AKWESASNE HOUSING AUTHORITY
Community-Scale AHA Go Solar and Net Zero Initiatives

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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°F/71°F db/wb
The Saint Regis Mohawk Tribal Council created the Akwesasne Housing Authority (AHA) by ordinance in 1984 for the purposes of:

• Remedying 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.
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 Solar Stakeholder Interaction

- Excess Output
- Utility
- Membership Information
- Credits
- Member
- Host: ConEdison Development
  Construction: ownership, and operation
- Sponsor: AHA
- Membership Agreement
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
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.
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

SUNRISE ACRES III SUPPORTIVE HOUSING FOR HOMELESS VETERANS OCTOBER 2019
12 Unit Senior Supportive Housing

SUNRISE ACRES III
SUPPORTIVE HOUSING
FOR SENIORS WITH SPECIAL NEEDS
OCTOBER 2019
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

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