



**Adam Flint**, Director of Clean Energy Programs  
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A Program of



# Register today at NYNEST.ORG

- **Thursday, December 3, 12-12:50pm**  
*Clean Heat Beneath your Feet with Dailey Geothermal*
- **Wednesday, December 9, 12-12:50pm**  
*Energy Efficiency Virtual Home Tour (Binghamton) with The Insulation Man*
- **Wednesday, January 13, 2021, 7-7:50pm**  
*Clean Heating & Cooling with Heat Pumps & Energy Efficiency*
- **Thursday, January 21, 2021, 12-12:50pm**  
*Air Source Heat Pump Virtual Home Tour (Oxford)*

## NEST's HeatSmart Southern Tier (HSST) Virtual Webinar Series Schedule



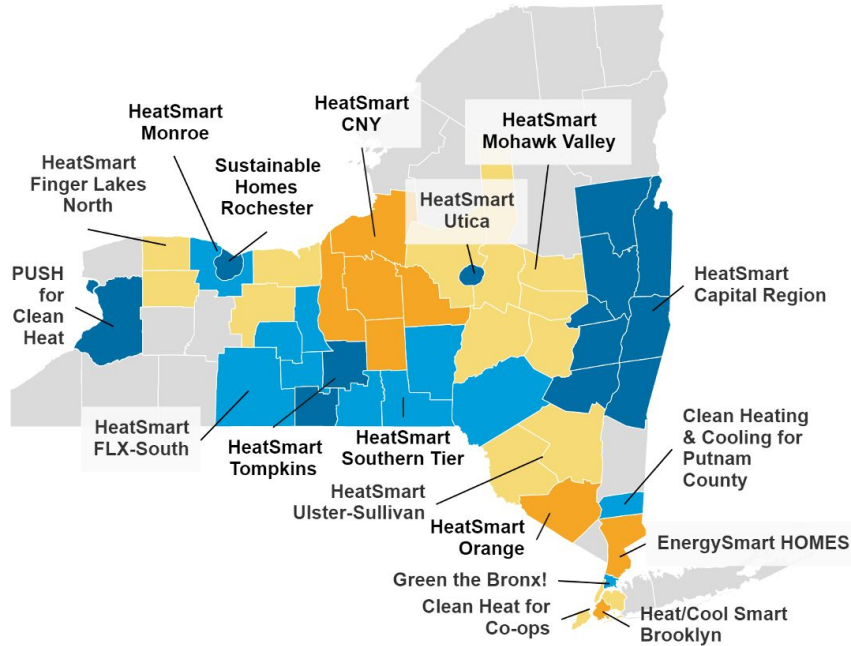
The Network for a Sustainable Tomorrow is a non-profit community-based network of programs working towards social, environmental, and economic justice and equity in our region. NEST catalyzes and convenes new initiatives and partnerships, and does outreach and education to build a stronger and more resilient Southern Tier.



# Overview

- **What is Heat Smart Southern Tier?**
- **Why HeatSmart?**
- **HeatSmart Technologies**
  - Weatherization and home energy assessment
  - Heat Pump Technologies
- **Incentives & financing**
- **How to participate**
- **Community Solar**
- **Q&A**

