



# Diversity Equity Inclusion Community Power

**The sun is free for everyone.**

Abstract

**How do we create a climate partnership to forever eliminate fossil gas and replace it with green distributed energy located in a community that is diverse and deserves energy equity?**

**Homeland Solar**  
Larry Kerber  
[Larry@HomelandSolar.com](mailto:Larry@HomelandSolar.com)

## Overview/Introduction

Among the most significant challenges faced by A2Zero is the elimination of fossil gas burned for space and water heating. Even as heat pump technology has advanced, the transition from burning fossil gas to using modern heat pumps for space and water heating will not be feasible without low-cost electricity. Nowhere is this more apparent than in low-income households already struggling with high energy bills.

In combination, 1) the recently awarded DOE grant providing \$550,000 for planning and design of a geothermal system for Bryant neighborhood, and 2) the Inflation Reduction Act solar incentives for low-income energy, make it possible to replace fossil gas with geothermal heating powered by low cost solar power and storage. In addition to the A2Zero benefits, the potential for vastly improving the financial well-being for hundreds of Bryant neighborhood families is truly inspiring.

## Background

### *The Problem*

For far too long, low-income families have seen their household resources disproportionately siphoned off by high energy bills. As solar provides more affluent households with excellent payback and lower energy costs, low-income families struggle with the required down payment and the credit necessary to fund these greener, less expensive distributed energy sources.

### *Geothermal district*

Geothermal at scale is arguably the most efficient source of home heating available. Using ground heat, Coefficients of Performance (COP) as high as 4 to 1 are possible. Rather than burning fossil fuels, it makes sense to turn *heat from the earth to heat for the hearth*.

### *2030 Convergence*

As we look at the remaining decade with time running out to avert the worst of climate change, we are seeing a convergence of advanced geothermal heat pump technologies, falling costs for solar energy, and the monumental impact of the Inflation Reduction Act (IRA) for fighting climate change. This is an incredible opportunity for Bryant neighborhood, the City of Ann Arbor, the State of Michigan, our country, and the world. But how does this all come together?

As good as the IRA is, the benefit for low-income renters, and owners of condos and homes is limited to the 30% Investment Tax Credit (ITC). Further, the ITC only has value for those with tax liability. Even if the resident has the down payment and income, a solar payback of even 7-9 years doesn't deliver the lowest cost of electricity for the much higher levels of electric usage that comes from a geothermal heat pump.

While the IRA may or may not help residents owning solar directly, the tested and proven third-party ownership model provides an opportunity to deliver a funding stack that includes:

- 30% Direct Pay Investment Credit
- 10% Domestic Content adder
- 20% for Low-income Economic Benefit Project adder

For example, with third-party ownership, a \$15,000 solar system can be reduced to \$6000 (60% credit), which supports a low PPA rate with a term of 6-10 years, depending on buyout options. After the buyout, solar energy is virtually free.

## **An A2Zero Climate/Community Partnership is the Solution**

When everything necessary for success aligns, it is time to act. Homeland Solar is an Ann Arbor company committed to serving the City of Ann Arbor and surrounding Washtenaw County townships with high-value, low-cost solar energy, while also providing good jobs and wages, and apprenticeships to develop a workforce with skills for the 21<sup>st</sup> century.

Homeland Solar envisions a climate/community partnership with Community Action Network, MichiganSaves, and A2 SEU for revolutionizing new energy for the Bryant neighborhood. The partnership will form a financing/administration special entity with a mission to make inexpensive energy available to the residents of Bryant community via the City of Ann Arbor Sustainable Energy Utility (SEU).

### ***Goals of Climate/Community Partnership***

The Climate/Community Partnership will combine the strengths of 3 different and complementary entities.

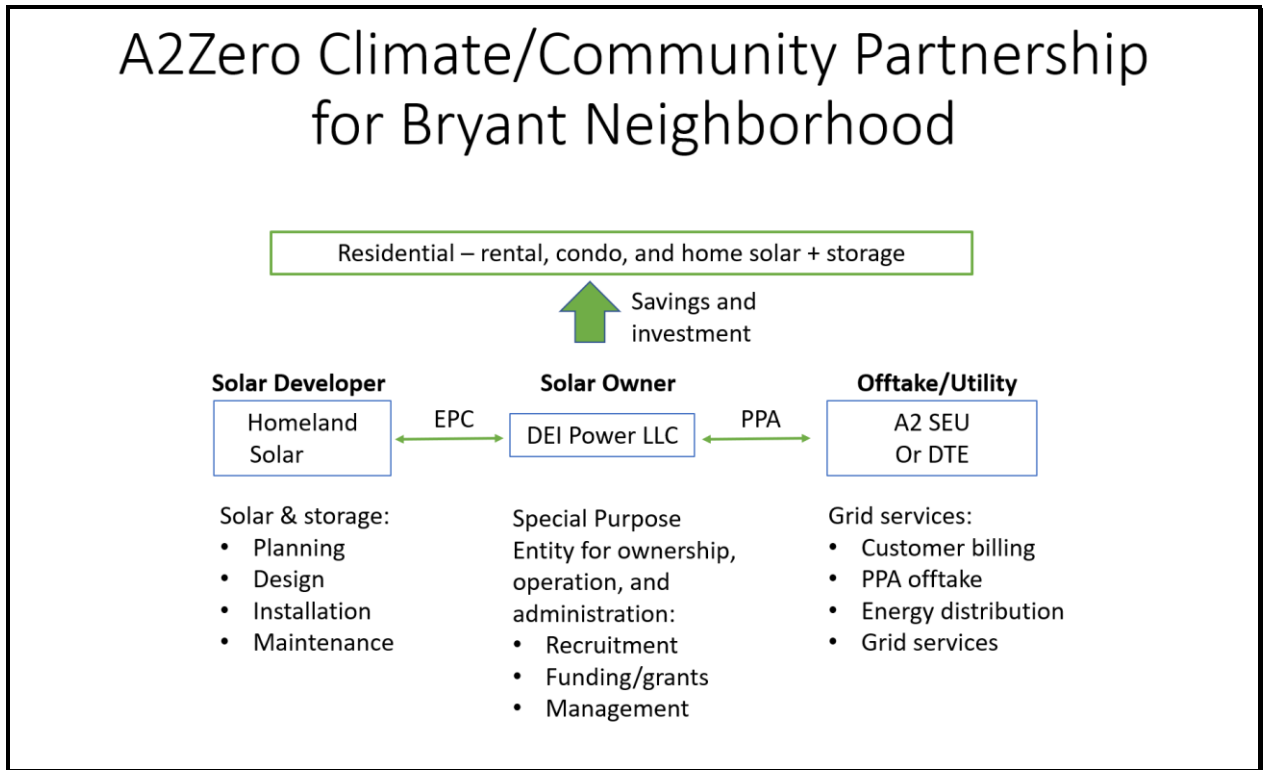
Homeland Solar will provide solar energy assessment, microgrid planning, solar design, solar installation, and where relevant, storage for backup/resilience, plus on-going maintenance.

