

LEAP-RE

Research and Innovation Action (RIA)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 963530

Start date: 2020-10-01 Duration: 72 Months http://www.leap-re.eu/



LEAP-RE portfolio Exploitation plan

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LEAP-RE - Contract Number: 963530

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Document title	LEAP-RE portfolio Exploitation plan
Author(s)	George Lameh, Léonard Lévêque (LGI)
Number of pages	56
Document type	Deliverable
Work Package	WP4
Document number	D4.9
Issued by	LGI
Date of completion	2025-11-03 10:59:32
Dissemination level	Public

Summary

This Exploitation Plan (D4.9) is part of the broader LEAP-RE project, a long-term EU-AU research and innovation initiative aiming to strengthen the Europe-Africa partnership in renewable energy. Within this framework, Work Package 4 focused on enhancing the exploitation potential of research results emerging from LEAP-RE-funded projects. The specific objective of this deliverable was to identify, assess, and prepare high-potential innovations for investment readiness and market deployment. To achieve this, the Innovation Support Programme was structured in successive phases: 1. Initial maturity screening: A survey-based assessment of 21 projects from the LEAP-RE portfolio to evaluate their technology readiness, market relevance, and strategic needs. 2. Project shortlisting and interviews: Selection of a subset of projects for in-depth interviews based on criteria such as TRL, commercial readiness, innovation potential, and scalability. 3. Innovation camp in Milan: A dedicated event where 8 shortlisted projects pitched their solutions to an audience of investors, funders, and innovation stakeholders. 4. Creation of the Investment portfolio: Consolidation of project profiles and assessment outcomes into a curated portfolio designed to facilitate further engagement with the investment and innovation ecosystem. 5. Follow-Up strategic assessment (2025): Post-Milan evaluation of two additional LEAP-RE projects using the same methodology, demonstrating the programme's capacity to expand and adapt. The deliverable documents these phases, presenting both qualitative insights and comparative evaluations. Key outcomes include the identification of projects with high investor potential, the organisation of successful stakeholder engagement events, and the creation of tools and criteria that can be reused in future support schemes. This deliverable thus plays a dual role: as a record of exploitation-oriented activities within LEAP-RE, and as a strategic bridge toward the next phase of innovation deployment between Africa an

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Research & Innovation Action

September 2025

D4.9 LEAP-RE portfolio Exploitation Plan

Version N°1

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Document information

Grant Agreement	963530
Project Title	Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy
Project Acronym	LEAP-RE
Project Coordinator	Vincent Chauvet – LGI
Project Duration	1 st October 2020 – 30 st September 2026 (72 Months)
Related Work Package	Work Package 4
Related Task(s)	Task 4
Lead Organisation	LGI Sustainable Innovation
Contributing Partner(s)	PAUWES
Due Date	September 2025
Submission Date	October 2025
Dissemination level	Public

History

Date	Version	Submitted by	Reviewed by	Comments
25/07/2025	1	George Lameh - LGI	Mathilde Videlo - LGI	





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Abbreviations and Acronyms

Acronym	Description
AU	African Union
CSA	Coordination and Support Action
EC	European Commission
EU	European Union
GAA	Geothermal Atlas for Africa
IP	Intellectual Property
LEAP-RE	Long-Term Joint European Union – African Union Research and Innovation Partnership on Renewable Energy
LEDSOL	Solar-Driven LED Water Disinfection Project
LEOPARD	Local Energy Optimisation Platform for African Renewable Development
NGO	Non-Governmental Organisation
PURAMS	Productive Use in Rural African Markets Using Solar
R&I	Research and Innovation
RE4AFAGRI	Renewables for African Agriculture – Integration with Smart Farming Technologies
SHE	Smart Home Energy
SIREVIVAL	Sustainable Integration of Recycled Materials in Photovoltaics and Energy Storage
SOCONEXGEN	Solar Indoor Cooking Systems of the Next Generation
SOLCHARGE	Stand-Alone Solar Charging Solution





TRL	Technology Readiness Level
VC	Venture Capital
WP	Work Package

Summary

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Keywords

Renewable energy, Africa-Europe cooperation, innovation support, technology maturity assessment, investment readiness, startup studio.





