

2020 AWARDS

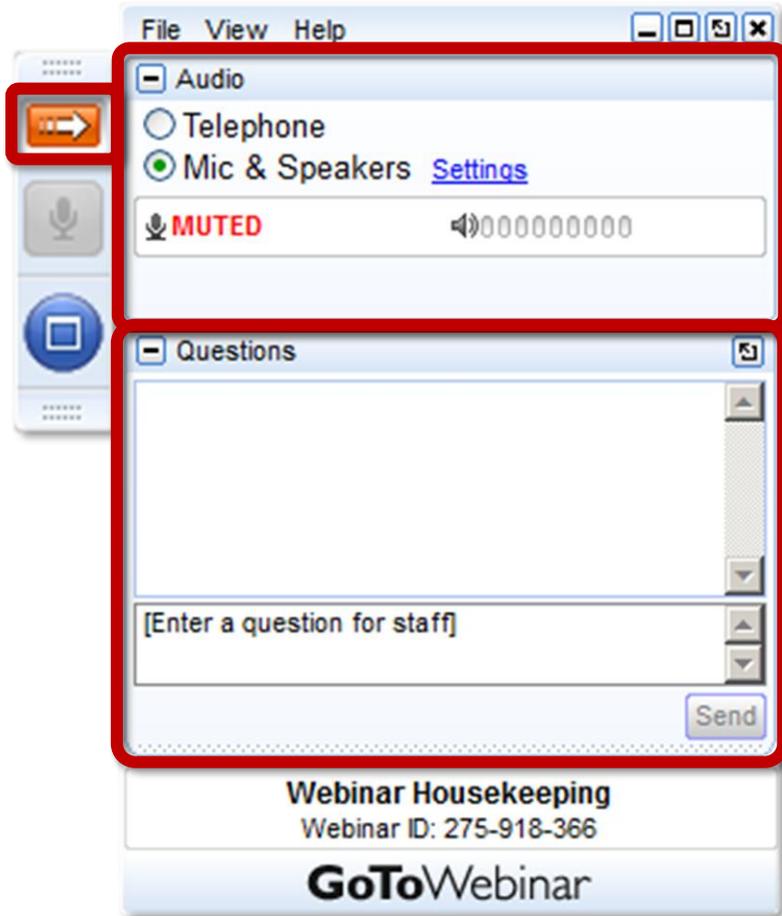
# State Leadership in Clean Energy

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## State Leadership in Low-and-Moderate- Income Solar Energy, Featuring Massachusetts, Michigan and Oregon

July 23, 2020

# Housekeeping



Join audio:

- Choose Mic & Speakers to use VoIP
- Choose Telephone and dial using the information provided

Use the orange arrow to open and close your control panel

Submit questions and comments via the Questions panel

This webinar is being recorded. We will email you a webinar recording within 48 hours. This webinar will be posted on CESA's website at [www.cesa.org/webinars](http://www.cesa.org/webinars)

# CleanEnergy States Alliance

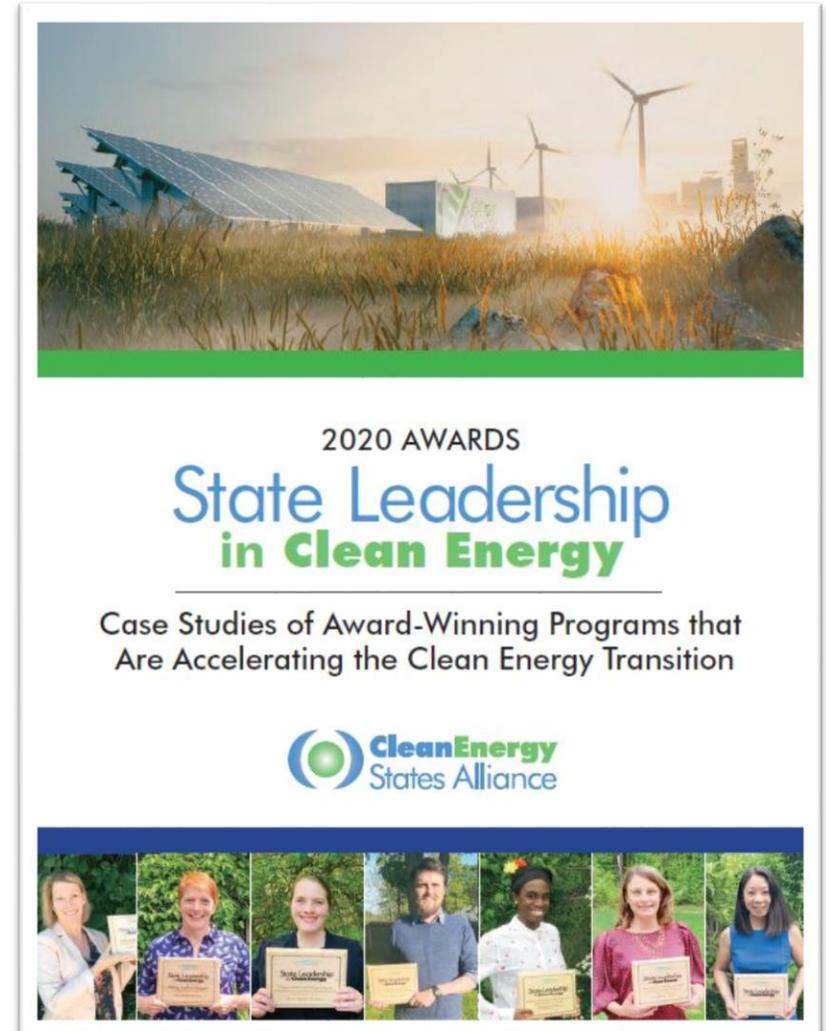


# 2020 State Leadership in Clean Energy Awards

- The California Energy Commission (CEC)'s **Renewable Energy for Agriculture Program (REAP)**
- Energy Trust of Oregon's **Inclusive Innovation Project**
- Massachusetts Clean Energy Center and Massachusetts Department of Energy Resources' **Mass Solar Loan Program**
- Michigan Department of Environment, Great Lakes, and Energy's **Michigan Solar Communities – Low- to Moderate-Income Access Program**
- New York State Energy Research and Development Authority's (NYSERDA) **Offshore Wind Program**
- Sacramento Municipal Utility District's (SMUD) **Energy StorageShares**

