



AKWESASNE HOUSING AUTHORITY

Community-Scale AHA Go Solar and Net Zero Initiatives

November 19, 2019

Presented By:

Elizabeth Jacobs & John Clancy

Overview



- Background regarding Tribe and AHA, and AHA's prior clean energy initiatives.
- AHA "Go Solar" Initiative.
- AHA "Net Zero" Initiative.
- Issues faced regarding larger solar project.
- Steps to address issues.
- Status of initiatives and next steps.

Saint Regis Mohawk Tribe



Contiguous Mohawk Community spanning parts of:

- One state (NY);
- Two provinces (ON & PQ); and
- Two countries (US, CA).



“It Gets Cold up Here”



Residential Heating is one of the largest economic factors in maintaining affordable housing, especially among the elderly in the community.

Akwesasne Climate

- Zone 6
- 8,089 HDDs
- 376 CDDs
- Winter Design: -15°F
- Summer Design: $85^{\circ}\text{F}/71^{\circ}\text{F}$ db/wb



Akwesasne Housing Authority



The Saint Regis Mohawk Tribal Council created the Akwesasne Housing Authority (AHA) by ordinance in 1984 for the purposes of:

- Remediating unsafe and unsanitary housing conditions that are injurious to the public health, safety and morals;
- Alleviating the acute shortage of decent, safe and sanitary dwellings for low income persons; and
- Providing employment opportunities through the construction, improvement, extension, alteration or repair and operation of low-income dwellings.

Akwesasne Housing Authority



- AHA has constructed 405 homes.
- AHA has also constructed 41 elderly (Sunrise Acres) rentals for low-income members since 1984.
- AHA pays all utilities for Sunrise Acres.

AHA's Rise to Green



- AHA has spearheaded **Sustainable Design Practices** and **Renewable Energy** for all of its projects as a matter of policy.
- AHA implemented these policies in its Sunrise Acres campus.
- It has also been advocating for similar policies in the broader Akwesasne Community.

Photovoltaic Systems in Sunrise Acres II



- 6 ground mounted arrays – 30 kW Total
- Training Center – 5 kW
- 5 apartment buildings – 5 kW each
- Net metering
- Provides approximately 20% of electrical energy consumed by the buildings



Initial Partnership with DOE



- 2015-2016 - AHA realized a valuable partnership with the U.S. Department of Energy/Indian Energy, NREL & Sandia Labs.
- Provided excellent TA to develop the Tribe's draft Strategic Energy Plan for our community to jump start efforts.

DOE T/A ~ Planning Towards 2025 Energy Vision



Back Row: Noah Ransom Jr., Michel Simon, Shelley Jacobs, Ernie Thompson, John MacArthur, Barry Halperin.
Front Row: Theresa Cole, Cecilia Cook, Barbara Lazore, Retha Herne, Melanie Conners, Elizabeth Jacobs, Colleen Thomas.

Responsive structures that meet our community needs.

- Accountability for traditionally held principles that conserve families' economic resources.

Being the community we want to be.

- Healthy, affordable, and energy efficient community.

Energy independence

- Unified international systems managed efficiently and self-supporting.

Backup by Tribal Government



- Saint Regis Mohawk Tribe (SRMT)
 - Leadership in full support of AHA efforts
 - Future wish to create an energy office within SRMT
- AHA's High Energy Efficiency Initiative
 - Leveraging of NYS Energy Funds (NYSERDA), Federal ICDBG, IHBG – home energy efficiency project
- Forward movement of AHA and its energy efficiency and renewable energy initiatives – effects felt throughout and now expected by the community

AHA High Energy-Efficiency Initiative



- Energy efficiency and other related housing improvements for existing Tribal housing.
- Funded with Indian Community Development Block Grant (ICDBG), Indian Housing Block Grant, and New York State Energy Research and Development Authority (NYSERDA) Incentives.

Work Performed Under AHA High Energy-Efficiency Initiative



- Air sealing;
- Basement wall demo;
- Duct sealing, installation, modification and balancing;
- Furnace adjustment;
- Installation of gable vents, bath fans, trap in bathroom plumbing;
- Attic insulation;
- Chimney removal;
- Basement window replacement;
- Gutter replacement;
- Rim joist upgrades;
- Smoke & CO detector installation;
- Spray Foam application above grade basement walls, floor of overhang, overhangs, rim joists;
- Venting bath fans, dryer and kitchen exhaust to exterior; and
- Water heater replacement.

DOE Support: AHA Community Scale Go Solar and AHA Net Zero Initiatives



Project Summary

- SRMT/AHA as part of their strategic energy plan and long-term energy vision, embraced goals that include working towards net zero status by employing the installation of EEMs and green energy systems.
- \$1.0 million (Go-Solar) and \$500,000 (Net Zero) DOE funding to help meet these goals.
- Solar tax credit investor and NYSERDA funding to assist with cost share.