1. Introduction

The LEAP-RE Portfolio Exploitation Plan consolidates the outcomes of a structured, multiphase evaluation process to identify and support research and innovation projects with high potential for commercial impact in the field of renewable energy in Africa. This plan builds on the results of a comprehensive market readiness survey, follow-up interviews, and detailed project maturity assessments conducted between April 2024 and July 2025.

The overarching aim is to bridge the gap between project completion and successful market uptake. To this end, a three-step methodology was applied:

- 1. Survey Phase: 31 projects were contacted, with 21 providing comprehensive data. Using a set of maturity indicators (TRL, market demand, funding needs, etc.), a shortlist of high-potential initiatives was generated.
- 2. Interview Phase: 9 projects were selected for follow-up interviews to further validate their investor readiness, business models, and scalability potential.
- 3. Strategic Evaluation: Additional desk-based assessments of early-stage projects helped benchmark broader portfolio maturity and identify gaps requiring further support.

The results presented in this plan inform not only the selection of projects for pitching at the LEAP-RE Innovation Camp in Milan (October 2024), but also shape future policy and investment engagement strategies. The plan also outlines recommendations for supporting early-stage projects that are not yet market-ready.

Each section of the document corresponds to a phase of the evaluation process, offering transparency on selection methods and decision-making criteria. The conclusion consolidates findings and offers a roadmap for increased impact and exploitation of LEAP-RE outcomes.





2. Survey-Based Maturity Screening

The first phase of the LEAP-RE exploitation pathway focused on a wide-reaching survey designed to assess the maturity and market readiness of projects within the LEAP-RE portfolio. The goal was to develop an objective, data-driven foundation for identifying high-potential innovations that could progress toward commercial application and investment attractiveness. The survey is attached in Appendix 1 of this report.

The survey was conducted between April and July 2024 and targeted 31 projects, covering diverse thematic areas such as solar energy, geothermal, clean cooking, energy access, and water treatment. It represented a structured attempt to understand the readiness level, value proposition, market orientation, and strategic needs of individual projects at a critical stage in their lifecycle.

The key objectives of the survey were as follows:

- 1. Map the current development status of LEAP-RE projects by collecting structured data on technical progress, market engagement, and commercialization planning.
- 2. Evaluate Technology Readiness Level (TRL) and related indicators to determine which projects were moving from research into potential market adoption.
- 3. Identify priority needs such as funding, business development, IP protection, partnerships, or supply chain challenges.
- 4. Assess each project's value proposition and relevance to real-world market needs, particularly in African contexts.
- 5. Support strategic decision-making by shortlisting projects for more targeted follow-up, including interviews and eventual pitching at the Innovation Camp.

The survey also served a dual purpose. On one hand, it provided a snapshot of innovation maturity across the portfolio; on the other, it helped sensitize project teams to critical commercialization dimensions they may need to strengthen, such as business model clarity, stakeholder engagement, or regulatory awareness.

What follows in this section is a breakdown of the survey methodology, response rates, and key takeaways. It leads to the identification of a subset of mature projects recommended for further evaluation and possible investor pitching.

This phase laid the foundation for a more selective and focused approach in the subsequent interview and strategic assessment stages, ensuring that support and visibility are directed toward the most viable and impactful innovations.

2.1Total Number of Respondents and Response Rate

As part of the initial survey campaign launched in April 2024, a total of 31 LEAP-RE projects were contacted and invited to participate in a structured self-assessment exercise. The objective was to gather consistent and comparable data on each project's technical maturity, market readiness, and key development needs.





