ANN ARBOR'S
SUSTAINABLE ENERGY UTILITY

Energy Commission 11/9/2021

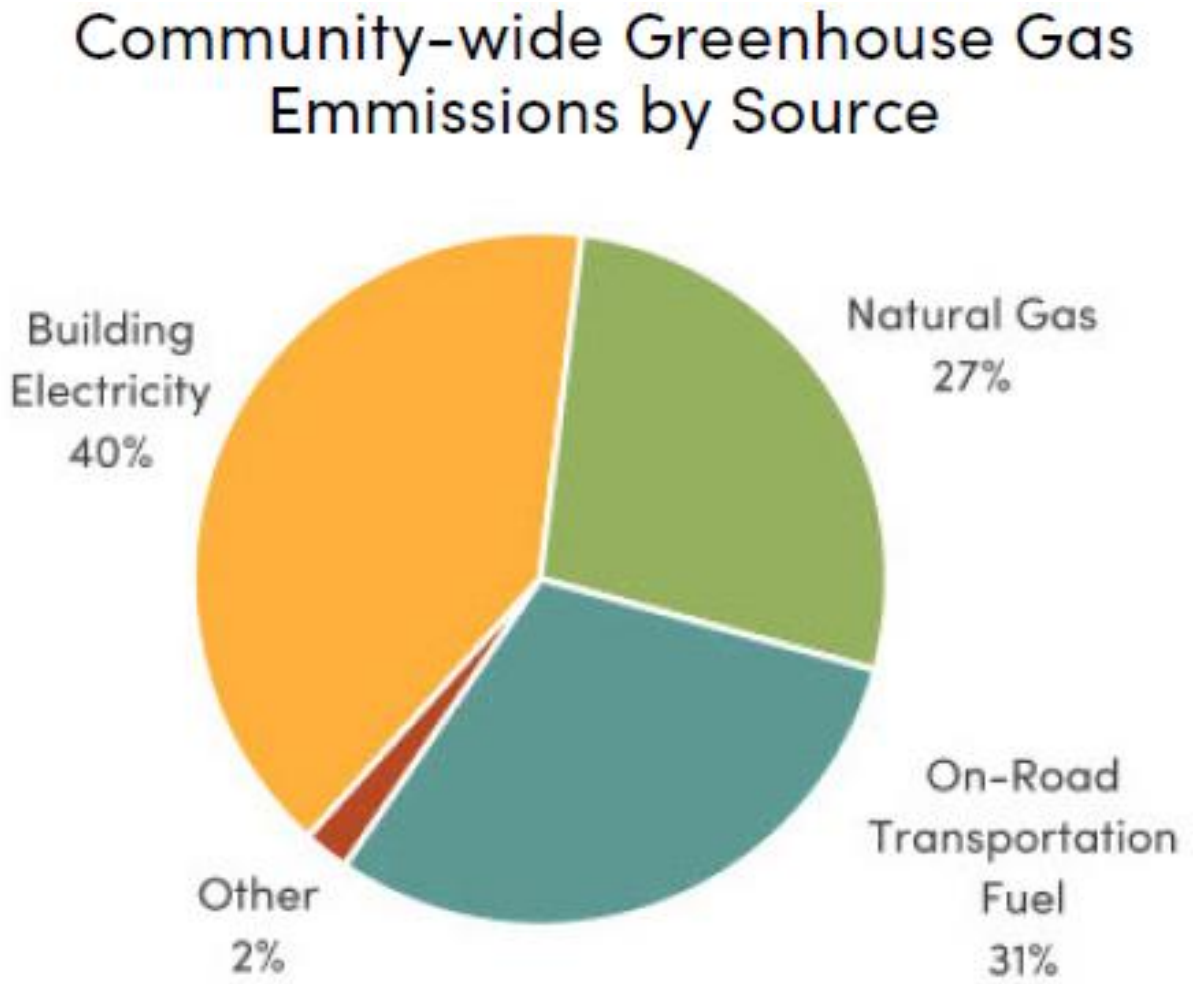
Introduction

- In November of 2019, Ann Arbor City Council unanimously declared a climate emergency and set the goal of a just transition to community-wide carbon neutrality by the year 2030.
- On June 1, 2020 Ann Arbor City Council reaffirmed its commitment to climate action by unanimously adopting A^{2}ZERO.