**Read case studies on the 2020 award winners at:**

<https://www.cesa.org/resource-library/resource/2020-slice-report/>



# Webinar Speakers

- **Kelsey Read**, Senior Program Manager, Massachusetts Clean Energy Center
- **Lizzie Rubado**, Program Strategies Manager – Renewables, Energy Trust of Oregon
- **Lisa Thomas**, Clean Energy Engineer, Michigan Department of Environment, Great Lakes, and Energy
- **Julie Staveland**, State Energy Program Specialist, Michigan Department of Environment, Great Lakes, and Energy
- **Warren Leon**, Executive Director, Clean Energy States Alliance (moderator)



# STATE LEADERSHIP IN LOW- AND-MODERATE-INCOME SOLAR ENERGY

## MASS SOLAR LOAN

JULY 2020



# MASSCEC MISSION

Grow the state's clean energy industry while helping to meet the Commonwealth's clean energy and climate goals.

## INVEST

Invest in programs to increase renewable energy adoption by residents, businesses and communities.

## CONNECT

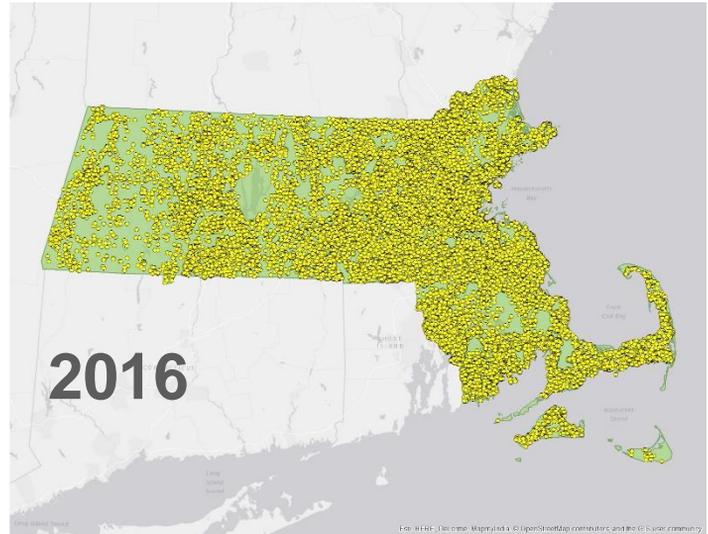
Connect employers, job seekers, students, communities and investors to the clean energy industry.

## INNOVATE

Help to spur innovation through infrastructure, funding and technology development support.

# REACHING LOW-MODERATE INCOME (LMI) COMMUNITIES IN MASSACHUSETTS

- Solar has seen remarkable growth over past 10 years
- MassCEC programs designed to grow and support industry
- Programs for LMI community
  - ✓ Mass Solar Loan
  - ✓ ACRE (Combined Heat Pump and Solar Programs)
  - ✓ State Incentive Program (SMART) – LMI Adder (\$0.03/kWh)



# MASS SOLAR LOAN PROGRAM

- Sparked by 2013 DOER study demonstrating greater **benefits of direct solar ownership** over third party owned solar
- Extensive **stakeholder engagement** with solar and lending industries to look at best practices and develop structure
- Designed to **expand financing options** and **increase access** to solar for income qualified residents
- Partnered with 17 local lenders to **leverage expertise and local capital**
- Over 100+ installers helping to reach underserved markets



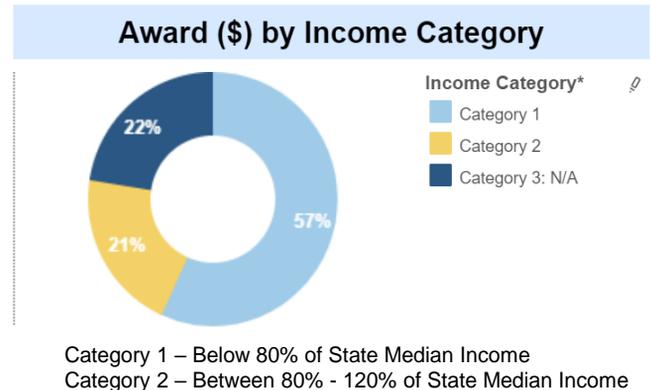
# MASS SOLAR LOAN PROGRAM

- Launched in December 2015 – connecting customers purchasing solar with local lenders
- Lenders offer solar loan products with standard underwriting and certain set loan requirements
- Three types of loan support incentives available – focused on reducing financing costs and expanding access to income or credit limited residents



# MASS SOLAR LOAN PROGRAM

- Over the course of the program incentives have stepped down to focus support on income eligible participants
  - Originally \$30 million program, some incentives available for all participants
  - Added \$10 million to focus on low and moderate income customers (December 2017)
  - Added \$5 million to focus on low income customers (September 2019)



# LOAN SUPPORT INCENTIVES

## INTEREST RATE BUY DOWN (IRBD)

- 1.5% interest rate buy-down (IRBD) available for Low Income Customers
  - Prior to Dec 13<sup>th</sup> 2017 IRBD was available to all customers