The participation breakdown is as follows:

- Excel survey submissions: 19 responses
- SIREVIVAL (standalone document submission): 1 response
- NANOSOLARCELLS (standalone document submission): 1 response

This brings the total number of valid responses to 21 out of 31, resulting in a response rate of 68%.

Response rate = (Total number of respondents/Total number of projects contacted) x 100 = $(21/31) \times 100 = 68\%$.

This level of engagement reflects a strong interest and commitment from the project teams toward advancing the exploitation dimension of their work. It also validates the survey methodology as an effective tool to initiate a strategic dialogue around commercialization potential and support needs. Moreover, a response rate of over two-thirds ensures a robust and representative dataset, allowing for meaningful analysis and initial screening of project maturity across the portfolio.

2.2 Methodology and Evaluation Criteria

Following the survey collection phase, a structured evaluation framework was applied to assess the relative maturity and exploitation potential of the responding projects. The objective of this screening exercise was to identify a shortlist of the most promising initiatives, which could be further supported toward commercial readiness and presented to investors at targeted dissemination events, including the LEAP-RE Innovation Camp.

To ensure a consistent and objective analysis, the following eight evaluation criteria were defined. These indicators reflect both technological development and market alignment, and were selected based on best practices in innovation assessment and investor readiness screening:

- Technology Readiness Level (TRL): Projects with a higher TRL, typically TRL 6 and above, were prioritized, as they indicate closer proximity to market deployment.
- 2. **Commercial readiness:** Emphasis was placed on projects with clear pathways to commercial application, including developed use cases and product-market fit.
- 3. **Research needs**: Projects requiring limited or well-defined additional R&D were considered more mature and less risky for exploitation.
- 4. **Market potential and industry relevance**: Priority was given to projects addressing clearly identified pain points with well-defined user segments and sector alignment.
- 5. **Funding and investment readiness**: Preference was given to projects that require minimal additional investment to reach the market, or that have already secured partial funding.
- 6. **Partnerships and collaborations**: Projects that had already established collaborations with industry, NGOs, or public authorities were deemed more feasible for near-term deployment.





- 7. **Innovation and scalability**: The assessment favored projects with demonstrable innovation and potential for deployment at scale, both technically and geographically.
- 8. Unique Value Proposition (UVP): Projects offering a distinct and compelling value proposition, especially those differentiated from existing solutions, were ranked higher.

These criteria were applied consistently across the 21 valid survey responses, enabling a comparative analysis to support the identification of the most mature and investor-ready initiatives. The application of these indicators served as the foundation for the shortlisting exercise presented in Section 2.5.

2.3 Overview of Surveyed Projects

The 21 projects that responded to the survey represent a diverse and dynamic crosssection of the LEAP-RE portfolio, spanning various sectors such as solar energy, hydrogen, geothermal, smart grids, water treatment, clean cooking, and circular economy. Each project submitted information aligned with the assessment criteria outlined in the previous section, enabling a comparative review of their technical maturity, market orientation, and strategic needs. This section presents a concise overview of each project based on their self-reported data, including key elements such as objectives, target users, technology readiness level¹, unique value proposition, and specific support needs. Together, these profiles provide a detailed picture of the innovation landscape within the LEAP-RE initiative and inform the subsequent shortlisting process.

2.3.1 Geothermal Atlas for Africa (GAA)

- Team Leader: UNIFI
- Objective: Comprehensive mapping and assessment of geothermal resources across Africa.
- Target Audience: Energy industries, entrepreneurs, policy makers.
- Unique Value Proposition: Detailed geothermal resource mapping to support energy decisions.
- Technology Readiness Level (TRL): Ready for commercial application.
- Needs: Funding and Investment, Business Development and Strategy.
- Supply Chain Readiness: Not assessed.
- Additional Comments: None.

A Comprehensive Methodological Approach on 2.3.2 the Sustainable Management of Energy Resources



¹ The TRL (Technology Readiness Level) scale is a standard framework for assessing the maturity of a technology, from concept (TRL 1) to full deployment (TRL 9). TRL 1-5: Not ready for commercial application; TRL 6-8: Close to commercialization; TRL 9: Fully operational and commercially available.



