Challenges and Benefits of Community Choice Aggregation Programs, MA

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Introduction

Massachusetts is currently one of only eight states in the US to have enacted CCA legislation (*Electric Restructuring Act, 1997).* Community choice aggregation (CCA) programs are energy procurement programs adopted by 170+ municipalities in Massachusetts so far. These CCA programs allow local governments to aggregate the electricity loads of their residents, businesses and municipal facilities in order to procure a competitive supply of electricity. There are many potential benefits of CCA programs, including but not limited to, savings for customers via lower prices, and incentives to boost innovation and local development of renewable energy technologies. CCA's also have the ability to create positive environmental benefits. For example, municipalities having the power to choose their electricity supplier could increase their use of renewable energy relative to non-renewable energy, thus contributing to the mitigation of the harmful effects of climate change.

Research Question

This study examines opportunities and challenges associated with CCA programs. We examined many aspects of CCA programs in MA, but I focused specifically on the relationship between renewable energy usage and % price reduction in default energy plans. There are several ways to implement renewable energy sources into CCA programs, and I studied the individual and combined effect of each type of renewable energy on % price reduction in default CCA plans.

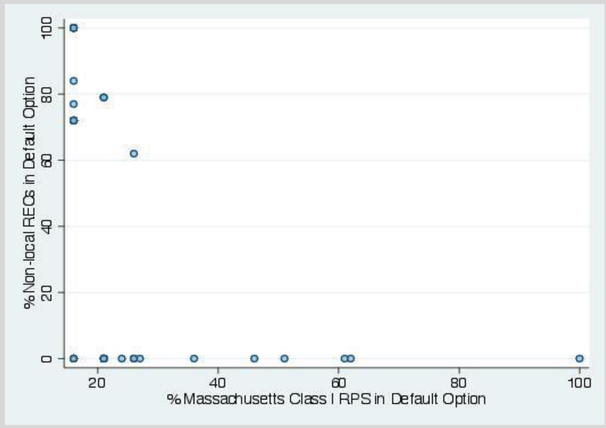
Data and Methods

Our dataset combines survey data we gathered with publicly available data. Survey data has been collected since Spring 2019 by a team of UMass students under the supervision of Prof. Vicarelli. The survey targets the officials of the 170+ MA municipalities with CCA programs, and those that are currently implementing programs. Our dataset currently includes 47 municipalities. Respondents include mayors, town managers, energy managers and chairs of sustainability and energy committees.

Results

The State of Massachusetts requires that CCA contracts include at least 16% Class 1 Renewable Energy Portfolio Standard (RPS) (i.e. electricity from qualifying renewable energy facilities located in New England).
Municipalities may exceed the required RPS and they may also purchase national Renewable Energy Certificates (RECs) (i.e. certificates equivalent to 1 MWh of electricity generated from renewable sources in the US.)
RECs are cheaper than Class 1 RPS (which are local).

- **FIG 1: What percent of Class 1 RPS and Non-local RECs do MA municipalities have in their default CCA option?**



Municipalities often develop CCA contracts to reduce their energy costs. Can municipalities achieve savings when the percentage of RPS and/or RECs is high?

- **FIG 2 : Percentage of Class 1 RPS in CCA contracts and corresponding energy price reduction.**

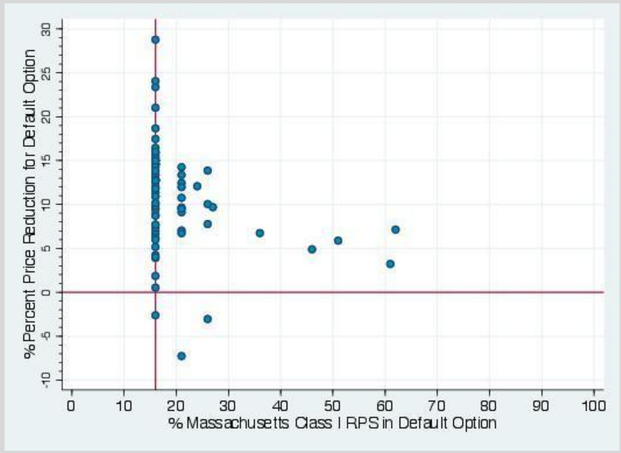
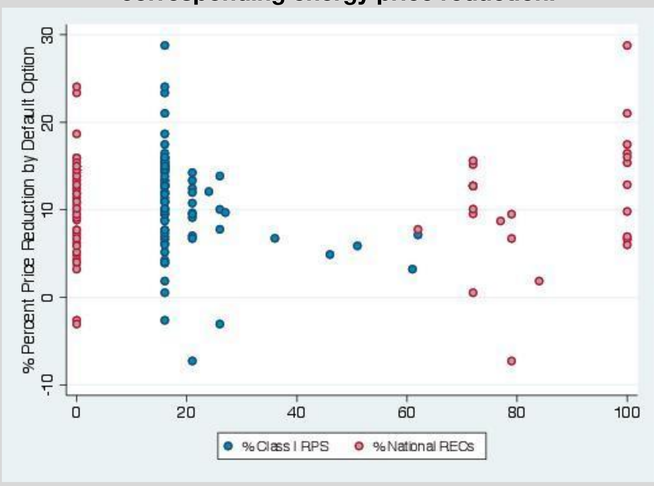


FIG 3 : Percentage of RPS and RECs in CCA contracts and corresponding energy price reduction.



Conclusions

- ~30% of CCA contracts exceed the required 16% RPS.
- FIG 2: However, almost all municipalities experienced a reduction in energy prices after implementing their CCA.
- FIG 2: Among contracts with more than the required 16% Class 1 RPS, only 2 (out of 35) municipalities did not experience a price reduction.
- Fig 3 shows estimated price reductions (i.e. CCA cost savings) in relation to both the % of local RPS and the % national RECs in each contract:
- All contracts with >60% RECs observed a price reduction, except one.
- Additionally, every single municipality with 100% Non-Local RECs observed a price reduction.

Role of the Research Assistant

My role in the project began in the latter half of the data collection process. The majority of my tasks revolved around creating databases, researching CCA and internet rate information, contacting municipality officials, conducting interviews with town officials, and updating our multiple databases based on new information. Working alongside my partners John Stevenson and Nihal Warawdekar researched and kept up with aggregation policy, as well as reviewed our data to find important relationships and correlations to better understand the implementation and effectiveness of CCA programs in Massachusetts.