Renew America Nonprofits – Rocky Mountain (RAN-RM) Program

Overview

University of Colorado Boulder

RAN-RM

U.S. DEPARTMENT OF ENERGY

RAN-RM Program

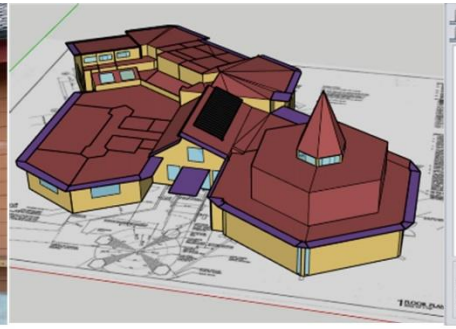
Title: Renew America's Nonprofits for Rocky Mountain Region (RAN-RM)

Summary: RAN-RM team, lead by University of Colorado, will demonstrate an optimized, scalable, and sustainable model to retrofit nonprofit facilities located in Rocky Mountain region (Colorado, Idaho, Montana, Utah, and Wyoming). The model is based on a rigorous and gradual evaluation approach to systematically select suitable facilities and optimal impact energy efficiency measures.

Budget: $8,000K (DOE funds: $5,700K + Cost Share from Partners: $2,300K)

Website: www.ranrm.com

Target: Reductions of energy use and carbon emissions by 25% for entire Portfolio



