 60% standard offering of Newton Power Choice. Most of the others provide an additional 1% or 5% above the mandate, according to the Ruthanne Fuller, the mayor of Newton. Fuller states that at the beginning of the program, Newton customers will be saving around \$16 per month compared to the Eversource Basic Service rate. Newton's electricity contract price will remain fixed for 22 months, while Eversource's Basic Service Rate for residential customers changes every six months, and as such it impossible to say that participants will continue saving this much throughout the whole contract term. However, participants can always switch back to Eversource's basic service at any time at no additional cost. Fuller asserts that "municipal aggregation is far and away the most effective tactic a community can use to encourage the development of renewable power," as it is a much better option for electricity customers than many alternatives that fluctuate in price or have significant cancellation fees, and it puts the power in the hands of communities to do something against climate change rather than relying on the federal government.²⁹

²⁸ Massachusetts Power Choice, "Newton Power Choice," MassPowerChoice.com, accessed December 10, 2019, masspowerchoice.com/newton.

²⁹ Fuller, Ruthanne, and Ann Berwick, "Municipal Electricity Aggregation Really Works," *Commonwealth Magazine*, last modified December 29, 2018, commonwealthmagazine.org/opinion/municipal-electricity-aggregation-really-works/.

Pittsfield

In Berkshire County, Pittsfield's municipal aggregation agreement outlines a possible way forward in greening our power sources, as well as a cautionary tale. Unlike the Berkshire Aggregation, the City of Pittsfield Community Choice Power Supply Program only includes the city of Pittsfield. It serves over 44,000 consumers,³⁰ and is, according to Mayor Linda Tyler, both cheaper and more environmentally friendly than the old power purchasing plan.³¹

The city started exploring its options in 2016, holding public meetings to educate people and hear their concerns.³² Like other cities, Pittsfield had to go through an aggregation process. They worked with Colonial Power Group, a municipal aggregation and energy consultant, to apply for approval from the Massachusetts Department of Public Utilities and to bid on electricity suppliers.³³ Pittsfield's municipal aggregation took effect on January 1, 2018.

What is the program that Pittsfield has implemented? Before the aggregation, Pittsfield was served by Eversource, the local utility company that owns the lines and delivers the power in the area. Most consumers paid for the Eversource Basic Plan, which charged a rate that changes every six months depending on the electricity markets. As of late 2017, the rates were \$0.0856 per kilowatt-hour for residences and \$0.0931 per kilowatt-hour for small businesses. However, they rose to \$0.1064 and \$0.1156 in 2018. By forming a municipal aggregation, Pittsfield was able to avoid this increase, instead of locking in a rate of \$0.0998 per kilowatt-hour for both residents and small businesses for the next three years. Instead of having Eversource both supply and deliver power to the City of Pittsfield, the city switched to a supplier called NextEra Energy

³⁰ Colonial Power Group, "City of Pittsfield Community Choice Power Supply Program Draft Aggregation Plan," accessed December 5, 2019.

³¹ Drane, Amanda, "Pittsfield Explains New Electricity Aggregation Agreement," *The Berkshire Eagle*, last modified November 28, 2017, <https://www.berkshireeagle.com/stories/pittsfield-explains-new-electricity-aggregation-agreement,525727>.

³² Colonial Power Group, "City of Pittsfield Community Choice Power Supply Program Draft Aggregation Plan."

³³ *Ibid.*

Resources, with whom they were able to negotiate a lower rate. Eversource will continue to be responsible for energy delivery, including power line maintenance, billing, metering, and other tasks.³⁴

It is clear that the objective of Pittsfield's aggregation is to lower costs to consumers. Nowhere in the goals outlined in the full aggregation plan is there mention of any environmental objectives.³⁵ Nevertheless, the Community Choice Power Supply Program is greener than the Eversource Basic Plan. 5% of Pittsfield's electricity comes from Class I solar RECs, which is 25% more than the state minimum standard of 4% Class I solar RECs.³⁶ However, as discussed in the *Consultants* section of this report, this translates to only 1% more Class I RECs than the state minimum. This makes Pittsfield the greenest aggregation in Berkshire County but not nearly as green as many of the other aggregations in the state.³⁷ For further discussion of the relationship between Colonial Power and Pittsfield, see the paragraph on Colonial Power in the *Consultants* section.

Pittsfield's contract is up for renewal in January 2021, the same time as the Eversource municipalities in the Berkshire Aggregation. There has been discussion about possibly including Pittsfield in the Berkshire Aggregation, but no decision or timeline has been reached. We hope and expect that discussion continues between municipal aggregation leaders in Berkshire County about combining these two aggregations.

³⁴ Colonial Power Group, "City of Pittsfield Community Choice Power Supply Program Draft Aggregation Plan."