# What is HeatSmart Southern Tier?



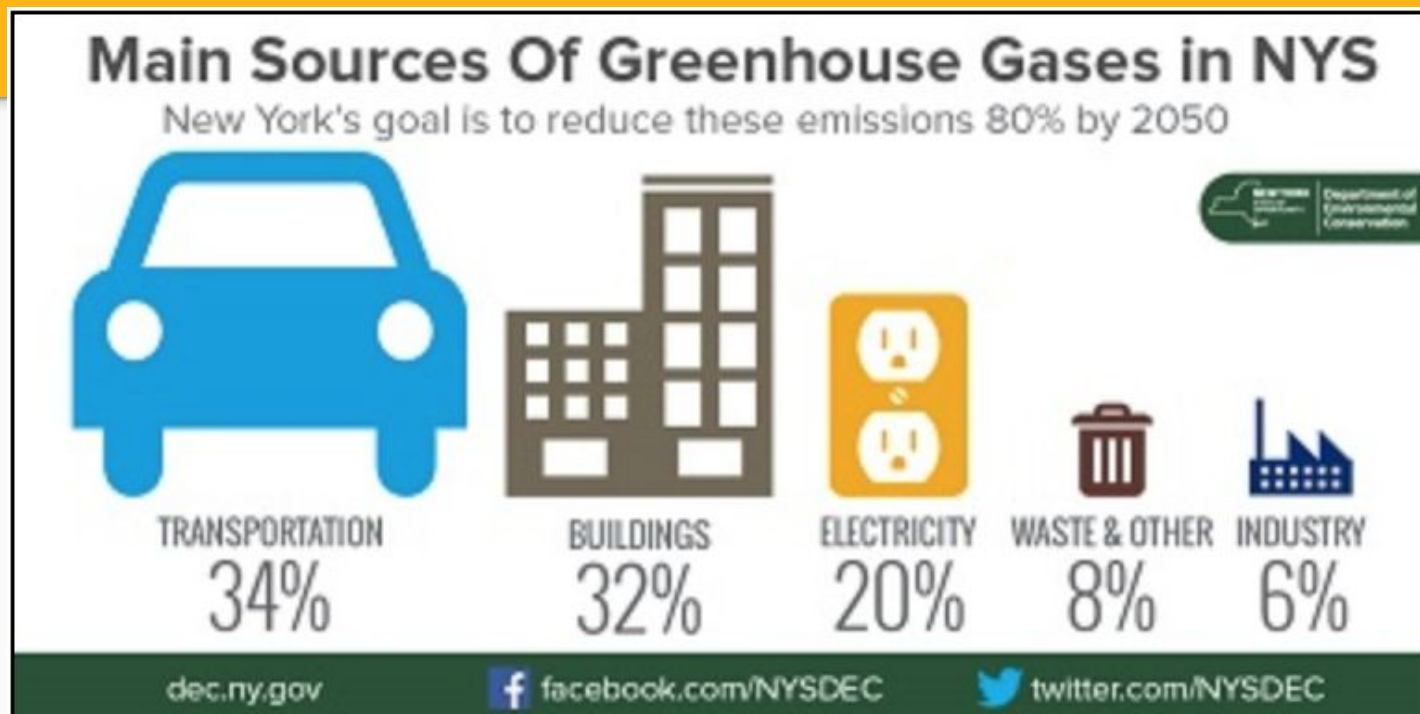
- HeatSmart Southern Tier (HSST) is a NYSERDA-funded community outreach program that connects you to local heating and cooling and energy efficiency experts who offer the latest clean energy technologies.
- We work to educate the public about sustainable heating and cooling systems through our workshops, webinars and tabling events.

# Benefits of Heat Smart Southern Tier

- Reduce energy costs
- Home comfort & safety
- Greenhouse gas emissions
- Community awareness



# Where Are We Now?



# Heat Smart Southern Tier Program Covers:



- Weatherization
- Heat Pumps
  - Ground Source
  - Air Source
  - Water Heater



# HeatSmart Southern Tier's Competitively Selected Partners

Air Source Heat Pumps



**D & D**

**Refrigeration**

(Delaware county)