RAN ROCKY MOUNTAIN REGION

RAN-RM Partners

RAN-RM CU Team

Principle Investigator: Prof. Moncef Krarti, PhD, PE, LEED-AP

Co-Principle Investigators: Prof. Gregor Henze, PhD, PE and Prof. John Zhai, PhD

Administrative Manager: *Nicholas Clements, PhD*

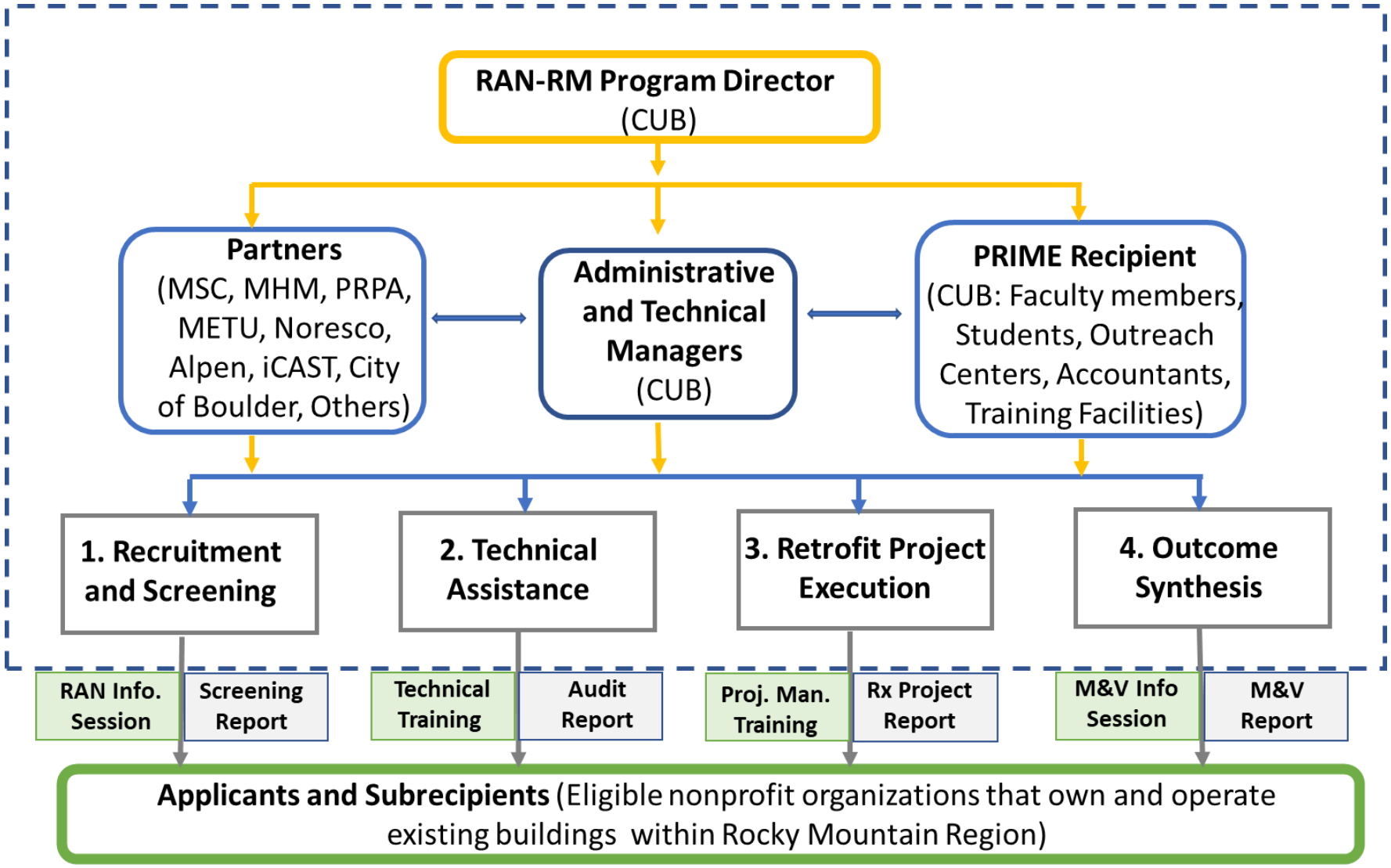
Technical Manager: *Ashit Harode, PhD*

Recruiting Assistant: *Todd Allen*

Finance Team: *Kathleen Kutzman, Erica Archer, Bernadette Garcia*

Students: Phani Valadi, Raj Ostawal, Harrison Gannon

RAN-RM Program Management Structure

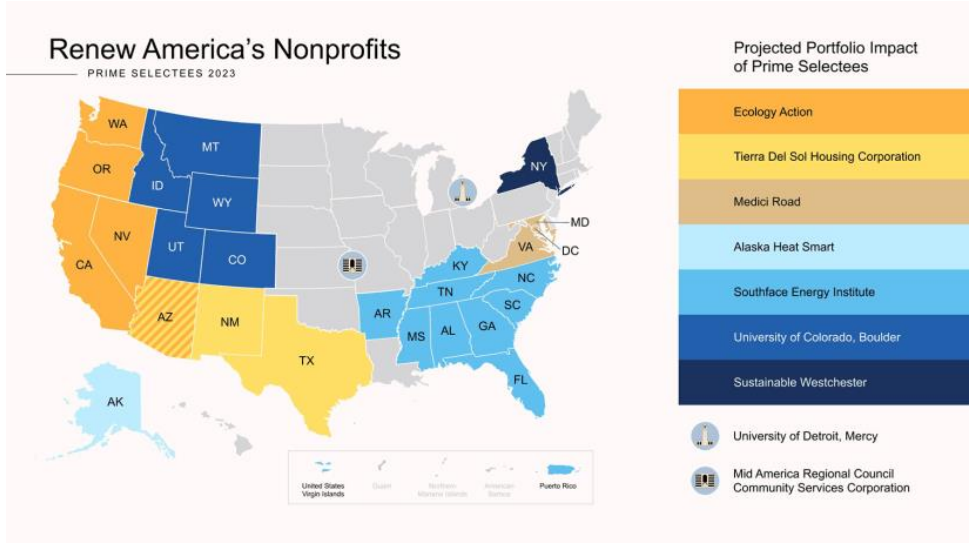


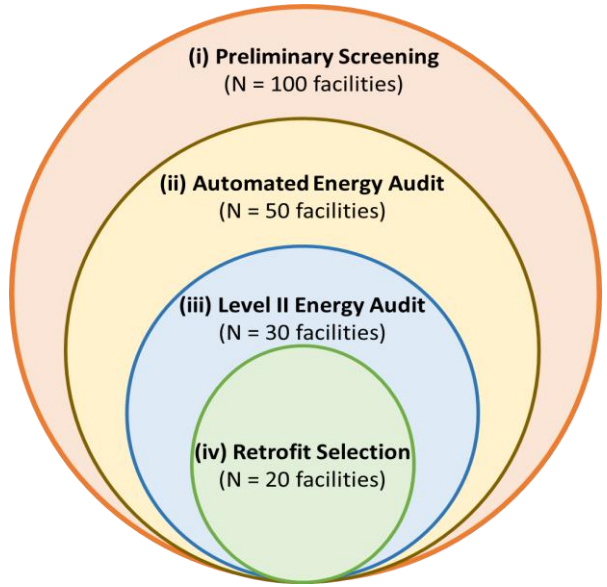
RAN-RM Program

Program Approach: The model is based on a rigorous and gradual evaluation approach to systematically select suitable facilities and optimal impact energy efficiency measures.

