



UNIVERSITAS
MUHAMMADIYAH
SIDENRENG RAPPANG



SUSTAINABLE
DEVELOPMENT
GOALS

SDG 7

Affordable and Clean Energy

Progress Report 2025

Universitas Muhammadiyah Sidenreng Rappang

Reporting period 1 January to 31 December 2025

Prepared 29 October 2026

7 AFFORDABLE AND
CLEAN ENERGY



*Akses Energi Bersih,
Terjangkau, dan Berkelanjutan
untuk Masa Depan yang
Lebih Baik*



SDG 7 Affordable and Clean Energy

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Executive overview

UMS Rappang’s publicly documented energy-related work in 2025 includes a publication on LPG demand forecasting, teaching on mechanical efficiency, waste-processing outreach and a collaborative public survey containing a street-lighting item. These are contributions to research, learning and public-service evidence. Their relationship to SDG 7 varies in strength and is explained in each section.

Area	Evidence established
Energy distribution research	A 2025 article on LPG refill demand forecasting [01]
Technical learning	A feed-chopper prototype project applying power and mechanical-efficiency concepts [02]
Energy-related outreach	Waste-processing education that included plastic-to-fuel concepts [03]
Public-service research	A collaborative survey with a street-lighting benefit-recognition item [04]

Main assessment

The evidence supports selected research and educational outputs. It does not establish new renewable generation, a change in the university energy mix, household energy access gains or verified campus energy savings in 2025. Detailed operational reporting requires metered energy, equipment and financial records.

Purpose and structure

This report provides traceable accounts, photographs where available, a description of the relevant SDG 7 themes and a measurement framework. Historical renewable-energy work is presented separately so that it is not counted as new delivery in 2025.

Reporting date

The reporting year identifies the activity period. Preparation and public release dates must be stated separately. This report was prepared in October 2026 and does not establish publication during 2025.

Scope and interpretation of evidence

SDG 7 concerns access to affordable, reliable and modern energy, a larger renewable energy share, energy efficiency and supporting research and infrastructure. The mapping in this report indicates thematic relevance rather than achievement of UN indicators. [\[08\]](#)

SDG 7 direction	Interpretation for this report
7.1 modern energy services	Distribution planning and lighting-related public evidence are relevant context. Access, affordability and reliability outcomes are not directly measured.
7.2 renewable energy	No 2025 renewable generation or share is established. Earlier solar work is historical context.
7.3 energy efficiency	Mechanical-efficiency learning supports technical understanding. Actual reductions in energy input require testing.
7.a research and cooperation	Energy-related research is documented. The report does not establish international clean-energy finance or a 2025 international energy project.
7.b energy infrastructure	The evidence does not establish new university renewable infrastructure commissioned in 2025.

Evidence approach

- Publication date, activity date and the year of research data are recorded separately. A source appearing in a 2025 issue is not automatically treated as published in 2025.
- Technical efficiency, operational efficiency and energy savings are distinguished. Faster production or lower inventory does not by itself demonstrate lower energy use.
- An activity related to fuel is not automatically renewable or clean-energy deployment. Plastic-to-fuel education is not renewable-energy generation.
- Photos illustrate their source accounts. No participant totals or technical performance are inferred from the photographs.
- Public evidence is a selected record rather than an exhaustive inventory. Missing values are not set to zero.

1. Research on LPG distribution planning

Digital Business researchers at UMS Rappang

Published 1 October 2025 in JEMSI

Research activity and output

Muh. Niswar, Muh. Tamrin, Haslindah and Pratiwi Ramlan published a study of LPG cylinder refill demand at PT Sinar Energi Sulawesi. The article uses exponential smoothing and historical records from 2022–2024 to forecast demand for selected months in 2025. The journal record confirms the authors' UMS Rappang affiliation and publication in volume 11, issue 5, pages 4773–4782. [\[01\]](#)

Results reported by the authors

The abstract reports a model MAPE of 2.34 percent, alongside other forecasting error measures. This is an error statistic for the model, not a percentage reduction in fuel consumption, emissions or consumer prices. The predicted refill quantities are forecasts, not confirmed realised deliveries. [\[01\]](#)

Relationship to SDG 7

The study contributes an analytical approach to energy distribution planning. Its relevance to modern energy services concerns the possibility of better demand estimation and scheduling. Whether that improves reliability, affordability or access depends on operational use and subsequent service outcomes.

LPG demand forecasting is not evidence of renewable-energy generation. The paper is therefore reported as energy-related research with an indirect service-planning link, rather than as proof of a clean-energy transition.

Evaluation and follow up

A useful follow-up would compare forecasts with actual demand under a defined validation approach, document whether the company adopted the model, and examine stockouts, delays and delivery costs. Household energy outcomes would need a separate study of users and service conditions.