Project Objectives



- Decrease reliance on fossil fuels and reduce AHA's, the Tribe's, and Tribal members' environmental footprint;
- Increase AHA's, the Tribe's, and Tribal members' energy self-sufficiency;
- Add diverse, complementary green energy systems and EEMs;
- Significantly lower energy costs for Tribal members and AHA;
- Provide a model for low-income Tribal energy projects;
- Create jobs and mentoring opportunities for Tribal members.

Initiative #1 AHA “Go Solar” Program



- Funded from DOE Tribal Energy and HUD ICDBG Programs.
- 30+ kW on-site solar addition to Sunrise Acres II.
- Community Solar:
 - 787 kW DOE-Funded Array.
 - Additional 459 kW funded by HUD ICDBG.
 - Remainder of 25 acre site to be developed as Solar Farm for net metering additional AHA buildings and Tribal residences.
- Additional on-site solar.

AHA Solar Farm Site



Community Distributed Generation



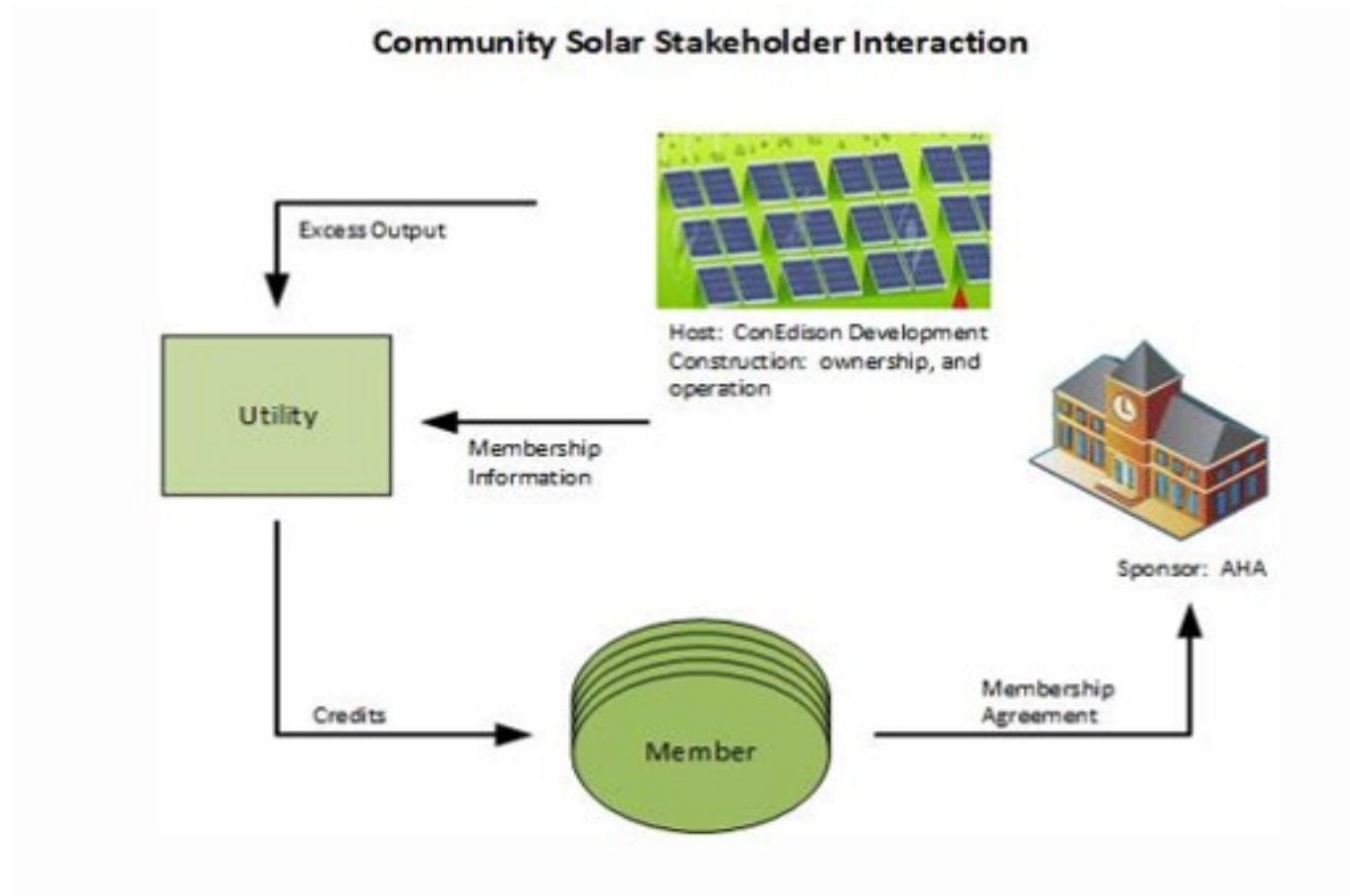
- Tribal member residences and other buildings or Reservation can participate under New York’s Community Distributed Generation (Community DG) program.
- Community DG projects:
 - are located behind a non-residential host utility meter;
 - generate “value stack” credits for electricity production in excess of the host’s usage; and
 - allocate these credits to the project’s members pursuant to the applicable utility tariff.