## INCOME BASED LOAN SUPPORT (IBLS)

| Household Size | Category 1 (capped at \$10,500)<br>Below 80% of State Median Income<br>(Eligible for 30% reduction of loan principal) |
|----------------|---|
| 1              | \$49,813  |
| 2              | \$65,140  |
| 3              | \$80,468  |

## LOAN LOSS RESERVE (LLR)

- Allocation for each lender established, preloaded with \$50,000, added to based on borrower credit score

| Loan Class | Credit Range     | % of Loan Allocated | % of Principal Eligible for Recovery |
|------------|------------------|---------------------|--------------------------------------|
| A          | 720 and above    | 0%                  | 0%                                   |
| B          | Between 681 -719 | 10%                 | 80%                                  |
| C          | 680 and Below    | 20%                 | 90%                                  |

# LOAN REQUIREMENTS

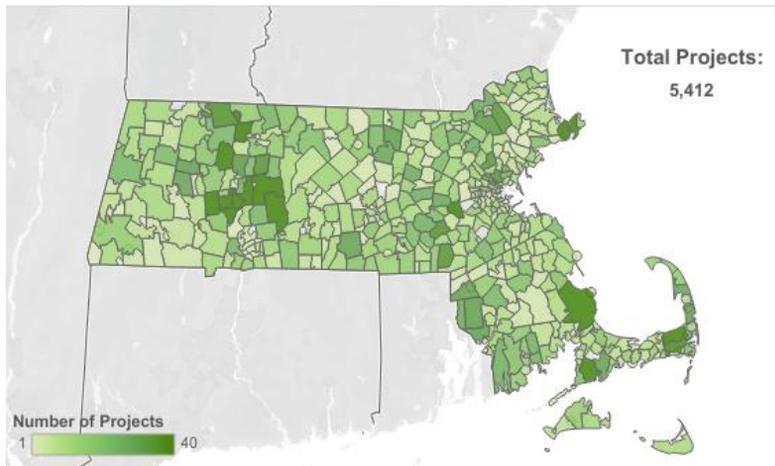
- Fixed-rate loans with capped closing costs (\$500)
- 10-year term required (offering range 3-20 years)
- WSJ Prime + 2.75% interest rate limit (currently 6%)
- Secured or unsecured
- Construction loan model – two disbursements 35% (with up to a 12-month interest only period) and 65% (then transfers to full P&I)
- Lenders required to offer a minimum of one free re-amortization to allow customers to lower loan payments after applying the tax credit or principal reduction

# PROGRAM RESULTS

- More than 6,200 projects applied to date
- Over 5,400 loans closed
  - 2,800 supporting Income Qualified residents
- \$176 Million in loan value
- \$39 Million in awards
  - 78% Income qualified

| Lender Name                             | Projects     | Total Loan Amount    |
|---|--------------|----------------------|
| UMassFive College Federal Credit Union  | 1,723        | \$55,212,243         |
| Avidia Bank                             | 874          | \$30,181,362         |
| Coastal Heritage Bank                   | 803          | \$26,326,338         |
| Naveo Credit Union                      | 475          | \$12,904,267         |
| First Citizens' Federal Credit Union    | 413          | \$13,466,510         |
| North Brookfield Savings Bank           | 255          | \$8,698,850          |
| Bank Five                               | 222          | \$7,469,260          |
| Franklin First Federal Credit Union     | 139          | \$4,275,545          |
| Clinton Savings Bank                    | 119          | \$3,345,591          |
| North Easton Savings Bank               | 114          | \$3,618,288          |
| Sharon and Crescent United Credit Union | 87           | \$2,373,831          |
| Family Federal Savings                  | 70           | \$1,875,916          |
| Stoughton Co-Operative Bank             | 46           | \$1,407,474          |
| Shrewsbury Federal Credit Union         | 41           | \$1,311,791          |
| East Cambridge Savings Bank             | 14           | \$286,024            |
| Southern Mass Credit Union              | 9            | \$229,506            |
| Greenfield Cooperative Bank             | 8            | \$283,758            |
| <b>Totals</b>                           | <b>5,412</b> | <b>\$173,266,554</b> |

# PROGRAM RESULTS



46 MW of residential solar across  
97% of MA municipalities

## Typical Project

- \$32,000 average loan
- 8.4 kW average project
- \$3.80 per watt

Median Unsubsidized interest rate  
of 5.5%

# LOAN PERFORMANCE

- Loan performance to date has been strong
- Default rate of 0.3% on over 5,000 loans
- Limited correlation to Income
  - Loans in Below 80 % Income Category:  
Have a 0.4% default rate and a lower delinquency rate (3.0% - 30 days late) than higher incomes (5.2%)
- Better correlation to FICO (2.2% default rate below 680)
  - Caveat- this is distorted by the Loan Loss Reserve

| Income Category (% of Median) | Count of Projects | Average Months Seasoning | Count 30 Days Late | % 30 Days Late | Count Defaulted | % Defaulted |
|-------------------------------|-------------------|--------------------------|--------------------|----------------|-----------------|-------------|
| Not Income Qualified          | 2435              | 29                       | 29                 | 5.2%           | 4               | 0.2%        |
| 80 to 120%                    | 1445              | 23                       | 23                 | 3.5%           | 7               | 0.5%        |
| Below 80%*                    | 969               | 24                       | 24                 | 3.0%           | 4               | 0.4%        |

\*Over 12% (600 loans) have fully paid off

# QUESTIONS

Kelsey Read

[kread@masscec.com](mailto:kread@masscec.com)

[solarloan@masscec.com](mailto:solarloan@masscec.com)

[www.masssolarloan.com](http://www.masssolarloan.com)