Ground Source Heat Pumps

Dailey Geothermal

Home Performance and Efficiency





First Step: Weatherization

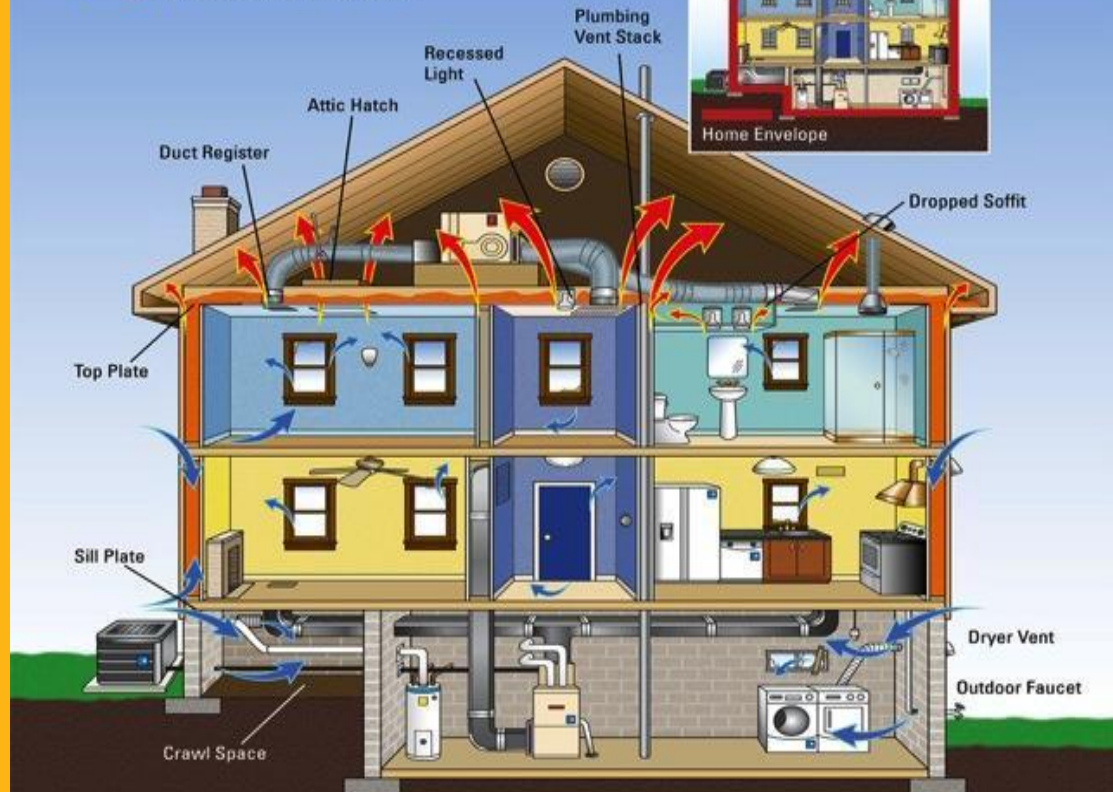
# Home Energy Assessment

## Assessment of customer's heating and cooling needs

- Walkthrough of interior & exterior of home
- Combustion safety test
- Infrared camera
- Blower door test
- Home energy report with recommended weatherization next steps

## COMMON AIR LEAKS

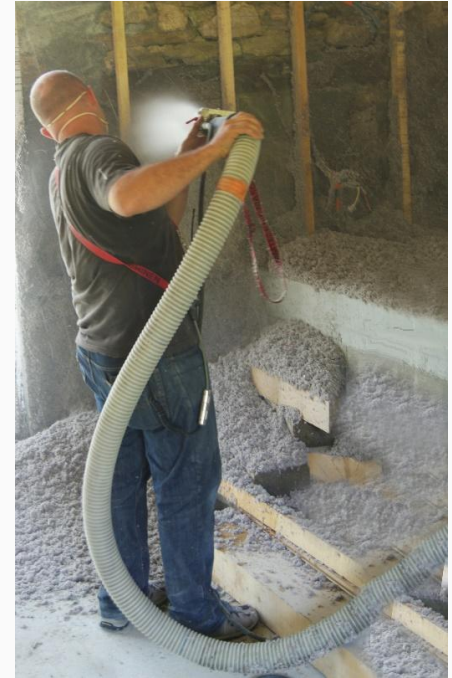
-  Air Leaking into the house
-  Air Leaking out of the house