³⁵ Ibid.

³⁶ Drane, Amanda, "Pittsfield Explains New Electricity Aggregation Agreement," <https://www.berkshireeagle.com/stories/pittsfield-explains-new-electricity-aggregation-agreement,525727>.

³⁷ Chretien, Larry et al.

Interviews with Stakeholders

Meeting with Jason Hoch, Williamstown Town Manager

On Thursday, October 17, we met with Jason Hoch, the Williamstown Town Manager, who is charged with signing the town's new energy contract when it expires in November 2020. Our aim was to better understand the current aggregation, residential participation, and what he envisions in terms of energy for Williamstown. We learned that the aggregation of 13 towns and cities was formed prior to Jason becoming town manager in 2015. While he did not have any specific information on New England GreenStart, an alternative energy program in the aggregation, he mentioned that he was involved in encouraging more residents to have home solar through Solarize to reduce the town's carbon emissions. Jason's main concern was how the municipal aggregation could make the citizens of Williamstown greener, and suggested that greening the municipal aggregation was a way to target residents who may not be so educated on the issue. He emphasized that price would be a major determining factor in any future plan. As Williamstown is the wealthiest town in the aggregation, he suggested that we consider the impacts of raising energy prices upon the other towns. Jason stressed his hesitation to consider any option that would include Williamstown leaving the current Berkshire aggregation and forming a new one. He explained that he did not want to abandon the other towns and also expressed concerns about the costs involved in creating a completely new contract, which would be a time-consuming and expensive endeavor. Instead, he shared his desire of wanting Williamstown to be a leader in the Berkshire aggregation in terms of promoting green solutions.

Jason stated that it would be unlikely for the town to add more energy projects and generate its own electricity through large facilities because our transmitters cannot currently

support more electricity unless upgraded. Therefore, if we want to incorporate more Class I RECs, we would be reliant on obtaining local energy from the New England area instead of in the town itself. Ultimately, he believes that the current aggregation contract would likely be renewed unless we come up with a feasible alternative. He explained that the town does not vote on the contract, and that he alone signs it. However, if there were major changes to the current contract, he would likely want to engage the selectboard in a conversation before signing.

Meeting with Jane Winn and Logan Malik, Berkshire Environmental Action Team

On Thursday, October 25, we drove to Pittsfield to meet with Jane Winn and Logan Malik of the Berkshire Environmental Action Team (BEAT). Jane is heavily involved in environmental issues in the Berkshires, as she is the leader of BEAT and part of the Pittsfield Green Commission. Our goal was to ask her questions about her work in Pittsfield, since she helped the city develop its current aggregation that has a 1% additional Class I RECs than is required by state law.

In speaking with Logan and Jane we learned more details about Class I RECs and how important it is to support local renewable energy projects. She pushed for 5% additional Class I RECs in Pittsfield when the city was forming its aggregation. When the contract was up for discussion, Jane's main opposition came from Mark Cappadonna of Colonial Power Group, the current energy consulting firm for the aggregated Berkshire municipalities. According to Jane, Mark supports out-of-state wind instead of regional, Class I RECs. Jane also spoke to us about her support for the Green Energy Consumers Alliance, and how she really believes that Class I RECs are the best solutions as they add regional capacity and promote the building of new renewable energy infrastructure. She suggested that we turn towards the youth and environmental groups in Williamstown to help push for a change to the aggregation once we

finish our project to keep the momentum going. Since all the Berkshire municipalities' contracts are expiring at the same time, Jane stressed that we need to act now to convince the stakeholders to change their utility contracts.

Meeting with Mark Cappadonna and Denise Allard, Colonial Power

On November 7, we spoke with Mark Cappadonna and Denise Allard from Colonial Power group, which currently works with the Pittsfield and Berkshire aggregations. As the consultant group, Colonial Power bundles all residential, commercial, and municipal energy usage into a single group purchasing bid for electric supply. Many of the local town managers have an existing relationship with Colonial Power and Cappadonna. When asking Cappadonna and Allard if they could explain to us what Class I RECs are and their significance, we were struck by their response. According to them, Class I RECs do not create additionality because state incentives (and not the additional purchase of more Class I RECs) drive new REC projects. Although they do agree that buying Class I RECs increases local jobs, they did not think that the purchase would lead to the building of new renewable projects because the marketplace is manipulated by the state, which sets rules and regulations that determine the projects. This differs significantly from all the other information we have come across and people we have talked with, and thus we believe that this is simply one opinion that stands alone. However, Cappadonna did say that there is a large market that exists for RECs and that they could deliver whatever composition of energy we would want, as the options that exist are quite easy to acquire. However, the fact that Colonial Power does not believe in the importance of Class I RECs may result in them promoting a plan for Williamstown that is not as renewable or progressive as we had intended.