- Team Leader: Université de Nantes
- Objective: Sustainable management of energy resources with a focus on socioeconomic aspects.
- Target Audience: Researchers, students, electricity sector stakeholders.
- Unique Value Proposition: Methodological framework for energy resource management.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Partnerships and Collaborations.
- Supply Chain Readiness: Not applicable.
- · Additional Comments: None.

2.3.3 HyAfrica: Towards a Next-Generation Renewable Hydrogen Economy

- Team Leader: CONVERGE Portugal
- Objective: Identifying and mapping hydrogen production potential in Africa.
- Target Audience: Energy producing sector for off-grid or standalone applications.
- Unique Value Proposition: Mapping of hydrogen production potential.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Market Research and Validation, Funding and Investment, Product Development and Prototyping, Partnerships and Collaborations.
- Supply Chain Readiness: Not applicable.
- · Additional Comments: None.

2.3.4 QDSOC (Quantum Dot-Sensitized Solar Cells)

- Team Leader: Université de Lorraine
- Objective: Development of new quantum dot-sensitized solar cells.
- Target Audience: Customers interested in smart stand-alone systems.
- Unique Value Proposition: Enhanced efficiency in solar cells.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Funding and Investment, Product Development and Prototyping.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None

2.3.5 Productive Use in Rural African Markets Using Solar (PURAMS)

- Team Leader: Strathmore University
- Objective: Solar-powered productive uses in rural African markets.
- Target Audience: Households in rural African areas.
- Unique Value Proposition: Cost-effective solar solutions for rural households.
- Technology Readiness Level (TRL): Not ready for commercial application.





- Needs: Intellectual Property Protection and Support, Funding and Investment, Business Development and Strategy
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.6 SolChargE

- Team Leader: Technical University of Munich
- Objective: Development and deployment of a standalone solar charging solution.
- Target Audience: Consumers needing portable solar charging solutions.
- Unique Value Proposition: Portable and standalone solar charging system.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Market Research and Validation, Funding and Investment, Product Development and Prototyping
- Supply Chain Readiness: Not applicable.
- Additional Comments: Technical solution not commercially ready yet

2.3.7 Energy Village Concept in Africa

- · Team Leader: University of Vaasa, Finland
- Objective: Development of an energy village concept for sustainable energy use in Africa.
- Target Audience: Rural communities in Africa.
- Unique Value Proposition: Integrated energy solution for rural communities.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Funding and Investment, Business Development and Strategy, Partnerships and Collaborations.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None

2.3.8 A Data-Driven Digital Twin for Improved Hydrogen Production Efficiency

- Team Leader: S Vertical
- Objective: Creating a digital twin to enhance hydrogen production efficiency.
- Target Audience: Hydrogen production facilities.
- Unique Value Proposition: Improved efficiency through data-driven simulations.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Market Research and Validation, Funding and Investment, Business Development and Strategy.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None

2.3.9 Geothermal Village





- Team Leader: Université de Lorraine
- Objective: Development of a geothermal-powered village.
- Target Audience: Rural communities in geothermally active regions.
- Unique Value Proposition: Sustainable and renewable energy for rural communities.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Intellectual Property Protection and Support, Market Research and Validation, Funding and Investment, Product Development and Prototyping.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.10 Solar Indoor Cooking Systems of the Next Generation (SoCoNexGen)

- Team Leader: Solar-Institut Jülich der FH Aachen, Campus Jülich | University of Applied Science
- Objective: Development of advanced solar cooking systems.
- Target Audience: Households in regions with high solar insolation.
- Unique Value Proposition: Efficient and sustainable indoor cooking solutions.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Intellectual Property Protection and Support, Market Research and Validation, Funding and Investment, Product Development and Prototyping.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.11Optimizing Integrated Mini Grids for Water-Energy-Food Nexus

- Team Leader: Reiner Lemoine Institut
- Objective: Optimization of integrated mini grids for the water-energy-food nexus.
- Target Audience: Communities requiring integrated energy solutions.
- Unique Value Proposition: Enhanced efficiency and integration of mini grids.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Market Research and Validation, Business Development and Strategy, Partnerships and Collaborations.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.12 Renewables for African Agriculture - Integration with Smart Farming Technologies (RE4AFAGRI)

- Team Leader: IIASA | International Institute for Applied Systems Analysis
- Objective: Integration of renewable energy with smart farming technologies.