Source: U.S. EPA

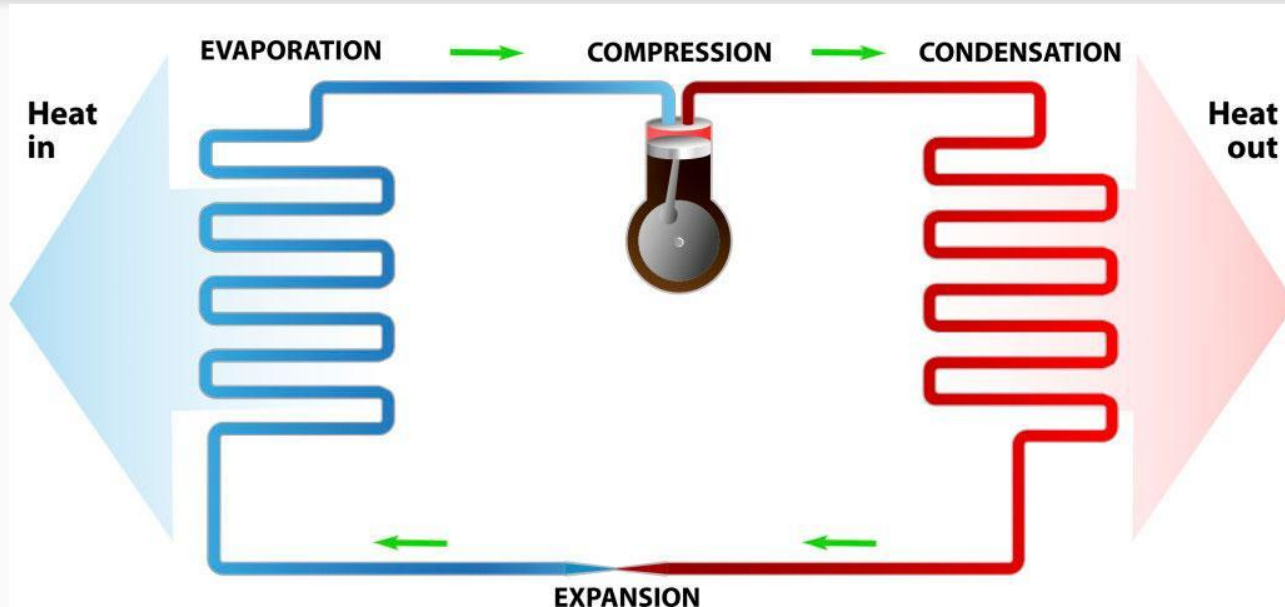
# Weatherization Benefits

- Reduce energy consumption and costs
- Increase Home Safety
- Improve home comfort
  - Reduce drafts
  - Improve humidity control
  - Improve indoor air quality
  - Reduce risk of ice dams



# Heat Pump Technologies

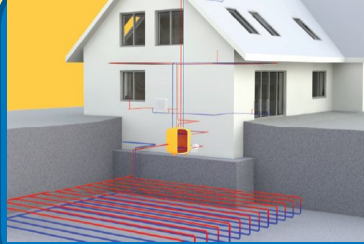
# What is a heat pump?