A^{2}ZERO

EQUITABLE • SUSTAINABLE • TRANSFORMATIVE

Emissions by Source



Systematic Analysis

ON-SITE INSTALLATIONS

PROS:	• Economic benefits • Equity and workforce opportunities • Visible leadership • Multiple procurement options available: power purchase, lease option, or direct purchase
CONS:	• It is unlikely that the user will own the RECs and will therefore not be able to claim the renewable attributes • Contracts can be challenging

COMMUNITY SOLAR GARDEN SUBSCRIPTIONS

PROS:	• Economic benefits • Equity and workforce opportunities
CONS:	• It is unlikely that the user will own the RECs and will therefore not be able to claim the renewable attributes • Not always visible to community members or subscribers • Contracts can be challenging

UNBUNDLED RECS

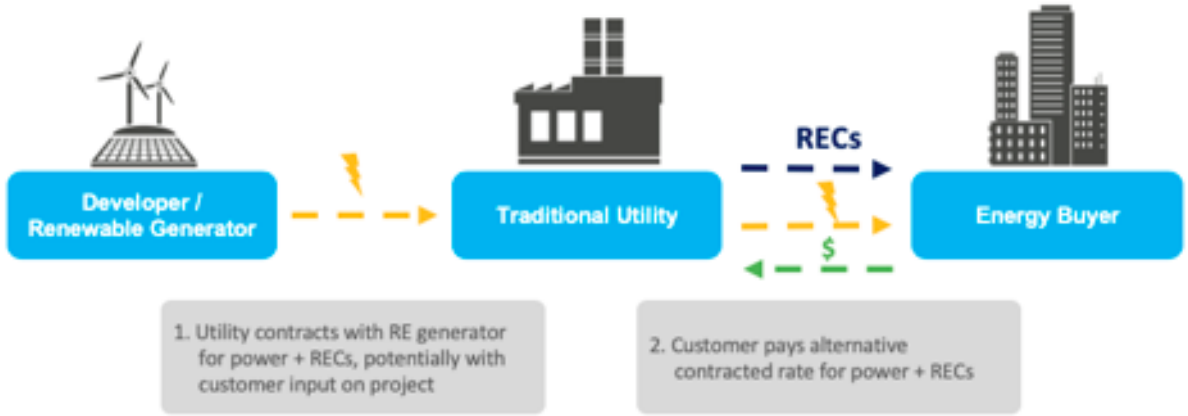
PROS:	• Can make a renewable energy claim • Relatively easy to acquire
CONS:	• No economic, equity, or workforce benefits • Not visible to community members • May not result in additional renewable energy development

OFF-SITE PHYSICAL POWER PURCHASE AGREEMENT

PROS:	• May be able to get RECs, if bundled in contract • Potential for economic benefits • Will likely result in new renewable energy development
CONS:	• No equity or local workforce benefits • Not visible to community members • Complex contracting

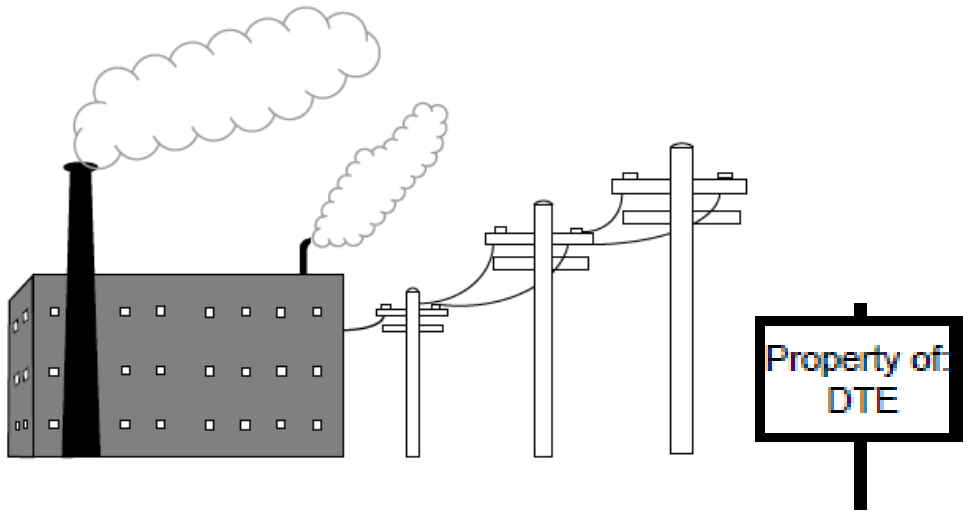
OFF-SITE VIRTUAL POWER PURCHASE AGREEMENT

PROS:	• May be able to get RECs, if bundled in contract • Potential for economic benefits • Will likely result in new renewable energy development
CONS:	• No equity or local workforce benefits • Not visible to community members • Complex contracting, not yet done in Minnesota