DEI Power LLC – pronounced DAY and standing for Diversity Equity & Inclusion – a qualified tax-exempt entity, 501(c)(3), has its mission to transform the community with green investment for the good of the residents and homeowners. DEI Power would own residential rooftop and ground-mount solar in Bryant neighborhood using a Power Purchase Agreement (PPA) with an initial 6-year term. Its small staff would recruit residents, administer the ownership of solar + storage assets, provide accounting services, and manage maintenance and service requests.

DEI Power envisions that funds for building out the solar + storage would come from outside donations, PPA payments, MichiganSaves loans, and potentially City of Ann Arbor or other grant funding. Recruitment would leverage Community Action Network and City of Ann Arbor resources. Maximizing use of the 60% incentive stack from the IRA, the PPA would provide affordable energy for residents over

an initial 6-year term. The PPA would then end with an ownership “flip” with terms that will be favorable to the resident. After expenses, DEI Power’s goal would be to return as much of the solar savings as possible to Bryant residents, as interested parties and homeowners.

The A2 Sustainable Energy Utility (A2SEU) would be the municipal purchaser of energy produced by DEI Power via the PPA. Much like the legacy utility, the SEU would provide distribution infrastructure allowing individual Distributed Energy Resources (DERs) on roofs, ground and landfill to provide both inflow and outflow energy sharing services for the Bryant neighborhood.



## Big Idea? How Big...

Bryant neighborhood has 260+ individual addresses for apartments, condos, and homes. Many of these individual sites have south, east, and west-facing, low pitch roofs ideal for solar. In total, these roofs would provide about 1.715 MWs of solar power, and produce about 1000 kWh/kW, a substantial amount of solar energy across the community. While not all Bryant households are low income, a sufficient percentage should qualify as low income to meet the Category 4: Economic Benefit Project requirement of the Inflation Reduction Act.

## Bryant Neighborhood Buildout

	2024	2025	2026	2027	2028	2029	2030...	...2035 Total
No. of Sites	30	50	50	50	40	30	15	265
Avg. Cost/House	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$ 20,000
Investment	\$600,000	\$1,000,000	\$1,000,000	\$1,000,000	\$800,000	\$600,000	\$300,000	\$ 5,300,000
Incentives @ 60%	\$360,000	\$600,000	\$600,000	\$600,000	\$480,000	\$360,000	\$180,000	\$ 3,180,000
Net After Incentives	\$240,000	\$400,000	\$400,000	\$400,000	\$320,000	\$240,000	\$120,000	\$2,120,000
PPA kW of Power (10kW/Site)	300	799	1295	1788	2179	2468	2606	
PPA kWh (1000kWh/kW)	300,000	798,500	1,294,508	1,788,035	2,179,095	2,468,199	2,605,858	18,539,481
PPA Contribution (\$0.06/kWh)	\$ 18,000	\$ 47,910	\$ 77,670	\$ 107,282	\$ 130,746	\$ 148,092	\$ 156,351	\$ 1,112,369
Funding Gap (Borrowing/Grants)	\$222,000	\$352,090	\$322,330	\$292,718	\$189,254	\$91,908	(\$36,351)	\$1,007,631
Cummulative Gap	\$222,000	\$574,090	\$896,420	\$1,189,137	\$1,378,392	\$1,470,300	\$1,433,948	

Note: The Funding Gap will be further paid down in 2031 to 2035 as PPA payments continue after the buildout ends in 2030. Over 12 years, the Funding Gap is about \$1,000,000 not including expenses, buyouts, borrowing, or grants.

## Summary of Benefits

- Make geothermal heat pumps 100% green and affordable for residents on day one
- Support the A2 Sustainable Energy Utility with a source of solar power for sharing on its first community microgrid
- Workforce development and apprenticeship opportunities within a diverse community
- Greatly enhance the value of Bryant neighborhood properties and create a model “green” city for others around the world to follow.

Working together will make the difference.

*Let's Make It A Solar World*