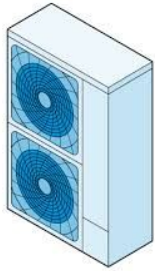
# Types of Heat Pumps

Space Heating & Cooling

Hot Water Heating



Ground Source  
Heat Pump



Air Source  
Heat Pump

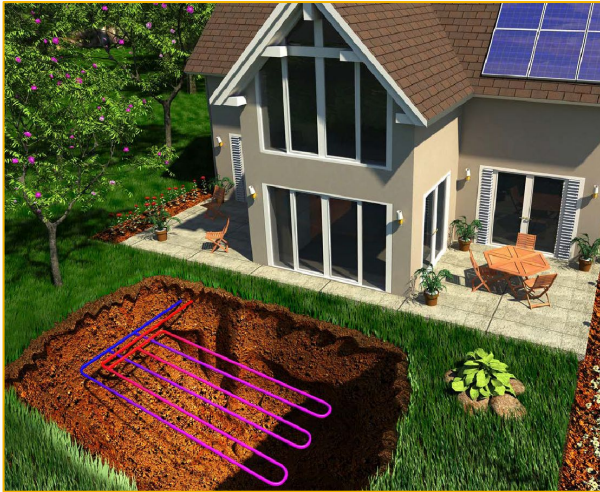


Heat pump  
Water Heater

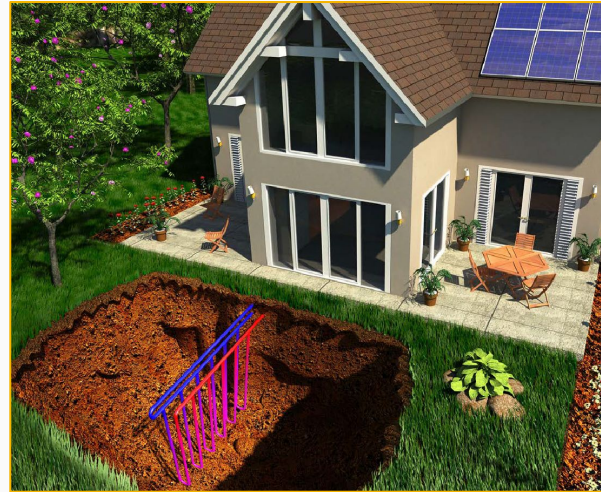


# Types of Ground Source Heat Pumps

## Closed Loop



**Horizontal**



**Vertical**

# Ground Source Heat Pump Benefits

- An efficient heating/cooling system
- Long system lifetime
- Eliminate fossil fuels from your home
- Can include domestic hot water



# Air Source Heat Pumps

## Ductless Heat Pumps

### Outdoor Units



### Indoor Units



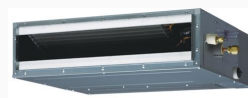
Wall Mount



Ceiling Cassette



Floor Mount



Mini Duct

# Air Source Heat Pumps Benefits

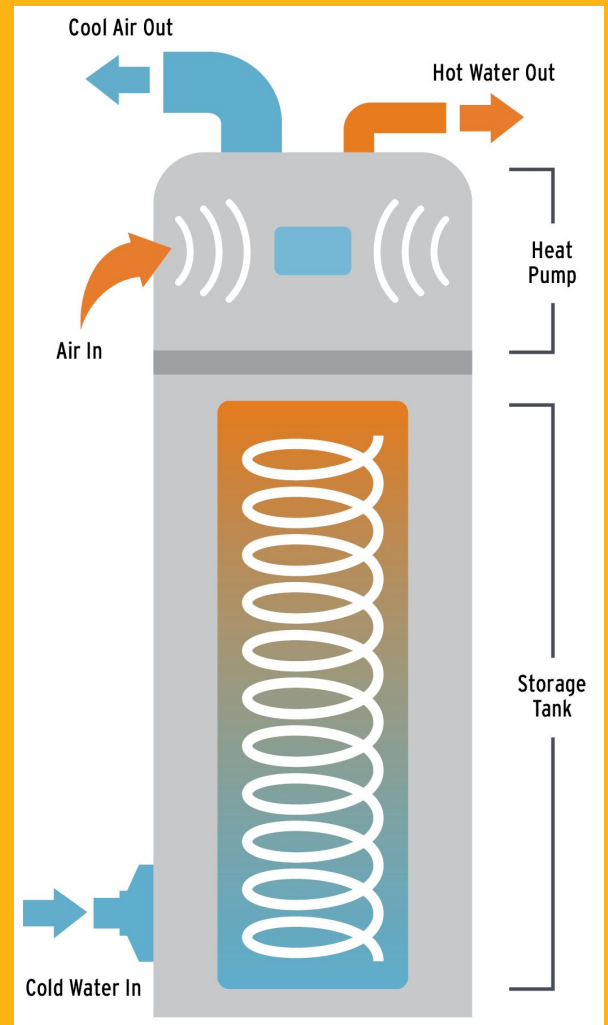
- Energy savings
- Air conditioning without ductwork
- Full heating replacement not required
- Flexible
- Zone control
- Quiet