Pittsfield is an example of what could happen if Williamstown remains with Colonial Power. The city recently made a push to add more class I RECs, and Cappadonna said that they selected a program that includes 25% more solar renewable energy certificates than required by the commonwealth of Massachusetts. In reference to Pittsfield, Cappadonna has stated that “the city’s program is as green as anyone in the state.”³⁸ What Colonial Power failed to mention however, is that when looking at the actual numbers, the state requires 4% solar RECs, and so an increase of 25% of solar RECs required by the state is actually a 1% increase. The consultant group has marketed this to make it seem that Pittsfield is greener than it is, and it is unclear how much the people of Pittsfield are aware of this. Pittsfield’s plan is also curious because solar projects are especially expensive in Massachusetts compared to other Class I RECs, and it is unclear whether the plan really was the most effective way to spend the town’s money. This goes to show that even if Williamstown and other members of the aggregation push for more class I RECs to be incorporated into their energy mix, there may be little change that takes place if aggregation chooses to remain with Colonial Power.

Meeting with Paul Gromer, Peregrine Energy Group

On November 14, we interviewed Paul Gromer, the founder and CEO of Peregrine Energy. Peregrine Energy is a different energy consulting firm that works with some of the greenest aggregations in the state, including Cambridge. When we asked him if he could explain to us the differences in types of RECs, he immediately explained that Class I RECs from within New England create additionality by increasing the value of renewable energy projects that increases

³⁸ McKeever, Andy, “Pittsfield Program Eyed to Provide Relief to Electric Customers,” iBerkshires, last modified November 28, 2017, <https://www.iberkshires.com/story/56128/Pittsfield-Program-Eyed-To-Provide-Relief-To-Electric-Customers.html>

demand and pushes for more projects to get built, while the purchase of national wind RECs does not do this. This is in line with our research and what other experts in the energy field have taught us. When we asked about the difficulties in conveying the significance of Class I RECs to the public, Gromer spoke to us about Lexington, one of the towns he works with. They chose to do a mix of Class I and national wind RECs in order to still be considered 100% renewable, as they thought this would be easiest to explain to the public. Gromer also informed us that not all communities within an aggregation need to have the same make-up of RECs, and that Williamstown could decide to go for more Class I RECs than another town in the same aggregation. This was new information to us that we have shared with the town managers of the Berkshires as a potential option.

Meeting with Larry Chretien, Green Energy Consumers Alliance

On October 31st, we interviewed Larry Chretien, the director of Green Energy Consumers Alliance, who has a deep knowledge of municipal aggregation policy and strategy. We also had our client Nancy as well as the Williamstown town manager, Jason Hoch, on the call. Our main objective was to have Larry explain to all of us on the call about why we should invest in Class I RECs rather than in national wind RECs. We also learned that communities can possibly switch consultants without reapplying for approval with the state, thereby avoiding the process. We asked Larry about specific consultants, and he believes that Colonial Power Group, Berkshire County's current municipal aggregation consultant, does not put much effort into acquiring additional Class I RECs, and that Good Energy would be the best option for doing this. Larry also informed us that we will not be able to get price information for this project, as the energy

market is highly volatile and nearly impossible to predict from the outside. Overall, this meeting was incredibly useful, especially as it brought people together to share relevant information.

We have since spoken to Larry many times, as he is a very knowledgeable ally for our project. He was especially helpful in preparing for our final presentation. We also had him on a video call during the presentation so that town managers would have the option to ask questions to an expert in greening municipal aggregations.

Meeting with Jim McGrath, North Adams Town Manager

On October 31st, we also spoke with Jim McGrath, the Public, Open Space and Natural Resource Manager from Pittsfield. Pittsfield is its own aggregation, and McGrath explained to us that there was a big push to include Class I RECs in Pittsfield which resulted in 25% more solar RECs than required by state law. During the process, he also learned that very few people of the community are aware of these types of changes despite the press releases, radio shows, and public meetings that were held. Although everyone was notified with a letter from the Department of Public Utility, McGrath said he received only one or two phone calls or emails from residents about this change to the aggregation. He stated that the people are only interested in the fact that the plan is green and that they are saving money compared in the long run compared to the basic utility rate. He believes that the size of Pittsfield had a significant influence in the pricing options they received, and he told us that he has had conversations about potentially joining with the Berkshire aggregation in the next contract in order to increase the size even more. McGrath emphasized that while he would like to make the aggregation greener, it still must be saving residents money to ensure that they do not opt out from the aggregation and so the aggregation can be successful. McGrath encouraged us to speak with Mark

Cappadonna from Colonial Power Group, the consultant of both Pittsfield and Berkshire aggregation, and inquire about the potential options that might become available if the two aggregations were to merge.