# Oregon's Inclusive Innovation Project

CESA Webinar – SLICE Awards

July 2020



# About Energy Trust

Independent  
nonprofit

Serving 1.6 million customers of  
Portland General Electric,  
Pacific Power, NW Natural,  
Cascade Natural Gas and Avista

Providing  
access to  
affordable  
energy

Generating  
homegrown,  
renewable  
power

Building a  
stronger Oregon  
and SW  
Washington

# I'm Lizzie Rubado

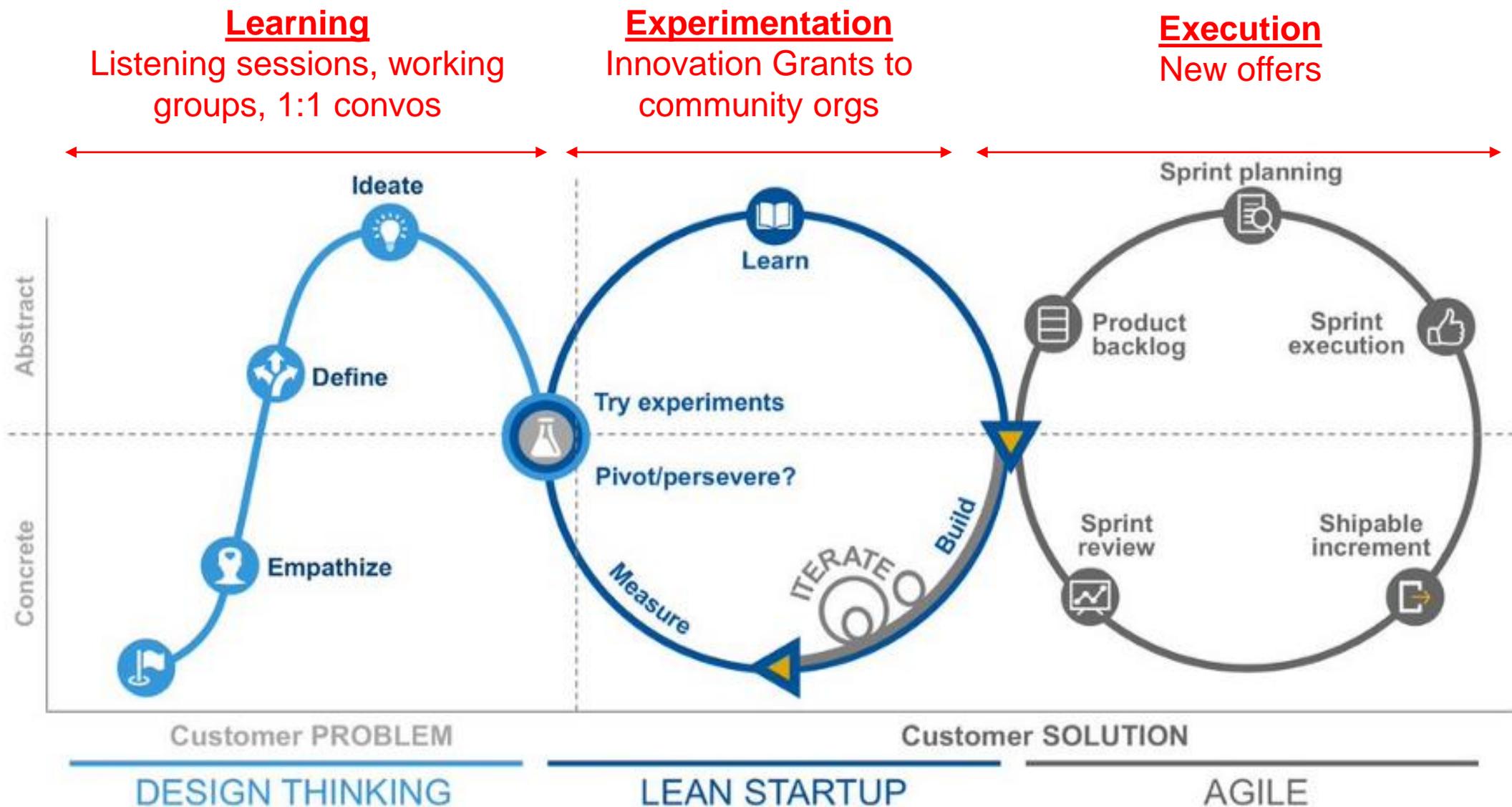
- Program Strategies Manager, Renewable Energy
- This involves:
  - Innovation, strategy, program design
  - Rooftop and community solar, biopower, small hydro



# Why I do this



# Applying design thinking to solar program design



# The Inclusive Innovation Journey



## Realization.

We're not serving everyone.  
We need to do better.



## Acknowledgment.

We have big blind spots. We are missing critical expertise.



## Learning.

Gatherings & meetings around the state.  
Shared learning with community organizations  
via work group.



# Engaging communities on many levels

1. Community listening sessions
2. Working group
3. 1:1 meetings with community organizations
4. Working group 2.0
5. Ongoing relationships