# Heat Pump Water Heaters

- Uses indoor air to heat your hot water
- Has backup for meeting high demand

## Benefits

- More efficient than typical electric water heaters
- Provides dehumidification



# Economics, Incentives, and Financing

# NYSEG & RGE Incentives (Residential)

Technology	Description		Eligibility Requirements
Cold Climate Air Source Heat Pump	Partial Load Heating Rebate	\$500 per outdoor unit <i>(-\$100 per outdoor unit to contractor)</i>	All ASHPs must be NEEP-listed Cold Climate Air Source Heat Pumps
	Full Load Heating Rebate	\$1,000 per 10,000 Btu/h of maximum capacity at 5°F <i>(-\$500 per project to contractor)</i>	Partial Load: Must be mini-split heat pump Full Load: Can be central or mini-split heat pump, must be sized to 90-120% of building heat load
Ground Source Heat Pump	Full Load Heating Rebate	\$1,500 per 10,000 Btu/h of heating capacity (certified by AHRI) <i>(-\$500 per project to contractor)</i>	GSHP must be ENERGY STAR certified and meet ENERGY STAR Tier 3 requirements and be sized to 90-120% of building heat load.  This incentive only covers closed-loop systems. Speak with your installer for more information about incentives for open-loop systems.
Water Heating	Heat Pump Water Heater	\$700 per unit	Must be ENERGY STAR certified and under 120 gallons in capacity
	GSHP Desuperheater	\$100 per unit	Desuperheaters are installed as an optional component to eligible GSHP systems to offset some of your hot water load. Speak with your installer to learn more about desuperheater integration.
	Ground-Source Water Heater	\$900 per unit	This incentive is for ground source heat pump systems dedicated to providing 100% of domestic hot water load. The GSHP must be ENERGY STAR Tier 3 Certified.

**\*\*Custom incentives and incentives for commercial-scale systems are also available based on the expected annual energy savings (\$80/MMBtu). Speak with your installer to learn more.**

# Heat Pump Tax Credits

	<b>Air Source Heat Pump</b>	<b>Ground Source Heat Pump</b>	<b>Heat Pump Water Heater</b>
Federal Tax Credit		26%	\$300 until Dec 31, 2020



# Financing

Provider	Loan Product Name	Description
NYSERDA*	Smart Energy Loan	Up to \$25,000; terms of 5, 10, and 15 years; 3.49 <u>or</u> 6.99% interest
	On-Bill Recovery Loan	Up to \$25,000; terms of 5, 10, and 15 years; 3.49 <u>or</u> 6.99% interest; paid on utility bill
	Companion Loan	Up to \$25,000; terms of 5, 10, and 15 years; 6.99% interest additional to OBR or SEL for larger work scopes. Cost effectiveness & other requirements apply. *
ASHP/GSHP Manufacturer Financing (E.g. Synchrony, EnerBank)		Unsecured loans with dealer fees (can be terms of up to 20 years)
Local Banks (e.g. Home Equity, consumer loans)		Dependent on bank

# Enabling LMI Participation: Income-eligible programs

## Assisted Home Performance with Energy Star Energy Efficiency/Weatherization

Provides those who apply with a discount of **50% of project costs**

- Limit of **\$5,000** for single-family
- Limit of **\$10,000** for 2-4 unit multi-family
- Eligibility expanded up to 120% AMI through Dec. 31
- Includes heat pumps as of Late Nov.