Meeting with Anne O'Connor, Williamstown Selectboard Member

We met with Anne O'Connor on November 14th. Anne is a select board member and environmentalist who has been in communication with Jason and us about this project. We spoke with her to understand the local government side of our project. She informed us that Williamstown has a strong town manager style of government, where the select board does not have many duties, and they also rarely have split votes.

Meeting with Mike Canales, North Adams Administrative Official

We spoke with Mike Canales on November 21st in the North Adams City Hall. He described to us the process that took place when forming the Berkshire aggregation in 2015, and how the City of North Adams led the way. As more towns have been added to the Berkshire aggregation, North Adams continues to lead, and many of the other towns trust Canales to make good decisions for the future contract. He also confirmed that he has been speaking with Pittsfield and consultants from Colonial Power about potentially having Pittsfield join the Berkshire aggregation in the future, which would double the current load. Canales said that the main obstacle to providing cheaper prices is the size of the current aggregation's load, and the addition of Pittsfield would greatly increase the aggregation's purchasing power and likely go a long way in providing more options.

Mike seemed a little confused about the goals of our project at first, as he believed the current contract to be green due to it being considered a 100% renewable plan. At the time that

the aggregation was formed, his main concerns were getting the best price for a 100% renewable product for the aggregation. The current contract has allowed the aggregation to remain competitive with the basic service rate, while also being considered 100% renewable. As a result, the towns in the aggregation were willing to pay more to get what they perceived to be a green plan. When we began to explain the differences between national wind RECs and Class I RECs, he was very interested to learn more and asked us for additional resources, which we provided.

Policy Analysis

We have evaluated options for greening our municipal aggregation by analyzing each proposal's economic, political, and environmental costs and benefits. Specifically, we have four options of Class I REC makeup, and three options for consultants. Together, there are twelve different options the aggregation could take moving forward. In this analysis, we are giving the largest weight to economic and environmental impacts since our stakeholders are concerned about protecting the environment and/or having an affordable price for their energy. We have created evaluation matrices where we have analyzed each of three consultant options and the four REC options. The goal of the matrixes is to present multiple feasible recommendations that a stakeholder can consider when evaluating their next energy contract.

Economic Impacts

For the economic impacts, we considered the factors that impact cost and where the RECs will come from. For RECs, we value regional, defined as from New England, more than RECs from outside the region. We are supporting these because they help the regional economy, decrease fossil fuel reliance, increase regional resiliency, and promote energy independence. In other words, our economic concerns are not simply just upfront costs, but also the economic benefits such as jobs. Unfortunately, one economic concern that we cannot confirm is the cost of each proposal. All the stakeholders we talked to agreed that the kilowatt hour price of energy is determined on the day of the bid. As a result, we can only layout the factors that go into determining the price. We recognize that price is perhaps the most important economic factor since many Berkshire towns have low-income residents for whom price is an important

determinant. In an ideal world, we would conduct a cost-benefit analysis with exact price points, but this information is unavailable until one goes out to bid.

Political Impacts

For the political factor, we are looking at the relationships between the municipalities in the aggregation and the feasibility of changing the contract. Williamstown's town manager's main concern is what refiling process he would have to go through for a new contract. Therefore, we are analyzing each proposal to determine its effects on politics. The key considerations are whether the municipalities would need to refile with the DPU and the process of convincing all the town officials to join a new contract. Altering the aggregation would need a new application to the Massachusetts Department of Public Utilities, which can be lengthy and require extra assistance from a consultant. Thus, altering the contract can be politically risky. Next, we have evaluated if it would be possible to include Pittsfield in the existing Berkshire aggregation. Joining all towns together is favorable because the aggregation would have more buying power and can improve relationships between municipal officials. Leaving the aggregation is not desirable since it would leave the other towns behind and isolate Williamstown politically. In addition, we investigated how feasible switching the consultant is as a political factor. Switching from Colonial Power to another consultant might be difficult politically because Williamstown and other Berkshire towns already have an existing relationship with Colonial Power.

Environmental Impacts

Lastly, for the environmental factor, we have analyzed the effects of each proposal on the environment. For this, having more Class I RECs is the main point of analysis, since they are better for the environment and support regional renewable energy generation. Buying more Class I RECs in the next contract will have a positive effect on the environment. In addition, it will help increase New England's climate resiliency while reducing the region's contributions to climate change. If a proposal relies on out of state RECs, it is less desirable because it is not supporting new projects in New England and has little to no effect on creating additional renewable energy capacity anywhere in the country. Therefore, proposals that have high Class I REC options will rank higher in the environmental category of evaluation.