- Target Audience: Agricultural stakeholders, policymakers, energy developers...
- Unique Value Proposition: Improved agricultural efficiency through renewable energy.
- Technology Readiness Level (TRL): Yes, ready for commercial application.
- Needs: Funding and Investment, Business Development and Strategy.
- Supply Chain Readiness: Not applicable.
- Additional Comments: Did not develop new hardware technology.

2.3.13 Smart Home Energy: Development of an Integrated Smart Home Energy Management System

- Team Leader: Institute of Thermal Engineering Research group "Sustainable, Clean and Bioenergy systems" Graz University of Technology
- Objective: Development of an integrated smart home energy management system.
- Target Audience: Households looking to optimize energy usage.
- Unique Value Proposition: Smart home energy management.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Business Development and Strategy, Product Development & Prototyping
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.14 Recycling of the Cathodes, Based on Carbon Nanotubes, in Lithium-Ion Batteries

- Team Leader: National institute of Materials Physics (NIMP)
- Objective: Recycling of lithium-ion battery cathodes using carbon nanotubes.
- Target Audience: Battery manufacturers, recycling companies.
- Unique Value Proposition: Improved recycling process for battery components.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Market Research & Validation, Product Development and Prototyping
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.15 REPTES - Renewable Plants Integrated with Pumped Thermal Energy Storage

- Team Leader: University of Cagliari, Department of Mechanical, Chemical and Material Engineering
- Objective: Integration of renewable plants with pumped thermal energy storage.
- Target Audience: Renewable energy sector.
- Unique Value Proposition: Enhanced energy storage solutions.
- Technology Readiness Level (TRL): Not ready for commercial application.





- Needs: Intellectual Property Protection and Support, Market Research and Validation, Funding and Investment, Product Development and Prototyping.
- Supply Chain Readiness: Not applicable.
- Additional Comments: None.

2.3.16 LEOPARD

- Team Leader: Université de Picardie Jules Verne | UPJV
- Objective: Disseminate micro-grids with renewable energy sources in Africa.
- Target Audience: Households, communities, and businesses with limited grid access.
- Pain Points Addressed: Reliable off-grid power solutions.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Research Needs: Funding and Investment, Business Development and Strategy, Product Development and Prototyping.

2.3.17 SUNSAFE II

- Team Leader: Evonet Ltd.
- Objective: Develop a Solar System Sizing and Financing Tool.
- Target Audience: Local communities, energy developers, and policymakers.
- Pain Points Addressed: Improved off-grid solar solutions.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Research Needs: Intellectual Property Protection and Support, Funding and Investment, Business Development and Strategy, Product Development and Prototyping

2.3.18 Enabling Clean and Sustainable Water through Solar-Driven Desalination

- Team Leader: CITST Romania
- Objective: Foster long-term collaboration to develop renewable energy solutions for clean water.
- Target Audience: Local communities, policymakers, and water management authorities.
- Pain Points Addressed: Provision of clean and sustainable water using renewable energy.
- Technology Readiness Level (TRL): Not ready for commercial application
- Research Needs: Funding and Investment, Business Development and Strategy, Product Development and Prototyping