Program Measurable Outcomes:

- ❑ Collect Data and Prescreen 100-140 nonprofit facilities (over two application periods).
- ❑ Conduct level 1 energy audits for 60-80 prescreened and eligible nonprofit facilities.
- ❑ Complete level 2 energy audits for 40-60 facilities that underwent level 1 energy audits.
- ❑ Retrofit a set of 24-36 nonprofit buildings from those facilities screened through level 2 energy audits and other RAN program criteria.
- ❑ Train 6-8 students to be proficient in energy efficiency analysis of existing buildings.





RAN-RM Program

Program Approach: 4 Phases

Plan & Recruit

Recruit and collect basic data from potential subrecipients about facilities owned and operated by nonprofits

Technical Assistance

Perform technical analysis including utility data prescreening followed by level I and level II audits for a final selection of final list of subrecipients.

Project Execution

Assist selected and approved subrecipients to implement the retrofit projects including scheduling and selection if subcontractors.

Outcome Synthesis

Conduct Measurement and Verification (M&V) analyses for all facilities after the completion of the retrofit projects.

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Budget Period 1 – Phase 1: Outreach and Recruitment

- ❑ Recruit and collect basic data for eligible nonprofits within Rocky Mountain from RAN-RM Partners
- ❑ Direct applications through the website.

Eligibility Criteria:

- ➢ A 501c3 nonprofit organization
- ➢ Has a SAM.gov registration number
- ➢ Owns and operates the building
- ➢ Not located in 100-year floodplain or other hazard zones.

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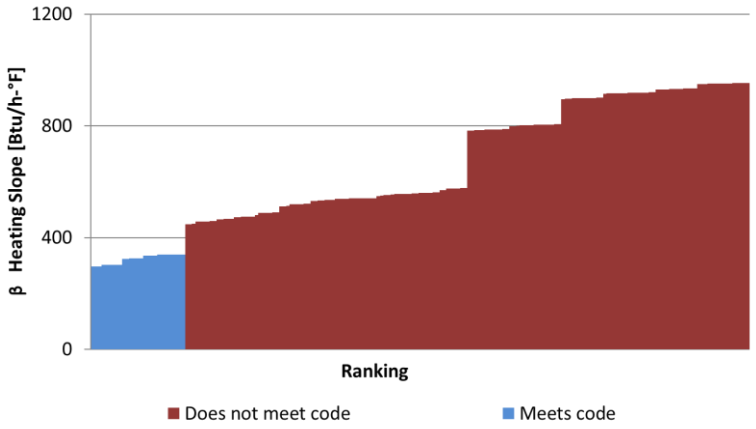
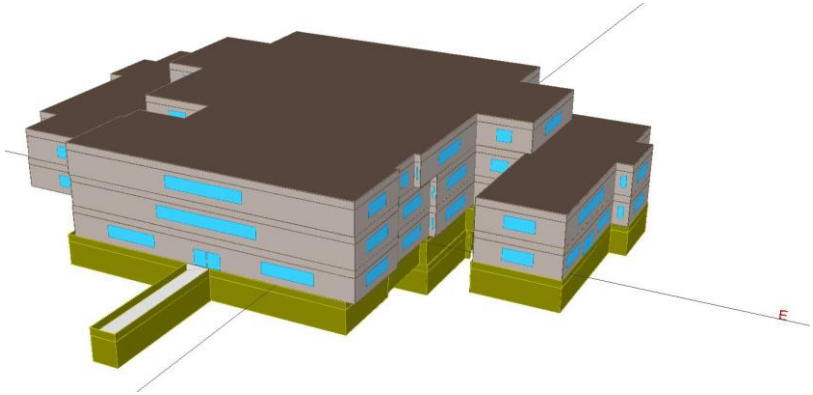
Budget Period 1 – Phase: 2 Technical Assistance and Assessment

- ❑ Perform a benchmarking analysis to assess potential energy efficiency level
- ❑ Conduct level 1 energy audit with recommendations for energy efficiency improvements for pre-selected facilities.
- ❑ Complete level 2 energy audit for facilities using optimization-based analysis with the highest potential for energy use reductions.
- ❑ Submit a set of portfolio of eligible facilities for DOE funding preapproval with potential of at least 25% savings in annual energy use.