# The Inclusive Innovation Journey



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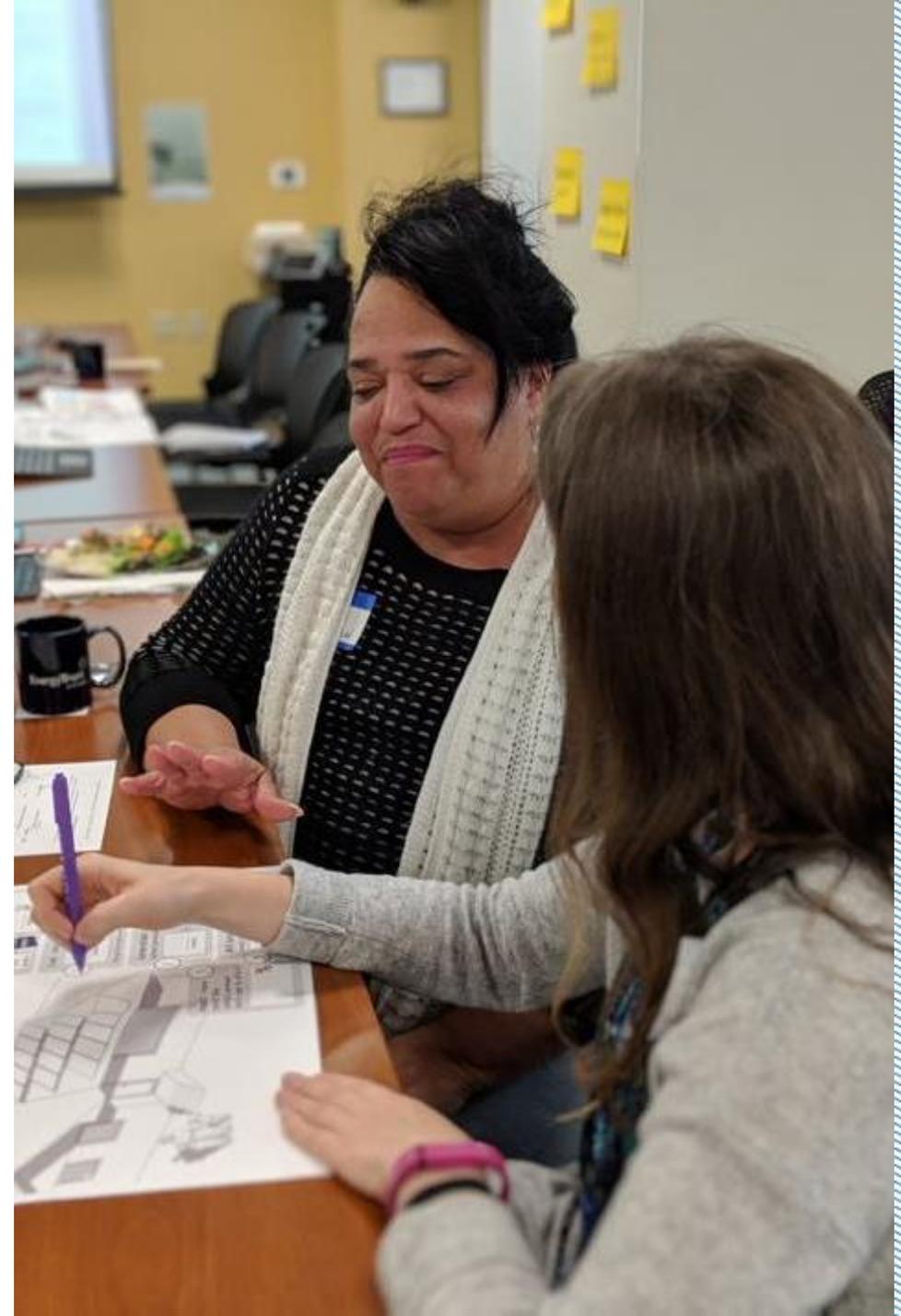
## Experimentation.

Community organizations  
and communities  
empowered to ideate.



# Innovation Grants

- Goal: Empower and support communities to develop their own program and project ideas
- Amount: \$81,600 awarded to nine groups
- Outcomes:
  - Blend of delivery models
    - Multifamily, single family, manufactured housing, rooftop and community solar
  - Mix of innovations
    - Aggregated net metering, strategic partnerships, Individual Development Accounts (IDAs), targeted education
  - Continued support for replicable models



# The Inclusive Innovation Journey





**Our Journey Led to New, Inclusive Offers  
and Opportunities**



## Community solar development assistance

- Funding to defray the cost of early, higher-risk project development work
- Available to community-led projects that primarily will benefit underserved customers
- Nonprofit or public entities compensated for time spent on development



**40% of the projects  
are successfully built**

# Solar Within Reach

- Higher incentives for income-qualified homeowners to install rooftop solar
- Special pool of solar trade allies with additional training and service requirements
- Targeted campaigns in collaboration with community organizations (*on hold*)

**100 participants by  
the end of 2020**





## In the works

- Commercial companion to Solar Within Reach for:
  - Affordable multifamily
  - Orgs serving people with low income
  - Orgs serving communities of color
  - Tribes
  - Majority-owned women/minority businesses
- Installation funding for community-led community solar projects
- Development assistance funding for equitable solar projects

## Lessons learned

1. Deep and meaningful engagement
2. Empower participation
3. Listen! and course correct
4. Support local innovation





Thank you

Lizzie Rubado, Program Strategies Manager

[Lizzie.rubado@energytrust.org](mailto:Lizzie.rubado@energytrust.org)

[energytrust.org](http://energytrust.org)



MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

# Michigan (MI) Solar Communities – Low to Moderate Income Access

By:

Lisa Thomas and Julie Staveland

Energy Services

# How it Started

- What is CELICA?
  - The Clean Energy for Low Income Communities Accelerator (CELICA) is a voluntary partnership between the U.S. Department of Energy and state/local governments.
- What is the goal?
  - To provide access to renewable energy and demonstrate a wide range of locally designed solutions for low income

# MI Solar Communities – Low to Moderate Income Access



- Access alternative energy
- Address low-income energy challenges
- State gov. and energy service providers partnerships
  - MI Department of Environment, Great Lakes and Energy
  - Local Community Action Agency
  - MI Department of Health and Human Services
  - Host Local Electric Utility
  - U.S. Department of Energy
  - MI Public Service Commission
- Sustainable Value Added Programs and Services (VAPS)