Matrix Evaluations

Color-Coded concerns

Regional (New England) = maroon

Local (Berkshire) = green

Town (Williamstown) = blue

Consultant Options Evaluation Matrix

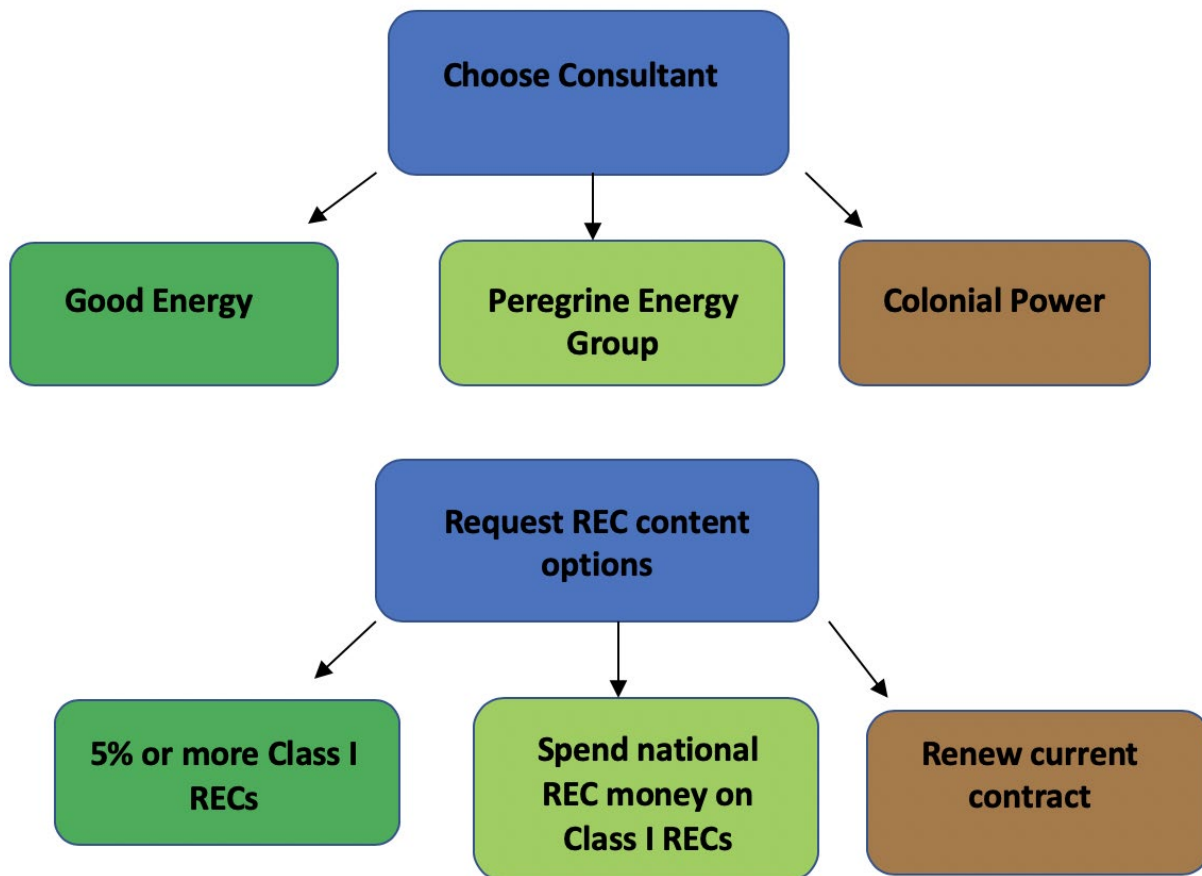
Option	Costs	Benefits
Stay with Colonial Power	<ul style="list-style-type: none"> ● Consultant previously sold a “greenwashed” aggregation ● Consultant may not be trustworthy ● Consultant is averse to Class I RECs and will push for National RECs 	<ul style="list-style-type: none"> ● No refile required to stay with Colonial Power, so less work needs to be done ● Maintain relationship with consultant
Partner with Peregrine Energy	<ul style="list-style-type: none"> ● Lose relationship with Colonial Power ● May have to refile with DPU to switch consultant 	<ul style="list-style-type: none"> ● Peregrine will help support greening the aggregation ● They have experience with green aggregations and Class I RECs ● They can help explore REC options and even a different mix for each town
Partner with Good Energy	<ul style="list-style-type: none"> ● Lose relationship with Colonial Power ● May have to refile with DPU to switch consultant 	<ul style="list-style-type: none"> ● Consultant believes in Class I RECs, so it will likely be easier to acquire them ● Consultant has the greatest experience in green municipal aggregations ● They are partnered with Green Energy Consumers Alliance ● They are responsible for creating the greenest municipal aggregations in the state