2.3.19 Hybrid Biochemical and Thermochemical Conversion of Organic Waste to Biofuels

• Team Leader: Université Mohammed VI Polytechnic





- Objective: Develop hybrid methods for converting organic waste to biofuels.
- Target Audience: Waste management authorities, biofuel producers, and policymakers.
- Pain Points Addressed: Waste management, environmental impact, production of sustainable biofuels.
- Technology Readiness Level (TRL): Not ready for commercial application
- Research Needs: Market Research and Validation, Product Development and Prototyping

2.3.20 SIREVIVAL

- Title: SIREVIVAL
- Team Leader: Universite catholique de Louvain
- Objective: Reduction of environmental impact of spent photovoltaic (PV) modules.
- Target Audience: Recycling companies, companies involved in the production of novel materials.
- Unique Value Proposition: Specific formulations of recycled materials for building all solid-state supercapacitors integrated with modern PV cells.
- Technology Readiness Level (TRL): Not ready for commercial application.
- Needs: Intellectual property protection, market research, funding, business development, regulatory compliance

2.3.21 NANOSOLARCELLS

- Title: Integration of photonic conversion layers based on photoemissive nanostructured materials for improving sunlight harvesting ability of solar cells.
- Team Leader: CNRS (France)
- Objective: Improvement in performance of PV cells by applying photon conversion layers.
- Target Audience: Photovoltaic power plant installers, photovoltaic module producers.
- Unique Value Proposition: Cost-effective and sustainable method to improve PV cell efficiency using abundant precursors.
- Technology Readiness Level (TRL): In development, large-scale outdoor validation pending.
- Needs: Intellectual property protection, funding, product development, regulatory compliance

2.4 Needs Assessment and Maturity Trends

The analysis of the 21 surveyed projects revealed a broad diversity in terms of technology domains, readiness levels, and commercialization needs. While several initiatives are approaching market deployment, a significant number remain in earlier stages of development, facing common barriers that hinder their transition from research to application.

2.4.1 Technology Readiness Levels (TRLs)





Among the respondents:

- 3 projects declared a TRL indicating readiness for commercial application (e.g. GAA, RE4AFAGRI, SUNSAFE II).
- The majority (approx. 85%) are positioned in mid-to-late development phases (TRL 4–6), with ongoing prototyping, validation, or user engagement activities.
- A smaller subset is still in early-stage research, including projects with limited proofof-concept validation or undefined deployment strategies (e.g. NANOSOLARCELLS, SIREVIVAL).

This distribution reflects a portfolio-wide transition phase, with many innovations preparing to scale but requiring targeted support to reach market readiness.

2.4.2 Common Support Needs Identified

The survey highlighted recurring strategic needs across the portfolio. Most frequently cited categories include:

- Funding and investment: Identified by over 75% of projects, this remains the most pressing barrier, especially for activities related to prototyping, testing, and pilot deployment.
- Business development and strategy: Many projects, even those with advanced technologies, lack a clearly defined go-to-market strategy or pricing model.
- Product development and prototyping: Several innovations are still developing functional prototypes or adapting technologies for their final use cases.
- Market research and validation: Respondents frequently noted the need for structured engagement with target users to validate assumptions, assess demand, and refine features.
- Intellectual Property (IP) protection and support: Particularly relevant for hardware-based or materials innovations, where patenting and licensing frameworks are critical.

2.4.3 Cross-Sector Maturity Observations

- Solar energy and smart grids: Projects in this category (e.g. PURAMS, LEOPARD, SHE, SUNSAFE II) generally show higher levels of application potential, yet face constraints around business model development and investor alignment.
- Clean cooking and energy access: Several initiatives tackle critical societal needs but often struggle with market differentiation and cost-effectiveness (e.g. SoCoNexGen, Solar Induce).
- Advanced materials and recycling: Projects like QDSOC and SIREVIVAL demonstrate innovative concepts but remain early-stage, requiring R&D consolidation and clearer routes to commercialization.
- Hydrogen and water technologies: While high-impact in theory, these projects tend to have more complex technical and regulatory trajectories and are currently midmaturity.