# Cherryland Electric Cooperative

## Phase 1

### Phase 1

#### Who:

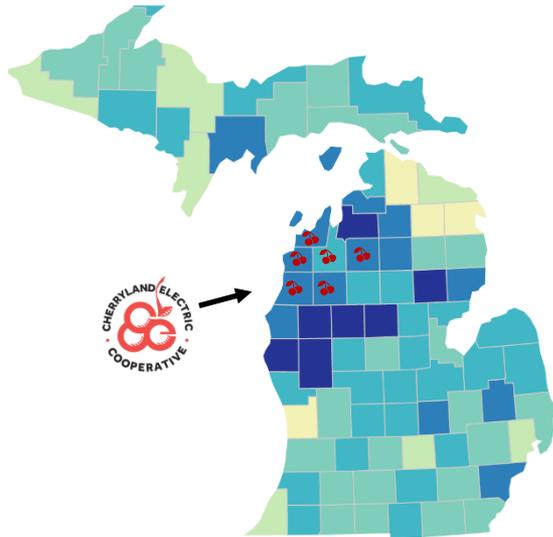
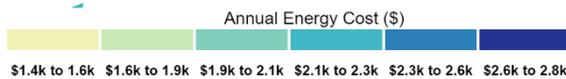
- Partners: Michigan Energy Office (MEO), Michigan Department of Health and Human Services (DHHS), Cherryland, & Northwest Michigan Community Action Agency (Northwest)
- Subscribers: Previously weatherized, income-qualified (at or below FPL) households

#### What:

- Each household received the credits for the energy produced by 9 solar panels (averaging \$29/month)
- The 450 Panels (2 MW system) were purchased entirely by funds from MEO and Cherryland
- Income verified by Northwest/DHHS every year for maximum of 25 years

#### When:

- Partners signed the agreement in October 2017
- First credits received by subscribers in March 2018



Source: Low-Income Energy Affordability Data (LEAD) Tool  
<https://www.energy.gov/eere/slsc/maps/lead-tool>