Class I REC Options Evaluation Matrix

Option	Costs	Benefits
35%+ additional Class I RECs	<ul style="list-style-type: none"> ● Likely more expensive than other options, but not necessarily above the basic service rate 	<ul style="list-style-type: none"> ● Become a state leader in green municipal aggregation ● Provide local jobs and renewable energy additionality ● Leading the way in the fight against climate change
At least 5% additional Class I RECs	<ul style="list-style-type: none"> ● Could be a greener aggregation ● Price of electricity may increase compared to other options 	<ul style="list-style-type: none"> ● Will become a green municipal aggregation ● Provide local jobs and renewable energy additionality ● Become an example to other towns in Massachusetts
Replace National RECs with same dollar amount of Class I RECs	<ul style="list-style-type: none"> ● Could be a greener aggregation 	<ul style="list-style-type: none"> ● Greener aggregation than our current one ● Provide local jobs and renewable energy additionality ● No increase in price relative to price of current contract energy makeup
Renew current contract	<ul style="list-style-type: none"> ● No additional Class I REC content ● Aggregation is not as green as it should be ● Not supporting new energy jobs and renewable energy additionality 	<ul style="list-style-type: none"> ● Easy to achieve as it only requires resigning the current contract

Our Recommendations

There are two main decisions that municipalities should focus on in greening their aggregation's electricity supply. The first is choosing a consultant that shares the municipality's values and goals. The second is requesting various REC content options from the consultant, so that the aggregation has prices for the green options they are considering. Finally, the municipality should choose which option they want based on price and green energy content.



Consultant Options

As discussed in the *Consultants* section of this report, the three consultant groups in the state vary widely in their approach to Class I RECs. Colonial Power Group does not believe that buying Class I RECs increase the amount of renewable energy in the New England grid, an opinion we found to contradict the other experts we spoke to. They do not push for including additional Class I REC content in the contracts they negotiate on behalf of the municipalities they serve. Instead, they try to provide the cheapest price, and if the municipality requests green options, they advocate for the purchase of inexpensive national RECs that have no impact on decreasing fossil fuel use in electricity generation and therefore have no positive environmental impact at all. We believe this is a form of deceptive marketing. Even though Colonial Power Group has existing relationships with all the aggregated municipalities in Berkshire County, we believe it is worth it for municipalities to switch to another consultant if they are serious about greening their electricity supply through the purchase of Class I RECs. Colonial Power does not seem to care about helping municipalities reduce their environmental impact, and instead tries to convince them that they are having an impact when they are not. It is clear that Colonial Power has no qualms about using the complicated nature of energy policy to mislead municipal officials and greenwash the products they are selling.

If the Berkshire Aggregation communities were to stay with Colonial Power, they would likely still be able to ask for Class I REC options, but they would need to be very specific about what they want. Colonial Power could provide these options, but we think they are untrustworthy and may work against the municipalities to the extent they can. There are other consultants in the state that will use their knowledge to help municipalities become greener rather than working against them.

Peregrine Energy group is a decent option for a consultant group. They understand the importance of Class I RECs and will help municipalities acquire them if asked. However, they also sell national RECs to municipalities that are less educated on REC policy, so we do not believe they are as committed to greening the grid as they could be. We believe that Good Energy is a better option.

Good Energy is our recommended consultant. Good Energy works with municipalities to acquire Class I RECs and helps them green their electricity supplies in other ways. They are partnered with GECA, and many of the greenest municipalities in the state are served by them. We think that Good Energy is an excellent ally for municipalities that are serious about reducing their contribution to climate change.

Energy Mix Options

We have detailed our energy mix options in our second matrix evaluation. We believe that the Berkshire aggregation has the potential to become a leader in green municipal aggregations in the state of Massachusetts. By purchasing a much higher percentage of Class I RECs than required by state law, the aggregation can go from being one of the least green aggregations to one of the greenest. The Berkshire aggregation can be considered a green municipal aggregation if we purchase five percent or more Class I RECs, but we think that the aggregation should shoot for a higher percentage if possible. Anything in the range of five to 35 percent additional Class I RECs would be a huge improvement over our current scenario.

A substantially less green but possibly slightly less expensive option would be to reallocate the money currently being spent on national RECs to the purchase of Class I RECs. This would remove our relatively meaningless “100% green” certification but would have a

positive environmental impact. We believe this is a relatively easy change, and we consider it a good back-up option if more ambitious efforts cannot be achieved.