Michigan Energy Context

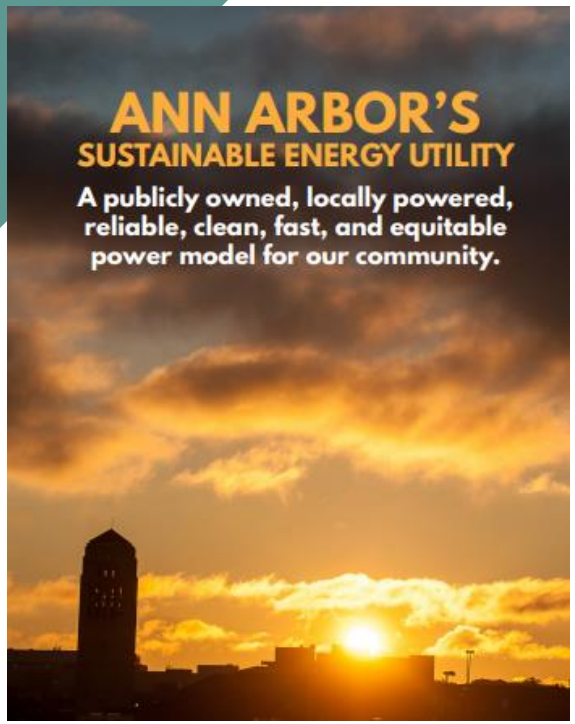
- Ann Arbor has a pre-Foote Act franchise, meaning our current utility's franchise is considered perpetual.
- Our constitution states that Cities and Villages can directly compete and/or take over an existing franchise. That means we could:
  - Buy out DTE's infrastructure (traditional municipalization)
  - Create a parallel utility to compete with DTE



What if....

- What if we created:
  - A parallel utility that did NOT duplicate the traditional grid, with all its vulnerabilities
  - A utility that focused on **building** new clean energy here in our city, now.
  - A utility that enabled rapid decarbonization through electrification and deep efficiency, while avoiding spending all our resources on court battles
  - A parallel utility that is a viable option now thanks to advances in technology

WHAT IS A SUSTAINABLE ENERGY UTILITY (SEU)?