The evidence package should retain the published article, its publication metadata, the forecasting method and any documented company response. No company adoption or change in community energy access is assumed in this report.

2. Learning about power and mechanical efficiency

Animal Science student prototype project

University report published 24 July 2025

Activity and university role

Second-semester Animal Science students designed and built a simple feed-chopper prototype as an Industrial Physics course project supervised by Armayani M. The university account describes group work on design, power and efficiency calculations, selection of affordable local materials and functional testing. Concepts included energy and work, friction and rotating components. Further refinement and partner testing were proposed. [\[02\]](#)



Figure 1 Photograph accompanying the university report on the feed-chopper prototype.

Contribution and limits

The recorded output is a student engineering prototype and contextual learning about power and mechanical efficiency. This is relevant to skills needed for energy-aware design. The source does not provide measured energy input per unit of processed feed or a comparison with another machine.

Improved speed, output or convenience should be assessed separately from energy efficiency. A prototype may improve work processes while its energy consumption remains unmeasured.

Evaluation and follow up

Retain design calculations, specifications and functional test records. To assess energy performance, measure input energy and useful output under comparable conditions, including material type and moisture. Proposed future testing should be recorded as completed only when the results are available.

3 Outreach on waste processing and fuel concepts

Faculty of Science and Technology and SMA 9 Pinrang

Activity on 25 February 2025 and report published 26 February 2025

Activity and participation

A university account describes outreach for 40 SMA 9 Pinrang students on waste-processing and utilisation technologies. Agricultural Product Technology lecturers introduced examples including composting, food products from banana-peel waste and plastic-to-fuel processing. The account also describes practical learning supported by lecturers and students. [\[03\]](#)



Figure 2 Photograph accompanying the university report on waste-processing outreach.

Relationship to energy education

The fuel example gives this activity a limited energy-education connection within a broader waste and resource-management session. The evidence establishes an educational event, not the commissioning of a fuel-production facility or the generation of energy.

Plastic-to-fuel processing is not counted here as renewable energy. The article does not provide a tested fuel specification, energy balance, emissions assessment or evidence of safe commercial use. The report does not infer that the practical component specifically involved producing fuel.

Evaluation and follow up

Retain the agenda, materials, attendance and the description of the actual practical activity. Learning assessment could distinguish knowledge of energy concepts from general waste awareness. Any claim about fuel production would need separate technical records and verification of its outputs.

The figure of 40 identifies the school-student group for this session. It is not an annual energy-outreach beneficiary total. The activity should also retain its broader relevance to education and resource management.

4. Public evidence on street lighting services

*FSI and the Faculty of Social and Political Sciences
Survey in November and December 2025*

Research and dissemination

A district government account describes a survey by Formasi Survei Indonesia with FISIP UMS Rappang. It records 680 registered-voter respondents surveyed from 20 November to 5 December 2025, with findings presented at the university on 30 December. Street lighting appears among recognised benefits of the district's flagship programmes, at 37.0 percent. [\[04\]](#)



Figure 3 Photograph accompanying the district government account of the collaborative survey.

Interpretation for SDG 7

This is public-service research containing an energy-service-related item. The reported percentage concerns recognition of benefits; it is not the share of households connected to electricity, a lighting coverage rate or an energy-saving result.

The university's documented role is research collaboration and presentation. The government's lighting programme is not attributed to the university as an installation or infrastructure project.

Evaluation and follow up

Retain the questionnaire, sampling documentation and the full report before using the lighting item in detailed analysis. Clarify the question wording and denominator. Stronger energy-service evidence would separately address reliability, access, cost and the technical characteristics of lighting infrastructure.

No inference is made that the lighting used renewable power. The survey is included as supporting public-service evidence with a limited thematic link to SDG 7.

Historical context and date verification

Solar powered agricultural technology in 2023

A Jurnal Dinamika Pengabdian article identifies UMS Rappang authors and describes farmer support in Carawali during January–March 2023 using solar-powered light traps. The activity included surveys, socialisation, assistance and monitoring. [\[05\]](#)

This is relevant institutional experience with renewable-energy applications. It is not counted as a 2025 installation, outreach event or electricity-generation result. Continued use in 2025 would need dated maintenance, usage or partner records.

Energy governance lecture in 2023

Warta PTM reports that UMS Rappang and CERDIGS held an online guest lecture on energy-sector governance and renewable-energy development on 29 July 2023. [\[06\]](#) This establishes a historical educational collaboration. It is not treated as a 2025 event or evidence of continuing activity without further records.