We recommend against staying with our current contract. We are currently among the least green aggregations in the state. It is also not the best use of the residents' money, as we are spending extra money on national RECs that have no positive environmental impact. Resigning our current contract is an option we would like to avoid if possible. If town and city officials begin the process of planning a greener aggregation soon, it is likely that they will have time to alter the current contract before it expires.

Additional Contract Modifications

There are two additional recommendations that we think will benefit the Berkshire aggregation. Currently, the Berkshire towns (except for Pittsfield, which is not in the regional aggregation) do not have an option to opt up to 100% Class I RECs if they choose. The language to have an opt-up option is not currently in the contract language for the Berkshire towns.³⁹ We recommend adding a provision allowing this, and then requesting that the consultant include this option in its requests for bids from power suppliers. This will allow residents to be even greener than the rest of the aggregation if they choose to pay the higher price.

At our final meeting, Jim McGrath, the Pittsfield Open Space, and Natural Resource Program Manager, informed us of another contract modification that could greatly benefit the Berkshire aggregation. This policy, called an operational adder, would allow towns to implement a small additional fee to create a paid position relating to green energy. The employee hired

³⁹ Interview with Mark Cappadonna of Colonial Power Group.

could oversee the aggregation and could also oversee green energy for the town(s), promoting other green outcomes in other sectors such as transportation and energy efficiency.

In general, we would like to avoid having to modify the contract if possible to avoid refileing with the DPU. However, we think that an ambitious plan to green our aggregation will likely require it. Both changes mentioned above require amendments to the current contract. We were not able to clarify whether switching consultants requires a contract modification, despite the help of Larry Chretien from GECA. This particular question might be resolved by experts at the DPU, but unfortunately, we were not able to pursue this as a part of our research due to time constraints. Switching our energy mix does not require refileing.

The contract amendment filing process is not as lengthy as the process of creating an aggregation, and multiple changes can be made with a single application.⁴⁰ We recommend that municipalities begin to discuss options relatively soon, figure out what they want for the next consultant and contract, and hire a consultant to start the amendment process with the DPU. According to Larry Chretien, there is time to complete this process even with a DPU filing before the current contract expires, as long as municipalities do not delay this important and exciting process.

Bidding Process Recommendations

As we will not know the prices of the various REC options until the consultant goes out to bid for the aggregation, it is not clear at this time what the highest Class I content the aggregation will be able to afford. Because of this, we recommend that the municipalities advise the consultant to request prices for various options, so that the municipalities can choose between

⁴⁰ Interview with Larry Chretien of Green Energy Consumers Alliance.

then based on price concerns. For example, the municipality could request a price for our third REC option (replacing national wind RECs with Class I RECs), as well as prices for various levels of Class I RECs such as 5%, 10%, 15%, and so on, all the way to around 40 or 50% additional. Once the spread of prices is determined, the municipalities could choose the greenest option they can afford. If towns wanted to differentiate prices they pay, the consultant would be able to provide various options that they could choose from. We think it is important that the municipalities inform the consultant that they want a spread of prices, as we do not know if the consultant will provide this if they are not directly asked. As mentioned earlier, it is important to choose a consultant who will put in the work to find these options for the towns in the aggregation.

Final Presentation

On December 9, 2019, we presented our findings in a public meeting to many of the stakeholders in our project. Our clients, Nancy Nysten and Wendy Penner, were there, as well as Jim McGrath of Pittsfield, Jason Hoch and Anne O'Connor of Williamstown, Mike Canales of North Adams, and Jake Laughner and Logan Malik of Berkshire Environmental Action Team. We had Larry Chretien of Green Energy Consumers Alliance on call as an expert in green municipal aggregations.

After presenting, we opened the floor to discussion. Jim McGrath suggested including the possibility of an operational adder into the municipal aggregation plan. The group seemed receptive to this idea, although the Berkshire aggregation would need to submit an amendment of their plan to the Department of Public Utilities to include this option. The option to have an opt-up option where residents could choose to pay more for a greener product offered by the aggregation was mentioned, and overall, the officials seemed in support of this idea.

Pittsfield seemed interested in joining with North Adams and the rest of the Berkshire Aggregation, which would double the load of the Berkshire aggregation. While the municipal officials seemed hesitant to switch consultants, they also seemed willing to speak with other consultants besides Colonial Power to learn about more options. They agreed to meet after the new year to discuss options for the future. We are hopeful about this meeting because it brought people together and was a great first step towards a greener aggregation. We learned that the Berkshire Environmental Action Team is interested in continuing this work in the future and will continue to support Green Municipal Aggregation throughout the process of signing a new energy contract in the Berkshires.