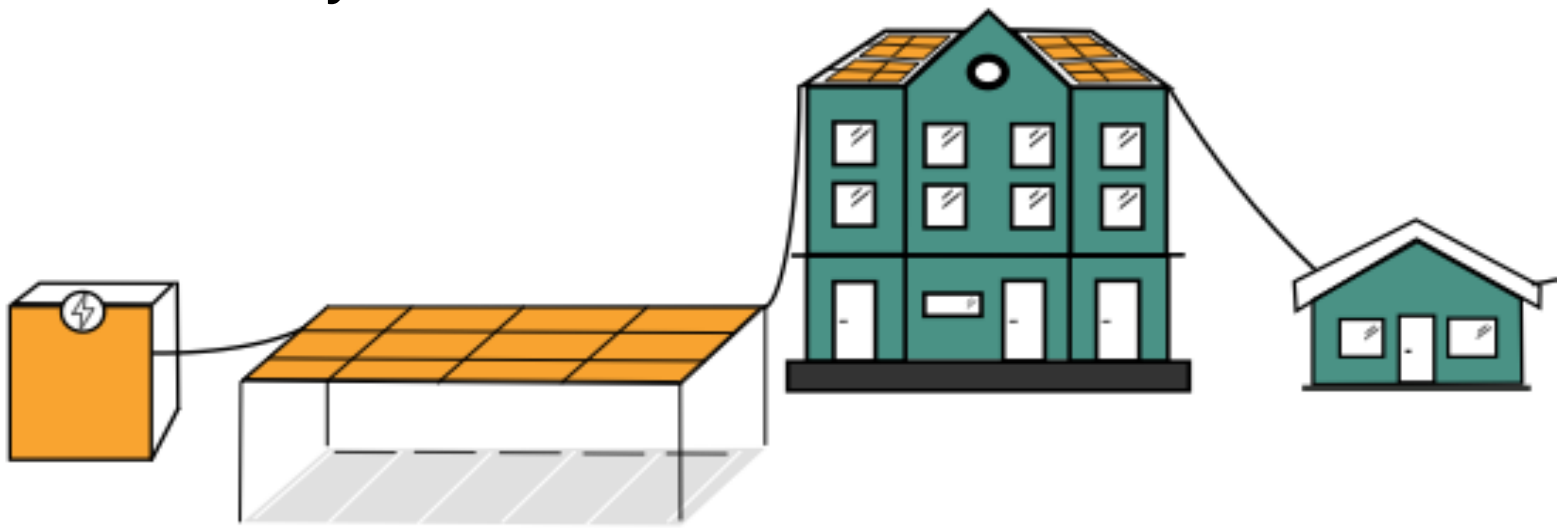
Sustainable Energy Utility

VISION

A 100% renewably-powered, reliable, local, shared, and publicly owned energy utility; built by the community for the community.

What is a SEU?

- An SEU is a parallel, supplemental utility that builds renewable energy, right here in Ann Arbor, on rooftops and carports and strategic public places, connecting homes, businesses, community arrays, and energy storage via microgrids.
- Invests deeply in energy efficiency and electrification of our homes and buildings
- Prioritizes at-risk and underserved communities with programs and rate structure
- Focuses on reliability and resilience



Objectives for a SEU

6 OBJECTIVES

1. Shift our energy system from carbon intensive energy sources to carbon-free energy sources as outlined in A²ZERO.

2. Find solutions commensurate with the pace necessary to achieve a just transition to community-wide carbon neutrality by 2030.

3. Create a customer-centric model that empowers people and businesses—regardless of their size or location-- to have choice in meeting their energy needs.

Objectives for a SEU Cont.

4. Center the needs of low-income and historically under-represented groups in the energy system and ensuring they have access to programs that improve comfort, affordability, and sustainability.

5. Move away from viewing energy as a commodity to viewing energy as a service.

6. Improve our energy system's reliability and resilience by lowering our dependence on a single grid.

What services could a SEU offer?

- **Solar and energy storage** to improve reliability during power outages.
- Robust **energy waste reduction** (efficiency) programs and rebates to support residents – even those who don't own their dwellings -- with improving indoor comfort, health, and safety, all while saving money.
- **On-bill financing** to help lower the costs and increase the flexibility of paying for our clean energy transition.

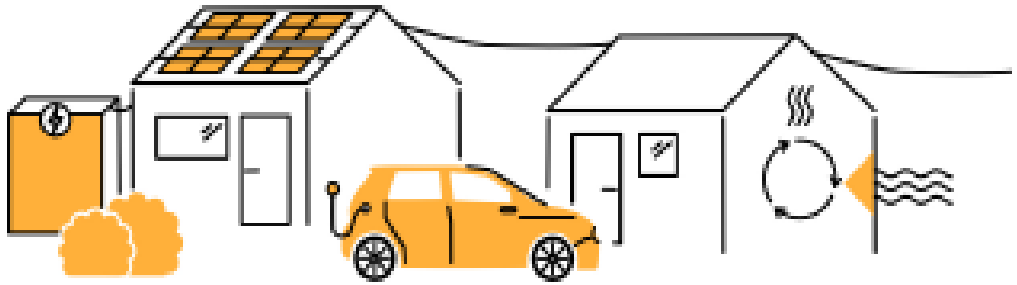
What services could a SEU offer?

- **Microgrids** between neighboring households, to share solar and storage.
- Support for **beneficial electrification** to help people transition to cleaner and safer all-electric homes and businesses.
- **District level geothermal systems** so that neighbors can jointly tap into the earth to heat and cool their homes and businesses.
- **Community solar** programs that allow neighboring residents to benefit from solar installed at community sites.

Why a SEU?

A SEU focuses on local generation. It would:

- Invest immediately in local clean energy, generated in our community from things like solar and energy storage.
- Help many more Ann Arborites access the benefits of clean energy and receive energy waste reduction services
- Not focus on buying existing poles and wires from incumbent utility but install limited poles and wires for micro and nano-grids
- **Focus on reliability, resilience, local, clean, affordable energy**