# Advantages



PARTNERSHIPS  
WILLINGNESS

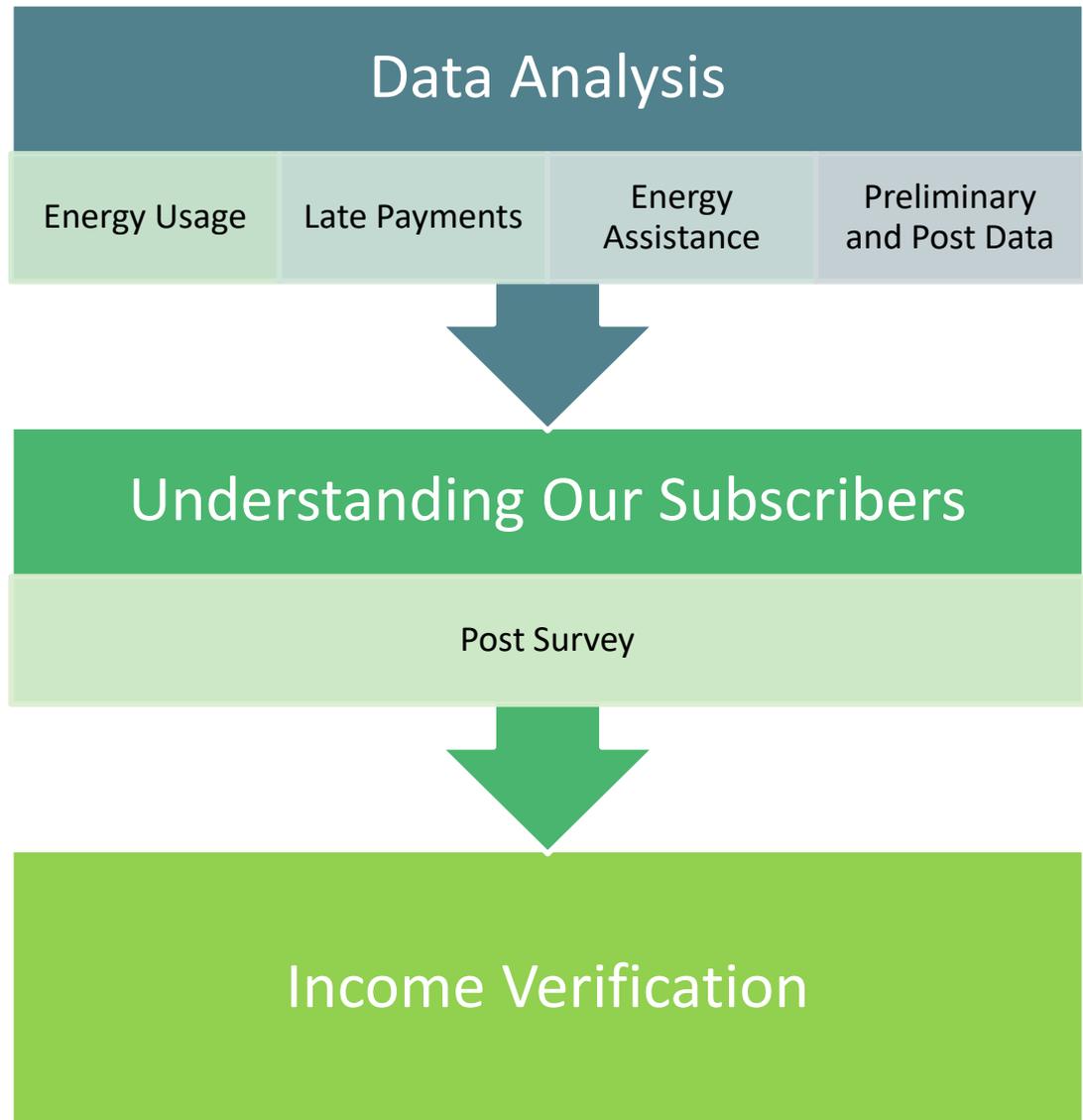


ACHIEVE PROJECT  
GOAL



ADDRESS ENERGY  
BURDEN & COST

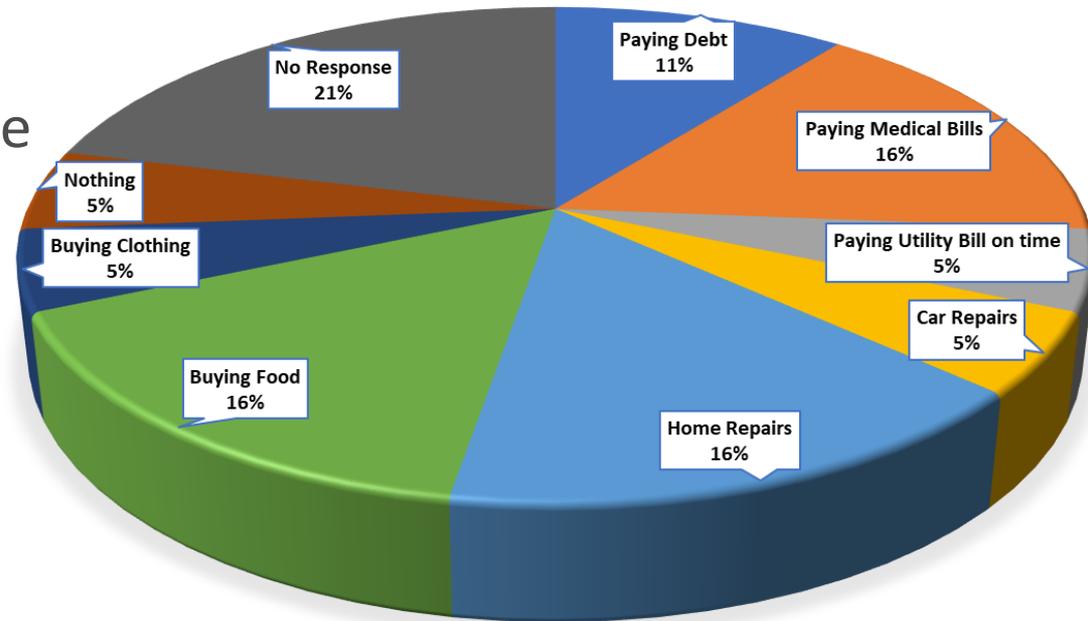
## Lessons Learned from Phase 1



## WHAT ARE YOU DOING WITH YOUR UTILITY BILL SAVINGS?

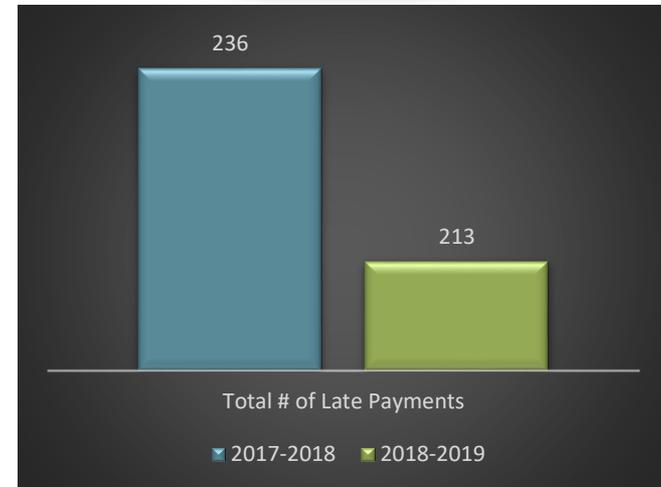
# Cherryland Survey Results

- 10% Late Payment Decrease
- 1% Energy Decrease
- Survey Comments:
  - Less Stress
  - Warmer & Healthier Home Temperature



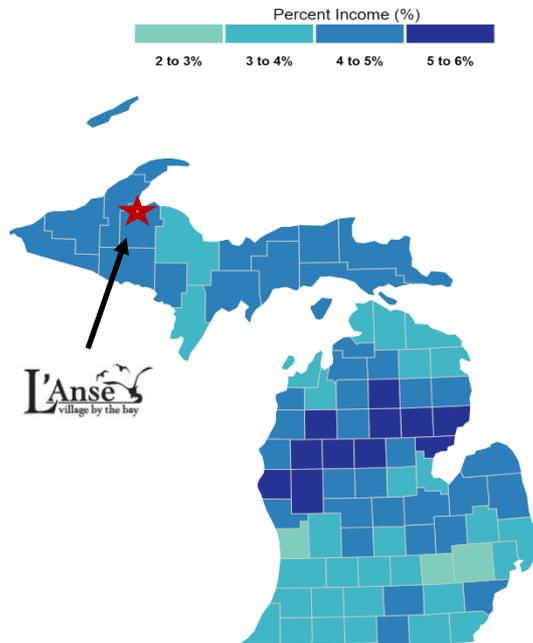
## Subscriber Benefits

- Receive weatherization
- Receive solar credits
- Become energy self-sufficient



# Village of L'Anse

## Phase 2



### Who:

- Partners: Energy Services, Michigan DHHS, Village of L'Anse , & Baraga Houghton Keweenaw Community Action Agency (BHK)
- Subscribers: Previously weatherized, income-qualified (at or below 200% FPL) households

### What:

- Each household received the credits for the energy produced by 10 solar panels or fewer depending on household usage (averaging \$21-\$23/month)
- The panels are paid for by contributions from Energy Services and a subscriber on-bill fee of \$.90/panel/month
- Income verified by BHK/DHHS every five years for maximum of 25 years
- Community solar array size 200 panels, 110 kW system