Community Distributed Generation



- Tribal buildings and member residences can participate under New York's Community Distributed Generation (Community Solar) program.
- Community Solar projects:
 - generate solar billing credits for electricity production; and
 - allocate these credits to the project's members pursuant to the applicable National Grid tariff.

Community Distributed Generation



Community Distributed Generation Logistics



- Participation of Sunrise Acres and Akwesasne Boys and Girls Club.
- Low-income residents are offered opportunity to subscribe.
- The subscription agreement allows them to receive a certain percentage of the production from the solar facility.
- National Grid provides billing credits in dollars based on production each month.

Billing



- Subscriber continues to receive monthly bill from National Grid that includes a new line that is a Community Solar Credit (in dollars).
- So, the utility bill total is reduced by the Community Solar Credit. Pay this utility bill as usual.
- Subscriber then receives an additional monthly invoice from AHA that bills the subscriber for the Community Solar Credit at a discount.
- Make payment or lose subscription.

Billing – Sample Utility Bill



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UtilityBill

www.utilitybill.com

CUSTOMER SERVICE
1-800-900-1000

AUTOMATED SERVICES
1-800-700-1100

GAS EMERGENCIES
1-800-500-1200

OUTAGE AND ELECTRIC EMERGENCIES
1-800-600-1300

CORRESPONDENCE ADDRESS
50 ELECTRIC AVE
ALBANY NY 12100

DATE BILL ISSUED
Feb 15, 2018

Electric Usage History:
This will be important information to share with your installer to help determine the system size for your home.

ELECTRIC USAGE HISTORY (KWH)

Month	Usage (kWh)
F	180
M	220
A	200
M	250
J	200
J	220
A	180
S	180
O	180
N	350
D	320
J	300
F	180

UTILITYBILL
50 Electric Ave.
Albany NY 12100

JOHN SMITH
555 MAIN STREET
ALBANY NY 12100

UTILITY BILL
50 ELECTRIC AVE.
ALBANY NY 12100

0000009&765432 7777700000&&&&&9999

SERVICE FOR
JOHN SMITH
500 MAIN ST
ALBANY NY 12000

BILLING PERIOD
Jan 14, 2018 to Feb 12, 2018

ACCOUNT NUMBER
00001-2345

ACCOUNT BALANCE

Previous Balance		\$ 80.55
Payment Received	THANK YOU	- 80.55
Current Charges		
	Amount Due	\$ 40.94

To avoid late payment charges of 15%, \$40.94 must be received by Mar 13, 2018

SUMMARY OF CURRENT CHARGES

	DELIVERY SERVICES	SUPPLY SERVICES	OTHER CHARGES/ADJUSTMENTS	TOTAL
Electric Service	31.96	39.38		71.34
Other Charges/Adjustments				
Community DG Credit			-30.40	
Total Current Charges	\$31.96	39.38	-\$30.40	\$40.94

UtilityBill buys low cost energy and receives a Residential Consumer Discount monthly payment from the Power Authority to be used as a benefit for residential customers. This bill reflects a savings of \$1.43 from these benefits.

PAYMENT CONCERNS? We're here to help you. We have several plans that can help you manage your energy bills. Go to www.utilitybill.com/paymentoptions to find out more or call us at 1-800-900-1000

WILL WE BE ABLE TO REACH YOU DURING A POWER OUTAGE? During a power outage, phones with a direct link to a local phone line are able to operate. Phones that are not directly linked (for example, wireless phones with answering machines) need electricity to make/receive calls. If you would like to register another phone number, such as a cell phone, as your account's primary phone number, please go to www.utilitybill.com/myaccount to update your information so that we may be able to reach you with important information during power outages.