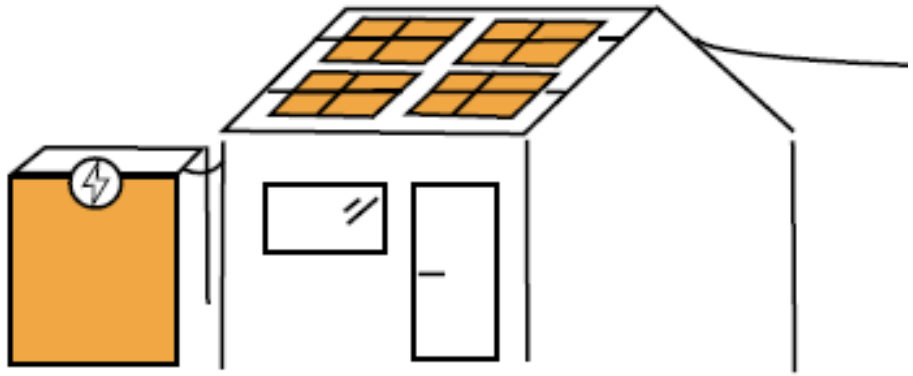


How a SEU aligns with our 2030 Goal & Energy Criteria and Principles

ENERGY CRITERIA AND PRINCIPLES	SUSTAINABLE ENERGY UTILITY
Reduce GHG Emissions	Excellent
Additionality	Excellent
Equity and Justice	Good
Enhance Resilience and Reliability	Excellent
Start Local	Excellent
Speed	Excellent
Scalable and Transferable	Excellent
Cost Effective	Good

HOW A SUSTAINABLE ENERGY UTILITY WOULD WORK

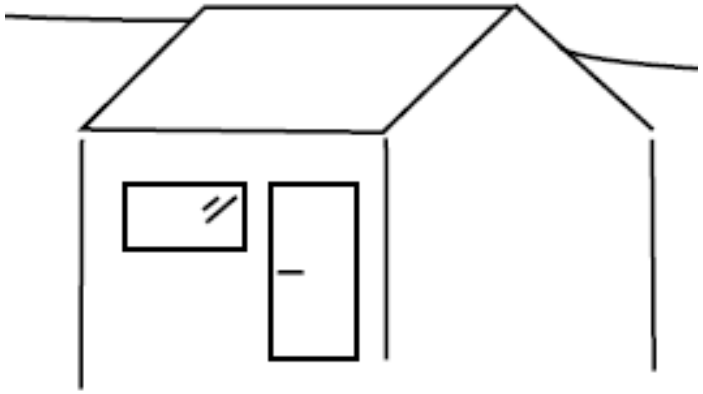
Example: SEU-Owned Solar



Scenario 1: Homeowner/Business with good solar potential

- Enroll in the SEU as a supplemental utility to DTE
- SEU assists in electrification and efficiency improvements. Homeowner has the option to finance upgrades with on-bill financing.
- SEU places solar on roof, maximizing the generation potential, and sending the excess to SEU-owned storage (and eventually to neighbors)
- Resident receives two electric bills, with SEU solar providing the majority of electricity.

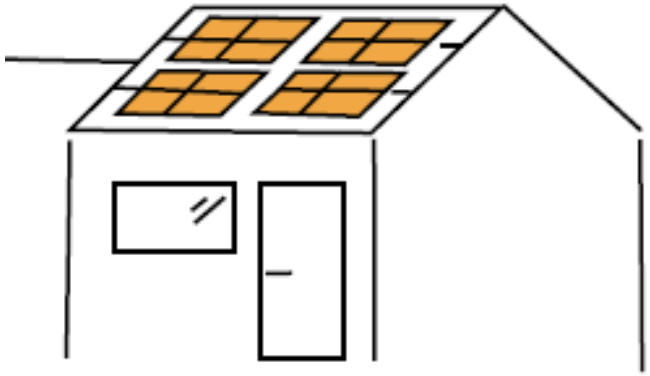
Example: SEU without On-Site Solar



Scenario 2: Homeowner/Business with poor solar potential

- All the same benefits as Scenario 1; difference is resident is not hosting SEU solar on roof.
- SEU assists in electrification and efficiency improvements. Resident has option to finance upgrades with on-bill financing.
- Once micro and nano grids become available, resident receives power from excess energy generated by neighbors or the SEU's battery system
- Resident receives two electric bills