### When:

- Partners signed the agreement in April 2019
- First credits received by subscribers in December 2019

Source: Low-Income Energy Affordability Data (LEAD) Tool  
<https://www.energy.gov/eere/slsc/maps/lead-tool>

# Advantages



SUBSCRIBER  
PARTICIPATION SURVEY



SOCIAL ENGINEERING



ON-BILL FINANCING

## Lessons Learned from Phase 2



Partnership Responsibility

Understanding Our Subscribers

Pre & Post Survey

Transferability

# CELICA Phase III

## Investor Owned Utility

- Preliminary Discussions With Partners
- Potentially Launch in Fall 2020

## Project Design

- Build Upon Phase 2
- Subscribers Within Service Territory
- Improve Data Analysis



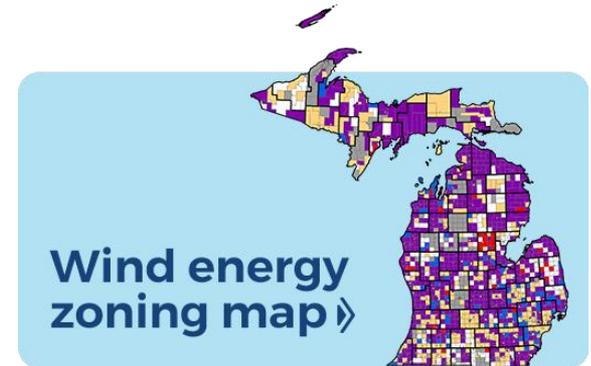
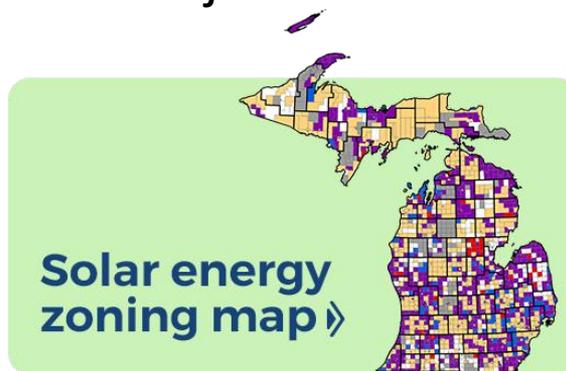
# Michigan Zoning Database

| K   | L                                      | M            | N                | O             | P                 | Q                 |
|---|--|--------------|------------------|---------------|-------------------|-------------------|
| Zoning Authority  | Renewable Energy Zoning Considerations |              |                  |               |                   |                   |
| Zoning Ordinance Location   | PDF Ordinance Available                | Utility Wind | Small-Scale Wind | Utility Solar | Small-Scale Solar | Electric Vehicles |
| <a href="http://www.discovernc">http://www.discovernc</a>         | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="http://caledoniatwp.n">http://caledoniatwp.n</a>         | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="https://curtistownship">https://curtistownship</a>       | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="http://www.greenbush">http://www.greenbush</a>           | Yes                                    | Yes          | Yes              | No            | Yes               | No                |
| <a href="http://gustintwp.com/">http://gustintwp.com/</a>         | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="https://www.harrisvill">https://www.harrisvill</a>       | Yes                                    | Yes          | Yes              | No            | Yes               | No                |
| <a href="https://harrisvilletown">https://harrisvilletown</a>     | Yes                                    | No           | No               | No            | No                | No                |
| <a href="http://www.hawestow">http://www.hawestow</a>             | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="http://www.discovernc">http://www.discovernc</a>         | Yes                                    | Yes          | Yes              | No            | No                | No                |
| <a href="https://incolnmi">https://incolnmi</a>                   | Yes                                    | No           | No               | No            | No                | No                |
| <a href="http://www.millettownship">http://www.millettownship</a> | Yes                                    | Yes          | Yes              | No            | Yes               | No                |
| <a href="http://www.mitchellto">http://www.mitchellto</a>         | Yes                                    | Yes          | Yes              | No            | No                | No                |

**Zoning database** »

Planning and zoning for renewable energy siting is an important step toward creating stronger, more resilient communities.

Grant with University of Michigan to catalog the zoning of Michigan's 1,856 jurisdictions.





MICHIGAN DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY

## Contact Us

Lisa Thomas [ThomasL17@Michigan.gov](mailto:ThomasL17@Michigan.gov) 517-282-6646  
Julie Staveland [StavelandJ@michigan.gov](mailto:StavelandJ@michigan.gov) 517-420-8544

### Energy Services

# The 2020 State Leadership in Clean Energy Award Winners



Learn more about the award winners at:

<https://www.cesa.org/projects/state-leadership-in-clean-energy/2020-awards/>

# Upcoming Webinars

**New Jersey's Plan for Achieving 100% Carbon-Neutral Electricity**

*Wednesday, July 29, 3-4pm ET*

**Expanding Grid Capacity with Energy Storage in Decorah, Iowa**

*Thursday, July 30, 1-2:30pm ET*

**State Leadership in Clean Energy: NYSERDA's Offshore Wind Program**

*Tuesday, August 4, 2-3pm ET*

**State Leadership in Clean Energy: SMUD's Energy StorageShares Program**

*Thursday, August 20, 2-3pm ET*

Read more and register at: [www.cesa.org/webinars](http://www.cesa.org/webinars)

# Thank you for attending our webinar

Warren Leon

Executive Director, CESA

[wleon@cleanegroup.org](mailto:wleon@cleanegroup.org)

Learn more about the 2020 State Leadership in Clean Energy Awards at

<https://www.cesa.org/projects/state-leadership-in-clean-energy/2020-awards/>

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