2.4.4 Observed Patterns and Strategic Implications

- There is a strong alignment with sustainable development goals, especially in clean energy access, rural electrification, agriculture, and water.
- Projects that demonstrated a well-defined target audience and application scenario (e.g. RE4AFAGRI, SolChargE, LEDSOL) tended to score higher on maturity indicators.
- The lack of early engagement with investors or commercial partners is a common challenge, even among technically advanced initiatives.

These maturity trends highlight the need for tailored support interventions to accelerate commercialization pathways. They also provide a critical baseline for the next phase of project evaluation through interviews, as presented in Section 2.5.

2.5 Selection of Shortlisted Projects for Further Evaluation

Based on the evaluation criteria presented in Section 2.2 and the self-reported survey data summarised in Section 2.3, a shortlist of six projects was identified as the most mature and promising candidates for further strategic support. These projects demonstrated either commercial readiness or significant proximity to market, coupled with a strong value proposition, defined end-user segments, and alignment with key energy sector needs in Africa.

The selection was guided by a combination of quantitative indicators, such as Technology Readiness Level (TRL), market relevance, and investment needs, and qualitative factors such as innovation potential, uniqueness, and strategic alignment with LEAP-RE goals.

The table below presents an overview of the selected projects and the rationale for their inclusion:

Table 1 Table of selected mature projects

Commercial Readiness: Yes Research Needs: Funding and Investment, Business Development and Geothermal Atlas for Market and Industry Relevance: High relevance to energy sectors. Africa (GAA) Funding and Investment: Requires investment for scaling. Partnerships and Collaborations: Likely to have strong industry support. Intellectual Property: Likely protected, though not explicitly mentioned. **RE4AFAGRI** TRL: Ready for commercial application. Renewables African Agriculture -Needs: Funding and Investment, Business Development and Strategy. Integration Target Audience: Agricultural stakeholders, policymakers, energy **Farming** Smart developers. Technologies Unique Value Proposition: Improved agricultural efficiency through renewable energy.





Productive Use in Rural African Markets Using Solar Energy (PURAMS)	 Commercial Readiness: No, but highly relevant. Research Needs: Intellectual Property Protection and Support, Funding and Investment, Business Development and Strategy Market and Industry Relevance: High relevance to rural markets and solar energy. Funding and Investment: Requires investment for scaling. Partnerships and Collaborations: Likely to have strong industry support. Intellectual Property: Requires protection.
LEOPARD	 Commercial Readiness: No, but highly relevant. Research Needs: Funding and Investment, Business Development and Strategy, Product Development and Prototyping Market and Industry Relevance: High relevance to off-grid power solutions. Funding and Investment: Requires investment for development and scaling. Partnerships and Collaborations: Likely to have strong industry support. Intellectual Property: Requires protection.
SIREVIVAL	 TRL: 3 (early stage). Needs: Intellectual property protection, market research, funding, business development, regulatory compliance. Target Audience: Recycling companies, companies involved in the production of novel materials. Unique Value Proposition: Specific formulations of recycled materials for building all solid-state supercapacitors integrated with modern PV cells.
Smart Home Energy: Development of an Integrated Smart Energy Management System	 Commercial Readiness: No, but highly relevant. Research Needs: Business Development and Strategy, Product Development and Prototyping Market and Industry Relevance: High relevance to smart energy management systems. Funding and Investment: Requires investment for development and scaling. Partnerships and Collaborations: Likely to have strong industry support. Intellectual Property: Requires protection.

2.5.1 Summary of Selected Projects

- 1. **Geothermal Atlas for Africa (GAA)**: High TRL, a clear target audience, and a unique mapping proposition make this project a prime candidate for immediate investor engagement.
- 2. **RE4AFAGRI**: With a confirmed TRL and integration of renewable energy in agriculture, this project holds strong transformative potential for African farming sectors.