Example: Customer-Owned Solar



Scenario 3: Homeowner/Business who owns their own solar

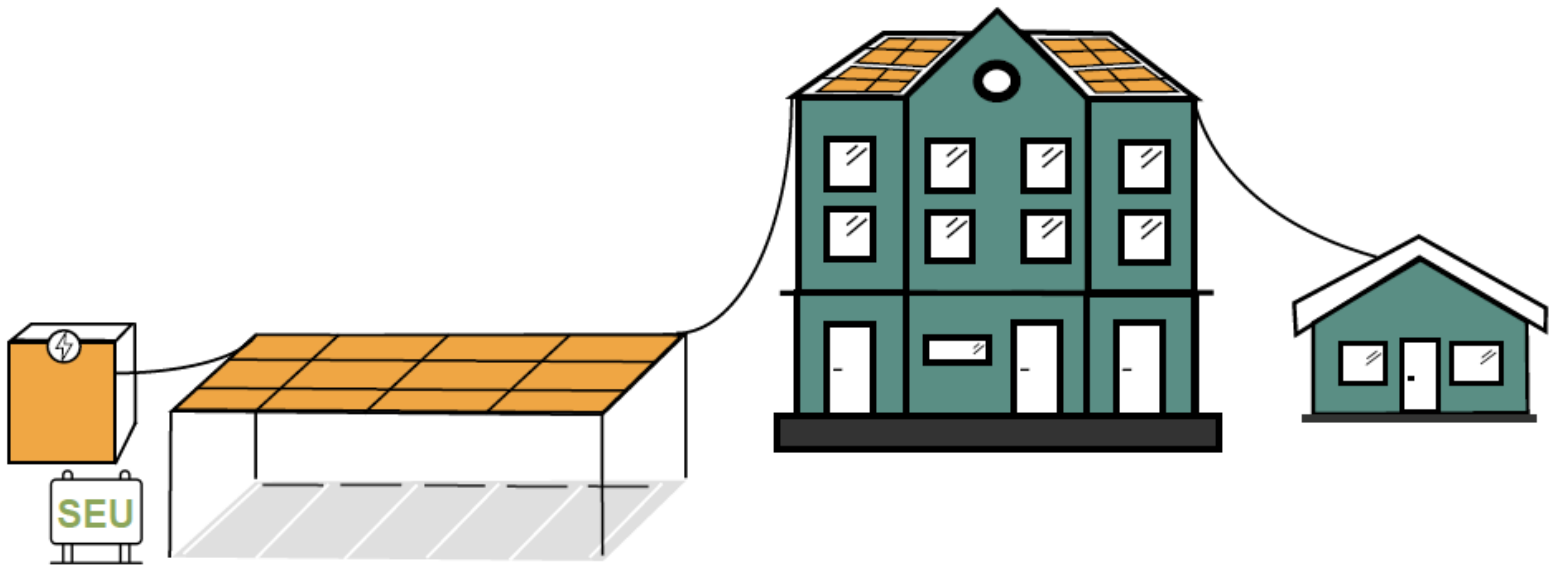
- Resident enrolls in the SEU
- SEU assists in electrification and efficiency improvements. Resident has option to finance upgrades with on-bill financing.
- Resident uses power from system – any excess is sold to the SEU and distributed through the micro and/or nano grid to neighbors OR put onto the SEU battery system

Example: Renters

Scenario 4: Renters

- Enrollment and programs are done in coordination with landlord
- Renters are eligible for all applicable SEU programs
- Green rental leases and on-bill financing would enable the improvements to stay with the building, the financing to be spread over a long period of time, and the benefits to be realized by current and future tenants

Example: Community Solar



Scenario 4:Solar Carport

- Larger solar installations, such as carports, school rooftops, or ground mounts, could host solar for multiple buildings in small community solar microgrids

LOGISTICS AND NEXT STEPS TO ESTABLISHING AN SEU

Administering a SEU

- An Ann Arbor SEU could leverage contractors for installation and maintenance of the physical infrastructure of the utility
- Billing and customer service could be handled in whole or large-part by the City
- Creation and overall management would be handled by the City
  - Provides significant flexibility
  - Easily adjust offerings and services to reflect the needs of the community as well as changing technology.

Next Steps

1. Assess interest from residents in joining the SEU, creating a waitlist (recommended)
2. Complete a rate analysis (recommended).
3. Determine governance structure and staffing needs (recommended)
4. Pass an ordinance by Council providing for the creation of a SEU (required).
5. Initiate micro and nano grid assessments (recommended)
6. Determine funding for SEU. If the SEU is funded solely through grants, philanthropy, or other methods that don't involve borrowing or taxation, a vote of the people would not be necessary.

ANN ARBOR SUSTAINABLE ENERGY UTILITY:

CLEAN, FAST, LOCAL, RELIABLE, & AFFORDABLE ENERGY

WWW.A2GOV.ORG/A2SEU