Household Size	Income Limit
1	\$39,904
2	\$52,192
3	\$64,480
4	\$76,752
5	\$89,040
6	\$101,312

(Income levels subject to change)

# Enabling LMI participation: Income-eligible programs

EmPower NY

Energy Efficiency/Weatherization

- Available to homeowners that are under 60% of state median (HEAP/low-income utility rate code eligible) that pay utility bills
- FREE assessment and efficiency improvements
- Max award increased to \$10k until Dec 31.
- Includes heat pumps as of late Nov

Household Size	Income Limit
1	\$29,928
2	\$39,144
3	\$48,360
4	\$57,564
5	\$66,780
6	\$75,984

(Income levels subject to change)

# LMI Adder Incentive

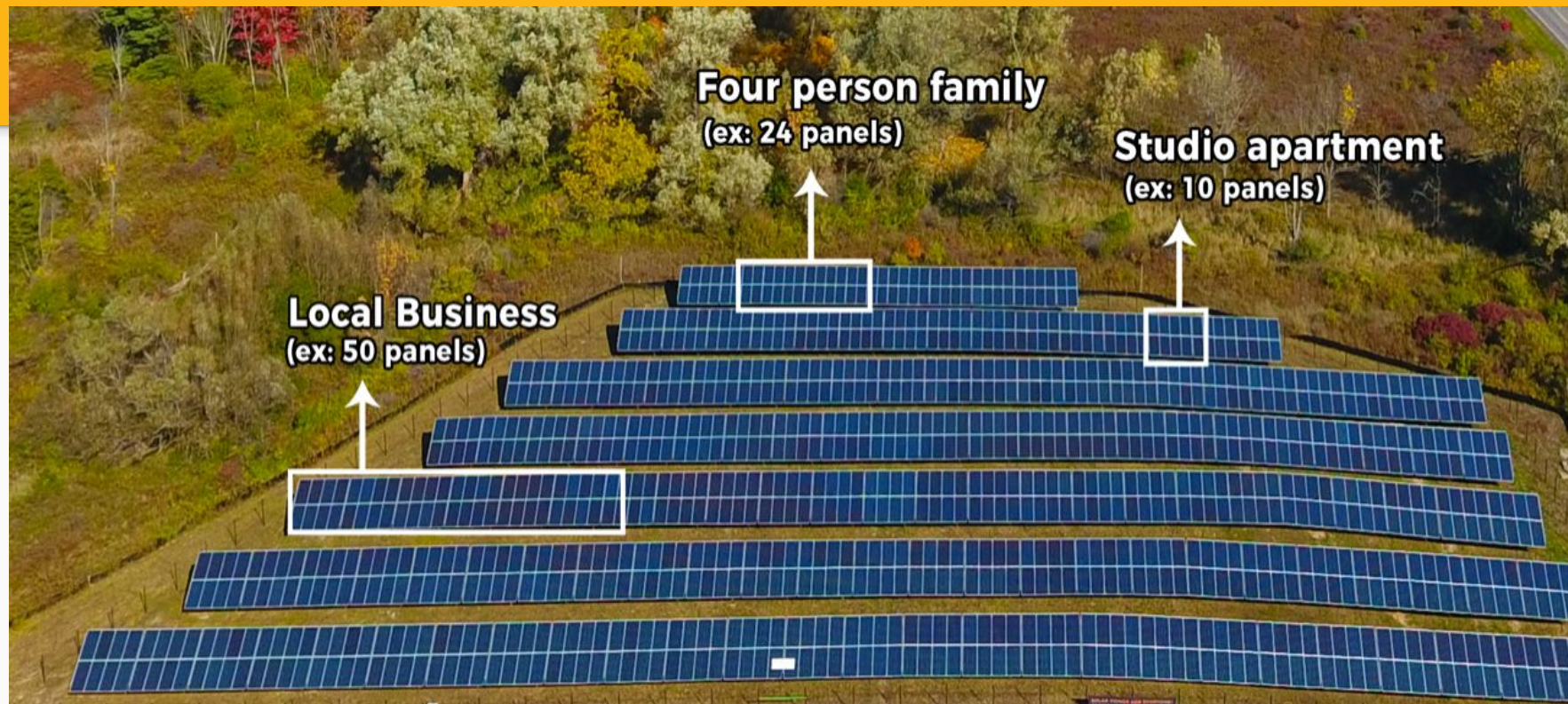
- Will cover project up to 60,000 btu/heating as of late November.
- Available to homeowners with under 80% of area median income
- 1-4 unit residential only
- Only **non-natural gas** homes are eligible & must be insulated.
- Stackable with other incentives
- Only includes heat pumps

