SAINT LOUIS UNIVERSITY

Baguio City, Philippines

Metric 7.4 Energy and the community



7 AFFORDABLE AND CLEAN ENERGY

Times Higher Education Sustainability Impact Ratings

AY 2025-2026

SAINT LOUIS UNIVERSITY

Baguio City, Philippines

Indicator 7.4.1
Local community outreach for energy efficiency



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Local Community Outreach for Energy Efficiency

COMMUNITY EXTENSION & RURAL ELECTRIFICATION: SOLAR-POWERED STREET LAMP INITIATIVE

Through community extension programs—such as the Solar-Powered Street Lamp Initiative and rural lighting workshops partnered with local barangays (e.g., Barangay Happy Hallow and surrounding upland communities)—SLU faculty and student engineering organizations (such as the Junior Institute of Integrated Electrical Engineers - Jr. IIEE) conduct hands-on training sessions for barangay officials and local residents. These sessions educate the community on solar photovoltaic (PV) assembly, battery maintenance, off-grid storage, and troubleshooting, enabling underserved neighborhoods along unlit mountain pathways to achieve energy autonomy without recurring grid power costs.









Local Community Outreach for Energy Efficiency

COMMUNITY-BASED SOLAR TECHNOLOGY & INSTALLATION WORKSHOPS







Under SDG 7.4.1, Saint Louis University operationalized its community clean-energy mandate through the Solar-Powered Street Lamp Initiative at its adopted indigenous community in Barangay Happy Hallow, where faculty and student engineers from the School of Engineering and Architecture (SEA) Electrical Engineering Department, Jr. IIEE, and CEOPO conducted comprehensive technical workshops for local leaders and residents. Moving beyond passive technology turnover, the outreach provided hands-on capacity building covering photovoltaic fundamentals, off-grid circuit assembly, waterproof wiring, battery charge management, and system troubleshooting, alongside practical education on eliminating household phantom loads and adopting LED efficiency. By training community members to assemble, maintain, and repair their own standalone solar street lighting across previously unlit, hazardous mountain footpaths, SLU empowered the barangay with decentralized energy autonomy, elevated public safety without recurring utility costs, and tangibly advanced regional environmental stewardship aligned with the university's Laudato Si' mission.

Local Community Outreach for Energy Efficiency

BARANGAY HOUSEHOLD ENERGY EFFICIENCY & SAFETY CAMPAIGNS

SEA faculty and engineering volunteers deliver grassroots education campaigns in adopted barangays focusing on electrical safety, reducing household vampire loads, sizing off-grid renewable kits, and calculating power consumption. Community members are taught practical demand-side management, such as transitioning to high-efficiency LED luminaires, passive daylight utilization, and optimizing household electrical circuits.









Local Community Outreach for Energy Efficiency

BRIDGING INNOVATION AND COMMUNITY ACTION: SLU'S OUTREACH PROGRAMS FOR LOCAL ENERGY EFFICIENCY AND RENEWABLE SOLUTIONS

Saint Louis University (SLU), through the School of Engineering and Architecture (SEA) and its institutional Undergraduate Research and Innovation Programs (UGRIP), actively conducts participatory community outreach, hands-on capacity building, and public knowledge dissemination aimed at promoting energy efficiency and clean energy transitions across Baguio City, the Province of Benguet, and neighboring communities.

Recognizing that technical clean-energy innovations must be paired with grassroots engagement to achieve long-term adoption, SLU engineers and student researchers bring practical sustainability prototypes directly to community leaders, agricultural workers, local market vendors, and transport stakeholders. During the August 2025 – July 2026 reporting cycle, SLU conducted targeted outreach programs structured around three primary community engagement tracks:

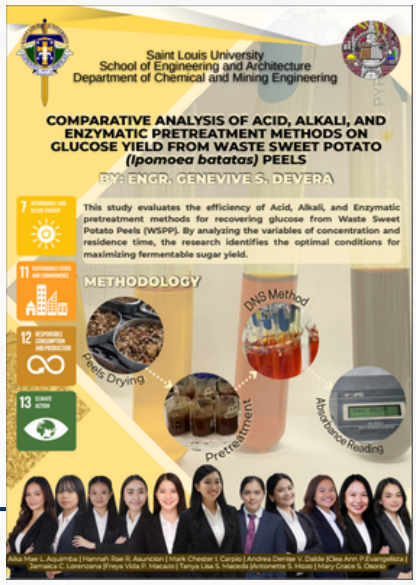
Track 1: Off-Grid Clean Cooking, Solid Biofuels & Rural Agro-Waste Outreach
Track 2: Household Waste-to-Energy & Residential Resource Recovery
Track 3: Clean Transport, Urban Passive Design & Future Clean Fuels

Local Community Outreach for Energy Efficiency

TRACK 1: OFF-GRID CLEAN COOKING, SOLID BIOFUELS & RURAL AGRO-WASTE OUTREACH







SLU delivers direct technology transfer and awareness campaigns in farming municipalities to educate residents and agrarian workers on utilizing discarded biomass for domestic and enterprise energy needs:

- **Kapangan Off-Grid Briquetting Demonstration:** Community-based technical workshops conducted for rural agricultural cooperatives in Kapangan, Benguet, demonstrating how farm waste (rice husks) can be processed into high-density fuel briquettes using a solar-powered production system, reducing firewood dependency and indoor air pollution.
- **Baguio City Market Vendor Engagement on Waste-to-Energy**: Informational outreach and consultation with public market vendors and stallholder associations in Baguio City, illustrating how non-marketable paper and organic solid wastes can be diverted from landfills and upcycled into clean hydrochar fuel through hydrothermal carbonization.
- **Agro-Processing Residue Valorization:** Public presentations and educational dialogues on secondary biochemical pathways, showing local vegetable growers and processors how root crop residues (e.g., sweet potato peels) can yield fermentable sugars for clean biofuels rather than generating commercial bio-waste.

Local Community Outreach for Energy Efficiency

TRACK 2: HOUSEHOLD WASTE-TO-ENERGY & RESIDENTIAL RESOURCE RECOVERY





SLU promotes grassroots household-level behavioral change, educating urban and suburban residents on decentralized renewable power and e-waste energy reclamation:

- **Micro-Scale Food Waste Digestion & Biogas Conversion:** Hands-on community training demonstrating how household kitchen waste can be anaerobically digested in 20-liter home digesters and scrubbed to run Seebeck thermoelectric generators (TEGs), showing low-income households how everyday scraps can generate off-grid 5V device-charging power.

- **Primary Battery Residual Energy Recovery Clinics:** Community e-waste education drives teaching residents that 13%–50% of usable energy remains in discarded household alkaline batteries (AA/AAA), providing live demonstrations of how self-adaptive pulse discharge circuits safely harvest this energy for local micro-devices while preventing premature toxic disposal.

Local Community Outreach for Energy Efficiency

TRACK 3: CLEAN TRANSPORT, URBAN PASSIVE DESIGN & FUTURE CLEAN FUELS

SLU engages local barangay associations, municipal drivers, and construction planners to raise community awareness on urban energy efficiency and sustainable infrastructure:

- **Barangay-Level Electric Vehicle Infrastructure Consultations:** Community stakeholder dialogues held in Cresencia Village, Baguio City, presenting PRISMA-based engineering designs for hybrid solar-supported EV charging hubs to local jeepney operators, transport groups, and barangay officials to build public acceptance for fleet electrification.
- **Passive Urban Ventilation & Natural Cooling Education:** Outreach materials and architectural guidance sessions for building owners and local planners, sharing CFD airflow simulation models that illustrate how wind towers and zeolite passive desiccant systems deliver comfortable indoor climates without heavy HVAC electricity loads.
- **Rainwater-to-Green Hydrogen Public Exhibits:** Campus-hosted open demonstrations utilizing university rainwater catchment infrastructure to showcase PEM solar electrolysis, giving local senior high school students, technical groups, and community visitors an accessible view of zero-emission green hydrogen generation.
- **Self-Powered Road Infrastructure Awareness:** Engagement with municipal road management and local transport safety advocates on kinetic energy harvesting, displaying working prototypes of vehicle-activated triboelectric nanogenerators (V-TENG) designed to keep roadway reflectors ("cat's eyes") illuminated without grid electricity.









Local Community Outreach for Energy Efficiency

EMPOWERING REGIONAL HEALTHCARE THROUGH ENERGY EFFICIENCY: SLU'S TECHNICAL COMMUNITY OUTREACH ON THE PH-SINAG FRAMEWORK

Saint Louis University (SLU), Baguio City, conducts community outreach and technical capacity-building programs to promote energy efficiency, sustainable operations, and clean energy adoption among local organizations and the wider public.



On October 10, 2026, the SLU School of Engineering and Architecture (SEA) – Department of Civil Engineering delivered a public community outreach forum through its Alumni Webinars on Architecture and Engineering (AWArE) Series, titled "Environmental Engineering for Sustainable Health Facilities: Applying PH-SINAG to Measure and Reduce the Environmental Footprint of Philippine Hospitals." Led by alumnus Engr. June Philip Ruiz, this free virtual session was made publicly accessible to healthcare facility managers, municipal engineers, local planners,, professional practitioners and students across the Philippines.

The webinar initiative provided practical training on turning facility-level environmental data into high-impact energy efficiency strategies. Participants were guided through energy and emissions baseline accounting, identifying heavy-load operational inefficiencies, and designing retrofits—such as rooftop solar integration, low-energy lighting, and passive ventilation—tailored for high-altitude healthcare facilities. By democratizing access to technical decarbonization tools, SLU equips external community institutions to significantly reduce their power consumption, lower operating costs, and bolster infrastructure resilience while maintaining essential public services.



The SLU SDG Report 2026