Erie County Low Income Program for Sustainable Energy (ECLIPSE): A Perspective on Community Choice Aggregation

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Before we get started...

What this presentation is NOT:
- A review of CCA mechanics
- A presentation of a case study

What this presentation IS:
- Presenting a value proposition
- Outlining a comparative advantage
- Proposing a method for creating evidence based practice
Community Choice Aggregation in a nutshell

**source:**
CCA
The new community choice program buys cleaner energy and also builds facilities to produce clean energy locally

**delivery:**
UTILITY
The investor owned utility you previously owned your power from continues to deliver the energy and service the lines

**customer:**
YOU
You enjoy freedom of choice, cleaner energy, lower rates, more local jobs, and local control of your energy future

Standard explanation from CCA advocates
(Source: CommunityChoiceNow.org)
At the core, CCA is just

Energy Aggregation
Combining the electric or natural gas load of multiple retail customers for the purpose of purchasing retail electric or natural gas supply service in larger quantities at a lower rate.

Source: Independent Energy Consultants
ECLIPSE Components

• Bulk purchasing of natural gas and electricity
  • Economies of scale for purchasing energy for HEAP recipients
• Coordinating energy efficiency services for LMI populations
• Renewable energy adoption
  • Community shared solar
• Leverage county’s position as financial intermediary
  • Designing and delivering value-added services
Basic approach to formation

- Investigating CCA formation
- Community Energy Planning
- Developing an CCA implementation plan
- Outreach and Marketing
- Documentation and Evaluation
So, if CCA is happening and being contemplated across the state, what's unique here?
ECLIPSE has big goals beyond bulk purchasing

• Drive benefits of the CCA to vulnerable households
• Simultaneously lower greenhouse gas emissions and community energy intensity as the project matures
• Foster interdepartmental and intergovernmental collaboration
• Contribute to improved the health of disparate populations
  • Using the lens of the Social Determinants of Health
Bringing together unlikely partnerships

• Collaborative effort of government (Erie County) and academia (Buffalo State)
• Simultaneously lower greenhouse gas emissions and improve the health of disparate populations
  • Using the lens of the Social Determinants of Health
Inspired policy drives bold action
Big Picture – Why this matters

CLIMATE CHANGE IS A POVERTY PROBLEM.

http://bit.ly/1R6B54l
Social vulnerability to climate change in Erie County

<table>
<thead>
<tr>
<th>Variable</th>
<th>Effect on Social Vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High percentage of the population over 65 years</td>
<td>Increase</td>
</tr>
<tr>
<td>2. High median dollar value of owner-occupied housing</td>
<td>Decrease</td>
</tr>
<tr>
<td>3. High percentage of the population that is African American</td>
<td>Increase</td>
</tr>
<tr>
<td>4. High percentage of the civilian labor force that is unemployed</td>
<td>Increase</td>
</tr>
<tr>
<td>5. High percentage of the population living in poverty</td>
<td>Increase</td>
</tr>
<tr>
<td>6. High percentage of the population that is 25 years or older with no high school diploma</td>
<td>Increase</td>
</tr>
<tr>
<td>7. High percentage of female-headed households, no spouse present</td>
<td>Increase</td>
</tr>
<tr>
<td>8. High percentage of households receiving social security income</td>
<td>Increase</td>
</tr>
<tr>
<td>9. High percentage of population employed in primary extractive industries (e.g., agriculture, forestry, mining, and fishing and hunting)</td>
<td>Increase</td>
</tr>
</tbody>
</table>

Key Finding 3: Social Determinants of Health Interact with Climate Factors to Affect Health Risks

Research Support
Big Picture – What’s the big problem
**Big Picture – What’s the big problem**

<table>
<thead>
<tr>
<th>Erie County (2015)</th>
<th>Individual Shortfall</th>
<th>Number of Households</th>
<th>Aggregate Shortfall</th>
<th>Home Energy Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 50% of FPL</td>
<td>$1,226</td>
<td>26,508</td>
<td>$32,491,886</td>
<td>23.7%</td>
</tr>
<tr>
<td>50% - 99% of FPL</td>
<td>$862</td>
<td>29,750</td>
<td>$25,629,818</td>
<td>12.6%</td>
</tr>
<tr>
<td>100% - 124% of FPL</td>
<td>$471</td>
<td>15,266</td>
<td>$7,194,217</td>
<td>8.4%</td>
</tr>
<tr>
<td>125% - 149% of FPL</td>
<td>$211</td>
<td>16,405</td>
<td>$3,462,956</td>
<td>6.9%</td>
</tr>
<tr>
<td>150% - 184% of FPL</td>
<td>-</td>
<td>22,600</td>
<td>-</td>
<td>5.7%</td>
</tr>
<tr>
<td>185% - 199% of FPL</td>
<td>-</td>
<td>8,876</td>
<td>-</td>
<td>4.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119,405</strong></td>
<td><strong>68,778,877</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Fisher, Sheehan & Colton, April 2016*
Even as solar PV prices continue to fall, the barriers to low income solar will remain without targeted policies.