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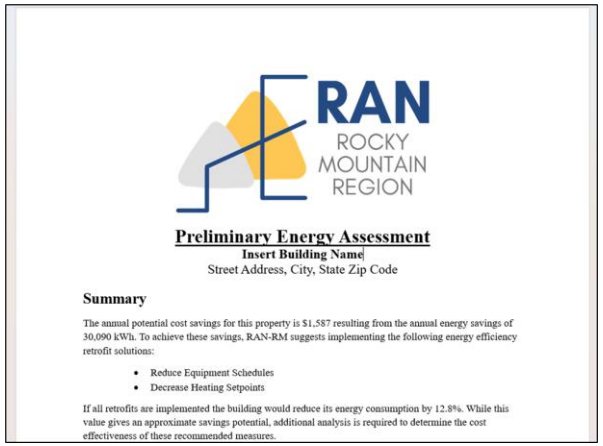
Phase 2: Selection Model

Preliminary Screening: based on basic information from applications of recipients, the energy inefficiency level is assessed to identify the most buildings with the highest energy efficiency impacts (Main team member: CUB)

Automated Energy Audit: For the recipients selected after the preliminary screening, the potential energy savings from retrofit is estimated using energy analysis tool (Main team member: CUB)

Perform Energy Audit: For the selected recipients with high potential for energy savings, energy audit including walk through and calibrated modeling (Main team member: CUB and iCAST)

Select Recipient for Retrofit: Based on various metrics, select buildings for energy retrofit (Main team member: DOE, CUB, and Partners)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Preliminary Energy Assessment

Insert Building Name

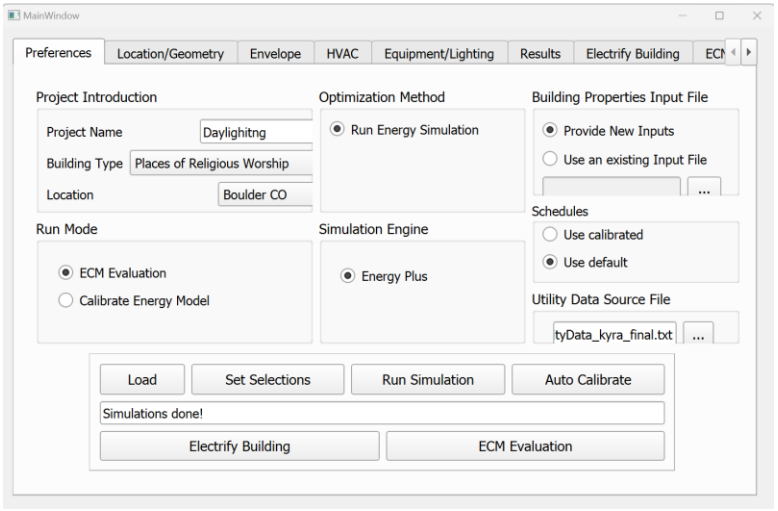
Street Address, City, State Zip Code

Summary

The annual potential cost savings for this property is $1,587 resulting from the annual energy savings of 30,090 kWh. To achieve these savings, RAN-RM suggests implementing the following energy efficiency retrofit solutions:

- Reduce Equipment Schedules
- Decrease Heating Setpoints

If all retrofits are implemented the building would reduce its energy consumption by 12.8%. While this value gives an approximate savings potential, additional analysis is required to determine the cost effectiveness of these recommended measures.



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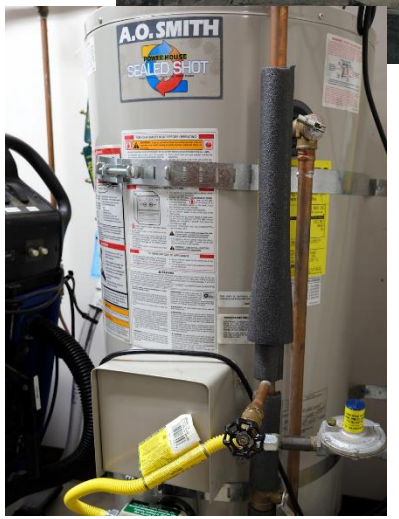
Budget Period 2 – Phase 3: Execution and Management of Retrofit Projects

- ❑ Get DOE approval for funding selected facilities.
- ❑ Set retrofit management teams as well as a list of potential subcontractors
- ❑ Assist nonprofits in scheduling and executing retrofit projects.
- ❑ Ensure retrofit execution meets NEPA, BACA, and Bacon-Davis requirements.
- ❑ Conduct retro-commissioning of the completed retrofit projects.