Conclusion

We believe that buying national wind RECs does nothing to reduce carbon emissions, yet power companies and consultants continue to market these RECs as green options to municipalities like those in the Berkshire aggregation. The current system is set up for this deceptive marketing, causing municipalities to believe that they are providing a “green” product to their residents when they would be better off investing their money in Class I RECs. The current Berkshire aggregation is not reducing carbon dioxide emissions, but it could make a difference through the purchase of more Class I RECs than required by Massachusetts law. We believe that the Berkshires could be a leader in green municipal aggregation, investing in renewable energy projects and reducing the impact of climate change.

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Appendix

Appendix A: List of Interviewees and Interview Questions

10/17: Jason Hoch, Town Manager of Williamstown

- Can you explain the current aggregation? Who are members? Where does the energy come from? Where do we get our energy?
- What type of RECs have we purchased? What types of RECs are available?
- How many residents participate in New England GreenStart?
- What does the energy mix look like for Williamstown?
- How many residents participate in the municipal aggregation? How many still use National Grid?
- Do you think residents aware of where they get their energy from?
- What was the process like for forming the aggregation?
- What are you envisioning for energy in 2020?
- Have you looked at other programs in Massachusetts?

10/25: Jane Winn, Green Commission and Berkshire Environmental Action Team (BEAT)

- What was your role in making Pittsfield energy greener?
- Is the public aware?
- Do you have Class I RECs? Where does your energy come from?
- How did you explain Class I RECS to the public?
- How did you decide to make an aggregation on your own? Did you do a cost-benefit analysis?
- Any advice for a community that wants to switch their energy supply?
- What were the biggest arguments for switching?
- What were the biggest arguments against? Was there a backlash?
- Why is local energy better?

10/31: Group call with Larry Chretien, executive director of Green Energy Consumers Alliance, Jason Hoch, and Nancy Nysten

- Can you explain your role and your organization, Green Consumers Alliance?
- How can Class I RECs make our municipal aggregation greener?
- Why are local sources better than wind from Texas?
- Would you be willing to come out to Berkshire County to hold a meeting?

- How much work have you done with Colonial Power?
- How would you explain the importance of Class I RECs?
- What details are important in convincing the public that Class I RECs are important?
- How do you get people interested and engaged in a complicated topic?

10/31: Jim McGrath, Public, Open Space and Natural Resource Manager:

- How did you come to form the aggregation/ what was your role?
- Could you explain the process of Pittsfield's municipal aggregation?
- How would you explain the importance of Class I RECs?
- What is Pittsfield's Renewable Energy Portfolio?
- How did you educate the public?/ Do you think the public is aware?
- What was the public's role?
- How does Pittsfield's size influence its ability/ purchasing power to get a good deal?
- Do you see a similar situation occurring in Williamstown?
- What do you envision for the future of Pittsfield in terms of its energy?

11/7: Mark Cappadonna from Colonial Power Group

- Can you explain what Colonial Power does and what your role is in the company?
- What is your role in the aggregation?
- Can you explain class I RECs?
- Could there be options to opt up to a greener option with class I RECs in Williamstown?
- Do you have data on potential RECs that are available to Williamstown?
- Do you know how many people have opted out or why that is?
- Have you ever considered joining all of the Berkshire County together under one plan? What would be some of the pros and cons of doing that?
- Do you think by combining and increasing our purchasing power we may be able to include Class I Recs and keep costs low?
- What are the current energy prices in the other Berkshire communities?
- When do the other contracts expire of the Berkshire communities?
- What are your thoughts on whether Pittsfield should join Williamstown's aggregation?
- How long does it take to form an aggregation? What if it was just adding one more town?
- Why do you bet on Berkshire projects, but your competitors don't?

11/14: Paul Gromer, founder and CEO of Peregrine Energy

- Can you explain what Peregrine Energy does and what your role is in the company?
- Can you explain class I RECs?
- Have you considered on aggregations in the Berkshires?
- How could you help us get more green energy? What do you do on the consulting end?

- Do you have opt up programs? How many people participate?
- Do you think by combining and increasing our purchasing power we may be able to include Class I Recs and keep costs low?
- What specifically is the process like- if we wanted to increase percentage of class I RECs without increasing price, can we do that? Can we set a price and adjust Class I RECs accordingly?
- How complex is the refiling to move to a greener aggregation?

11/14: Anne O'Connor, Williamstown Board of Selectmen

- Can you describe your role as a member of the selectboard of Williamstown?
- What is the current style of government in Williamstown?
- What do you think the select board will think about our project?
- What do you think would be the best forum for our final presentation to take place?
- Any further advice?

11/21: Mike Canales, North Adams Town Manager

- Explain our project: Greening Williamstown's municipal aggregation
- What was the process like for forming the aggregation? What are the local politics like?
- Would they be interested in going greener?
- Why did you go with Colonial Power?
- Would you consider a new consultant?
- What are you hoping for in the next contract?