**Low-Income Families:**
- are less likely to own roofs due to higher rates of living in multi-family buildings and being renters
- have limited access to financing due to lower savings, less income to borrow against, and lower credit scores that further reduce access to capital
- are more likely to live in older buildings that require other upgrades to support solar
- are unable to realize solar value in cases where they do not pay utility bills

<table>
<thead>
<tr>
<th>Percent of Households Who Are Renters</th>
<th>U.S. Households</th>
<th>Earnings Less Than $40,000 Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>49.1 million</td>
<td>$40,000</td>
</tr>
<tr>
<td>21.8%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These Households Make Up

- 40% of all US households
- <5% of solar installations

GW Solar Institute
GW Planet Forward
What makes Erie County think it's such a good fit for developing a low income centered CCA?
We're already a convenor

WNY Stormwater Coalition

Western New York Sustainable Business Roundtable

Erie County Environmental Management Council
We have a built-in multi channel marketing apparatus
And our target demographic generally comes to us!
We're already an aggregator!

- Erie County already bulk purchases natural gas and electricity for over **two dozen municipalities** in Western New York
  - Approximately 1.6 BCF of natural gas
    - Includes 678,000 MCF thru the Public Assistance Cooperative for Energy (PACE)
  - 219 million kWh (calendar 2015)
So, what's your **big idea**?
Big Picture

- Data as a way to solve problems
  - Cumulative hardship of basic needs
  - Many programs and efforts to mitigate problems
  - Data helps us find what is impactful
Data, Dashboards, Evaluation

- Integrated, multi-level data collection and evaluation framework
  - Bridge between business, government and scientific communities
- Data-driven decision-making
  - Continuous quality improvement
  - Results-based Accountability to link program performance metrics and aligned population-level outcomes
Data, Dashboards, Evaluation

• We can’t robustly test the outcomes
  • Align data to help us understand the contribution of the program’s efforts to changing the outcomes
    • Make data useful!
  • Prioritize disparate populations, including by geography
    • Identify where/with who the program can make the biggest impacts
How much did we do?

How well did we do it?

Is anyone better off?

<table>
<thead>
<tr>
<th>Effort</th>
<th>Quantity</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much did we do?</td>
<td></td>
<td>How well did we do it?</td>
</tr>
<tr>
<td>Effect</td>
<td>#</td>
<td>%</td>
</tr>
</tbody>
</table>
ECLIPSE Program Survey Data
Socioeconomic Status, Health, Energy Utilization

Performance

Population

Processing

Dashboard & Visualizations

HEAP Data
- Enrollment Numbers
- Total Energy Expenditures
- Total Energy Volume
  - ESCO Enrollment
  - ESCO Expenditures
  - ESCO Volume

Greenhouse Gases
- Point Source Emissions
- Aggregate Emissions

Health
- Respiratory Hospitalizations
- Medicaid Data
- Archival Nutritional/Food-Related Measures

Socioeconomic
- Poverty
- Receipt of SNAP

Aggregation to various geographies

Computation of rates, change over time, etc.

Disparities

Economic Quantification
What we get if we're lucky

Source: IBM Center for Applied Insights, 2011
Open Data

• In the data and analyses, plus the methodology
• Interactive visualizations and data interface for program metrics
  • Participation
  • Utilization and cost savings
  • Greenhouse gas emissions
  • Survey data of program participants on health and behavior
  • Generative information for the development of "value added-services"
Transparency

• Beyond internal decision-making, convey economic and health impacts for:
  • Consumers
  • Policy-makers
  • Health professionals
  • Tax payers
  • Other stakeholders
• Changing the narrative the clean energy future
  • Beyond the privilege of consumptive decision making
Thank you!