A journal issue labelled 2025 with a 2026 publication date

The Musamus Journal of Agribusiness record for a UMS Rappang study on Just In Time fuel distribution places it in a 2025 issue but gives a publication date of 30 January 2026 and a 2026 citation. [\[07\]](#) It is not counted here as a confirmed 2025 publication. Any claim of 2025 research delivery requires the study dates to be verified.

Why the distinction matters

Historical projects can explain institutional experience without being counted again as current-year outputs. Likewise, a journal's issue label does not resolve the timing of the underlying study. Clear chronology makes future annual comparisons more reliable.

Campus energy performance and measurement

The public sources reviewed do not establish a complete university energy account for 2025. Operational performance should be assembled separately from research and teaching outputs. Missing records are a reporting gap, not evidence of zero activity.

Area	Measure to compile	Supporting record
Purchased electricity	Annual and monthly consumption in kWh by campus meter	Electricity bills and meter readings
Other energy	Fuel quantities and defined energy conversions	Purchasing records and conversion basis
Renewable supply	Verified generation, self-consumption and any exports	Commissioning documents and meter data
Energy intensity	Consumption per defined floor area or user population	Energy data with matched building or population records
Energy efficiency	Comparable baseline and post-intervention input for the same service	Audit, equipment and measurement records
Energy affordability	Costs and service conditions for defined users	Cost records and a suitable user assessment
Research and outreach	Publications, sessions and unique participants	Metadata, attendance and validated programme reports

Recommended reporting method

Define the institutional perimeter first, including the sites and meters covered. Keep purchased electricity, on-site generation and fuel use in separate categories. Avoid double-counting on-site electricity both when generated and when consumed.

For efficiency claims, state the service output and comparable conditions. A lower bill may reflect prices, occupancy or operating hours rather than lower energy demand. A lower energy total is not automatically evidence of improved efficiency.

A renewable-energy share should use a stated boundary, numerator and denominator, with all energy expressed in compatible units. No such share is calculated in this report because the required institutional dataset has not been established.

Recommended actions and overall assessment

Validate the selected outputs

Confirm the teaching and outreach accounts with the responsible programmes. Retain dates, participants, activity materials, outputs and photograph attribution. For research, retain the published article and any evidence of use beyond publication.

Establish a 2025 energy baseline

Collect monthly electricity records, fuels, equipment inventories and any renewable-generation logs. Reconcile them with the sites covered and identify missing months before calculating annual totals.

Evaluate efficiency through useful output

For the feed-chopper project, test energy input per comparable quantity of feed processed. For campus equipment, use an appropriate service measure and document changes in operating hours or occupancy. Report measured results only after validation.

Assess continuity of earlier renewable projects

Contact the responsible units and partners for dated records of any continued solar light-trap use in 2025. Historical experience should become a current-year claim only when current-year operation or support is documented.

Strengthen the connection to energy services

Research follow-up could examine whether forecasting or public-service findings inform actual decisions. Separate publication, adoption and service outcomes so that each stage can be assessed on its own evidence.

Overall assessment

The selected 2025 evidence supports an account of energy-related research, technical learning, outreach and public-service data. It does not establish a quantified clean-energy transition or campus efficiency improvement. The report provides a structured basis for adding validated operational and outcome data.

These actions are recommendations for institutional consideration. They are not presented as approved commitments. The university should validate the report and image reuse before public release, using the actual publication date.

Sources and photographic evidence

Links and images were reviewed on 29 October 2026. Figures 1–3 reproduce images from their respective source articles. The research source is cited directly; no field photograph is implied for that publication.

01 LPG demand forecasting research

Niswar, M., Tamrin, M., Haslindah, H., and Ramlan, P. (2025). JEMSI 11(5), 4773–4782. Published 1 October 2025.

[Article and abstract](#) | [DOI](#)

02 Feed-chopper prototype project

UMS Rappang | Published 24 July 2025

[Source article](#) | [Original photograph](#)

03 Waste-processing outreach for SMA 9 Pinrang

UMS Rappang | Published 26 February 2025

[Source article](#) | [Original photograph](#)

04 FSI and FISIP collaborative public survey

District government | Published 31 December 2025

[Source article](#) | [Original photograph](#)

05 Historical solar light-trap project

UMS Rappang authors. Jurnal Dinamika Pengabdian 9(1), 2023. Activity January–March 2023.

[Historical research and community service article](#)

06 Historical energy governance lecture

Warta PTM, 9 August 2023. Lecture held 29 July 2023.

[Historical lecture account](#)

07 JIT fuel distribution study

Musamus Journal of Agribusiness 8(2), 98–107. Journal record published 30 January 2026; issue labelled 2025.

[Publication record](#)

08 United Nations SDG 7 reference

[SDG 7 targets and indicators](#)