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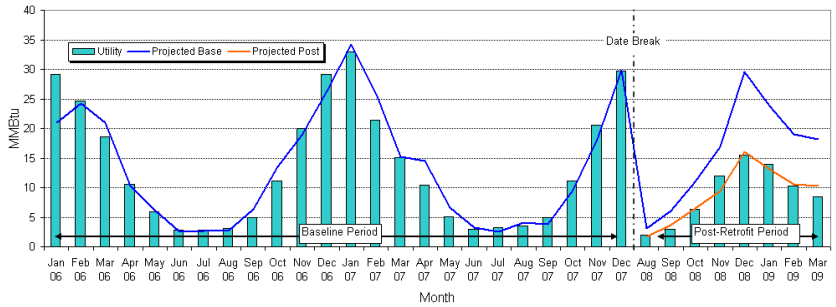
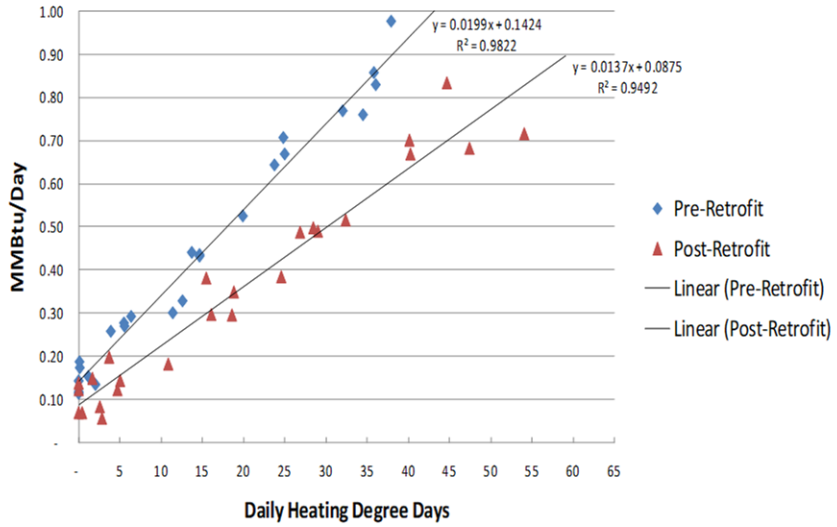
Budget Period 3 – Phase 4: Assessment of RAN-RM Outcomes

- ❑ Collect energy performance data after completion of the retrofit projects.
- ❑ Identify any identified execution issues with the retrofitted facilities.
- ❑ Perform M&V assessments for all completed retrofit projects using options C and D of IPMVP.
- ❑ Estimate the actual reductions in energy use, energy cost, and carbon emissions from the retrofitted portfolio.
- ❑ Document the community benefits for all the completed retrofit projects.





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Budget 1 Milestones

	Prescreen Applications	10/1/2024 – 12/31/2024
(30-40 facilities)	**Perform Level 1 Energy Audits**	11/30/2024 – 2/28/2025
(20-30 facilities)	**Complete Level 2 Energy Audits**	1/30/2025 – 6/30/2025
(12-18 facilities)	**Select Subrecipients**	5/15/2025 – 7/30/2025
	Get DOE Approval	7/15/2025 – 9/30/2025

Expected Outcomes

Expected Outcomes of RAN-RM program:

- *Benefit all applicants with an energy assessment analysis of their facilities. Other will receive level 1 and level 2 energy audits.*
- *Leverage DOE funds with other cost-share funds and incentives to retrofit facilities (expected RAN-RM grants to range from $20K up to $200K per facility).*
- *Develop a sustainable and scalable RAN-RM program beyond DOE funding period through the development of an online energy retrofit tool.*
- *Train future workforce for energy auditors and building managers.*
- *Disseminate analysis approaches and tool as well as best practices based on execution of all phases of the RAN-RM program.*

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Thank You

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