Nenana Energy Efficiency Capacity Project (NEECaP)

Nenana City School District

Nenana, Alaska and the NEECaP Team

- Located 50 miles southwest of Fairbanks, 500 residents
- Facilities include: 1 school building built between 1957 and 1985, 1 shop, 1 boarding facility, 1 office building
- Serves 200 students, roughly 57% Alaska Native
- 26.7% poverty rate, child poverty at 39%
- Team consists of 4 staff: Superintendent, Director of Operations, Admin Assistant to the DO, and the Grants/Curriculum Director

NEECaP Team Utilization of Trainings

- District staff have leveraged trainings to:
  - Benchmark energy usage
  - Develop energy use portfolio, including current policies, procedures, audits, etc
  - Perform “stocktake” facility walkthroughs
  - Identify energy efficiency projects
  - Engage with partners in pursuit of funding opportunities for project development and implementation

City of Nenana Biomass Plant foundation (2022)

NEECaP - Use of Funds

- The District used CLASS Funds to:
  - Improve ventilation in Living Center bathrooms to reduce mold
  - Fund personnel to engage in CLASS trainings and coaching
  - Tie into the City's biomass plant
- The District will use Phase 3 funds to:
  - Replace 1 NCS boiler from 1985 with a higher efficiency boiler
  - Increase LC roof insulation
  - Retrofit the LC boiler with 2 smaller, higher efficiency boilers

Nenana Student Living Center (2022)

NEECaP - District Facilities Addressed

NCS Shop & District Office

Nenana Student Living Center

Nenana City School

NEECaP - Proposed Building Upgrades

Nenana City School:

- Replace 100% of boilers with new, higher efficiency boilers
- Fully automate HVAC system
- Improve building envelope (windows, insulation, siding)
- Replace fixtures with LED & automate building lighting
- Install pole-mounted solar array
- Replace all aging pumps, compressors, and motors with newer, higher efficiency models

Nenana Student Living Center:

- Replace large, inefficient boiler with two high efficiency boilers
- Install rooftop solar array
- Improve building insulation
- Replace fixtures with LED & automate building lighting
- Replace compressors and electric motors, especially refrigeration appliances, with higher efficiency models
- Install ventilation ductwork and system to improve indoor air quality & circulation

NEECaP - Summary of Impacts

- Nenana City School District does not currently have the capacity to ascertain the full scope of cost savings and greenhouse gas emissions reduction of the proposed building upgrades
    - We can say with confidence that we will consume roughly 5,779 fewer gallons of heating oil per year once the biomass plant is operational
    - We can say with confidence that just 1 boiler replacement that increases efficiency by 4% would result in 750 fewer gallons of heating oil consumed per year.
    - We can say with confidence that the LC solar array will, conservatively, result in roughly 10% annual reduction in energy consumption (90,000 KwH)

NEECaP- Next Steps (A Flexible Step-by-Step)

Step 1: Secure Funding

- NCSD is currently reaching out to other LEAs to establish a consortium to compete for national grant funding
- The District is working with the City of Nenana to secure funding through the local municipality

Step 2: Develop Contracts

- Memorandums of Agreements between partners & establish the City as our general contractor

Step 3: Consult Relevant Professionals

- Pursue an updated energy audit
- Hire engineers to review facility blueprints & develop specifications for scopes of work

Step 4: Develop Scopes of Work & Put Work Out To Bid