KEEP THIS PORTION FOR YOUR RECORDS

RETURN THIS PORTION WITH YOUR PAYMENT

ACCOUNT NUMBER	PLEASE PAY BY	AMOUNT DUE
0000-55-4321	Mar 13, 2018	\$40.94

ENTER AMOUNT ENCLOSED

\$

Write account number on check and make payable to Utility Bill

Expected Outcomes



- Significant net savings on energy bills for low-income members and Boys & Girls Club.
- Training and jobs for tribal members during the installation of project.
- Environmental benefits including reduction in green house gas emissions, by reducing electricity use from fossil fuel.
- Serve as model for tribal and other communities to work towards energy self-sufficiency and affordable energy.
- Further the Tribe and AHA's commitment to environmental stewardship.
- Advance AHA and Tribe's goal to become energy self sufficient.



Initiative #2: AHA Net Zero

- Creation of three (3) net zero buildings
 - Two (2) new buildings for Sunrise Acres Phase III Expansion for Supportive Housing.
 - 6-Unit Homeless/Veterans Supportive Housing
 - 12-Unit Senior Supportive Housing
 - Renovate one (1) older existing facility:
 - Akwesasne Boys & Girls Club
- Participation in solar community distribution generation.

Sunrise Acres Senior Low-Income Housing



- Phase 1 – 1998, conventional construction
- Phase 2 – 2011 Sustainable Design, Solar PV
- Phase 3 – 2019 Sustainable Design, Remote net-metering



Sunrise Acres Phase 3 Expansion



- Project Goals:
 - Two new Buildings adjacent to Phase 1
 - Seniors Building – 10 one Bedroom & 2 two Bedroom Independent living apartments with common spaces including Kitchen, Community Room, Laundry Room, Offices and Library
 - Veterans Building – 4 one bedroom and 2 two bedroom apartments and common space including Lounge, Laundry and Offices.
 - Sustainable Design Strategies will include Off-site Solar PV with net metering.
 - Construction in 2018-2019.



CONCEPTUAL SITE PLAN

SCALE: 1/8" = 1'-0"


beardsley
architects + engineers

Energy Efficiency Strategies



- High Efficiency Envelope
 - Insulated Concrete Construction
 - High Efficiency Siding and Roofing Insulation
- High Efficiency HVAC Systems
- High Efficiency Window Units
- High Efficiency Lighting Fixtures
- Participation in Community Solar Project

Homeless/Veterans Supportive Housing



Sunrise Acres III – Supportive Housing for Homeless Veterans and Seniors with Special Needs



18 units of New Construction Serving Homeless Veterans and Seniors with Special Needs

Homeless/Veterans Supportive Housing



12 Unit Senior Supportive Housing



Installation of EEMs



Installation of Community Solar



Installation of Community Solar



Completed Tasks



- Request for proposals for solar contractor and investor.
- Solicitation of bids for Sunrise Acres III and its EEMs.
- Request for quotes for Akwesasne Boys & Girls Club EEMs.
- Selection of solar and EEM contractors and solar investor.

Completed Tasks...cont'd



- Sunrise Acres III construction completed, including EEM installation.
- Completion of EEMS for Akwesasne Boys & Girls Club, except upgraded electricity for heat pump system and installation of heat pump system.

Completed Tasks...cont'd



- Lease of 25 acres from Tribe to AHA prepared.
- Draft Sublease to Solar LLC prepared.
- Detailed Solar Construction and Power Purchase Agreement incorporating requirements of DOE Grant, including requirements for Design-Build Agreement, prepared.
- Power Purchase Agreement allows AHA to ensure the investor's exit and full AHA ownership of the facilities.
- Finalized Solar Construction and Power Purchase Agreement with new sizing.
- Interconnection application submitted to National Grid (local utility).

Findings of Interconnection Study



- National Grid determined that the full-sized DOE and HUD community solar facilities (1.62 MW total) would require significant system upgrades including a \$567,000 breaker system.
- Worked with National Grid and ConEd to identify smaller size (1.215 MW total) that avoids need for breaker system

Completed Tasks...cont'd



- Detailed interconnection study performed by National Grid.
- Draft subscription agreement approved by New York Public Service Commission.
- Construction commenced on the community solar project, including racking and panel installation.

Go Solar Initiative – Next Steps



- Determine sites and sizes of additional on-site solar facilities.
- Obtain DOE clearance regarding those facilities.
- Execute subscription agreements for Community Solar project.
- Complete construction and commissioning of community solar project.
- Construction of on-site solar projects.
- Monitor production from solar facilities.

Net Zero Initiative – Next Steps



- Complete implementation of Akwesasne Boys & Girls Club EEMs.
- Monitor energy efficiency gains from EEMs.

Thank You



Elizabeth Jacobs

ejacobs@aha-nsn.gov

518-358-9020

John Clancy

jclancy@gklaw.com

414-287-9256

GODFREY  KAHN S.C.