Description	Incentive Type	EmPower	AHP
Air Source Heat Pump	\$/10,000 btu	+\$3,000	+\$1,500
Ground Source Heat Pump	\$/10,000 btu	+\$3,800	+\$3,800
Heat Pump Water Heater	\$/unit	Normal EmPower	\$975
Panel Box Upgrade/ Distribution Improvements	≤ 100 amps	Up to \$2,000	50% of cost up to \$1,000

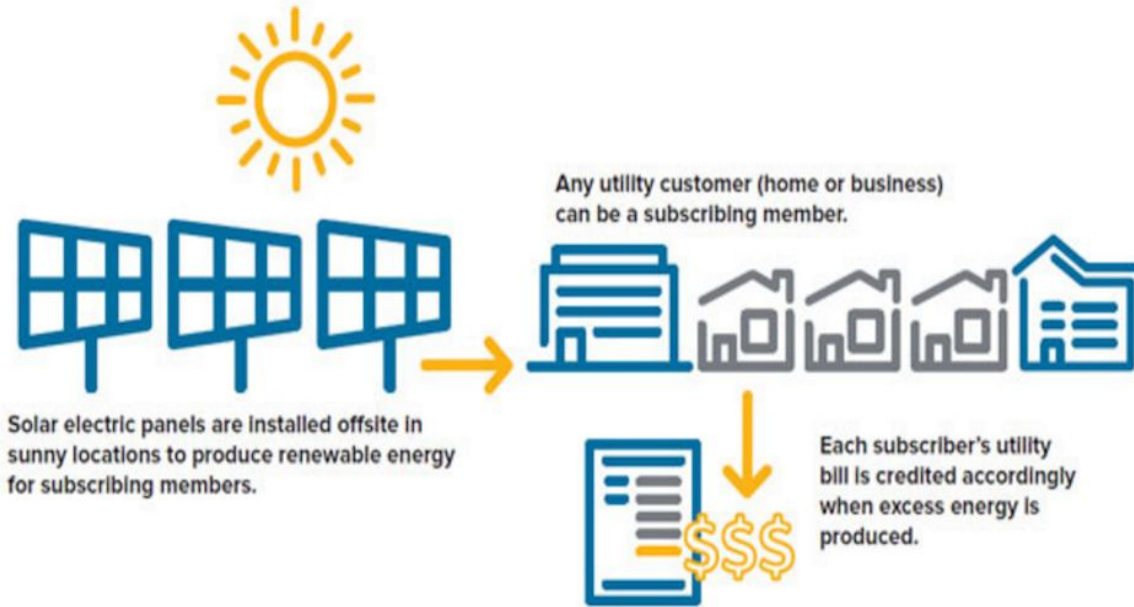
# What's the Process For Participating?

1. Sign up for a home energy assessment (and/or)
2. Sign up for site assessment from HSST installer(s)
3. Receive a quote for energy improvements
4. Sign contract for desired systems (if any)
5. Apply for incentives/financing (if applicable)
6. Complete installation work

# Community Shared Solar



# Benefits and How It Works



- Join with no upfront cost or fees
- Receive 20% savings annually
- Support locally produced renewable electricity



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Questions?

# Thank You!



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