- 3. **PURAMS**: This project responds to a pressing societal need with cost-effective solar solutions and job creation potential in rural African contexts.
- 4. **LEOPARD**: Although not yet commercialized, LEOPARD's focus on off-grid solar mini-grids, strategic partnerships, and deployment design places it in a strong premarket position.
- 5. **SIREVIVAL**: Despite early-stage maturity, the project's focus on sustainable recycling of PV waste and novel supercapacitor materials positions it as an innovative disruptor.
- 6. **Smart Home Energy (SHE)**: As demand for smart, decentralized energy systems grows, this project offers timely relevance, provided it can secure prototyping and business development support.

Note on SUNSAFE II

While SUNSAFE II demonstrates high commercial readiness and relevance for improving off-grid solar access in Kenya, it was not included in the shortlist because it falls outside the scope of the LEAP-RE portfolio. Nevertheless, the project remains a strong candidate for showcasing in other strategic forums and dissemination platforms.

2.6 Key Takeaways and Transition to Interview Phase

The survey phase served as an essential first step in mapping the maturity landscape of the LEAP-RE project portfolio. Through structured self-assessment and analysis of 21 responses, the process delivered both a snapshot of current innovation readiness and a foundation for prioritised support. Several key insights emerged from this exercise:

- **High engagement and participation**: With a response rate of 68%, the survey generated a representative dataset across diverse sectors, technologies, and geographies within the LEAP-RE initiative.
- **Maturity clustering**: While a few projects were found to be at or near commercial readiness, the majority fell into mid-development stages, with several requiring strategic support to bridge the gap to market deployment.
- Recurring barriers: Across the portfolio, funding needs, prototyping, and business
 development emerged as common gaps. A limited number of projects had
 conducted structured market validation or defined investor engagement pathways.
- **Sectoral promise**: Thematic clusters such as renewable energy in agriculture, smart grid systems, and rural electrification displayed strong market potential. Projects in advanced materials or hydrogen, though technically innovative, tended to have longer commercialization trajectories.
- **Shortlisted candidates**: Six projects were identified as the most mature and promising for further evaluation. These were selected based on their technical readiness, market relevance, and strategic alignment with LEAP-RE's objectives.

In light of these findings, the next phase of the strategic assessment focused on conducting targeted interviews with the most promising project teams. The goal was to deepen the evaluation of business models, investment needs, implementation strategies, and potential barriers to adoption. This interview process served as a qualitative validation of the survey results and enabled more nuanced, project-specific recommendations.





The following section outlines the outcomes of these interviews and presents the final assessment of investor readiness, which will guide project selection for the LEAP-RE Innovation Camp and other exploitation activities.

3. In-Depth Strategic Evaluation through Interviews

Following the survey-based maturity screening, a second phase of evaluation was conducted to deepen the analysis of selected projects and support strategic decision-making for exploitation activities. While the survey offered a quantitative snapshot of technical readiness and strategic needs, the interview phase was designed to explore in greater depth the business logic, commercial potential, implementation pathways, and scalability prospects of each project.

This in-depth evaluation was carried out through structured one-on-one interviews with the project leaders of the most promising candidates identified in the initial screening. These interviews aimed to gather qualitative insights that could not be captured through the survey alone, such as the clarity of each project's business model, the credibility of its go-to-market strategy, the maturity of its partnership ecosystem, and its attractiveness to potential investors or public funders.

The interview phase also provided an opportunity to assess the commitment and strategic mindset of the project teams, which is an essential success factor in the exploitation process. A common set of evaluation criteria was used across all interviews to ensure consistency, transparency, and comparability. These criteria included technology robustness, customer definition, scalability, investment needs, and alignment with market dynamics.

The interviews were conducted remotely and involved both African and European consortium partners, with participation from strategic advisors and exploitation experts within the LEAP-RE Task Force.

This section presents the methodology, evaluation logic, and project-specific insights derived from the interview process. It concludes with a refined shortlist of projects to be supported and pitched at the LEAP-RE Innovation Camp, based on both quantitative scoring and strategic alignment.

It is important to note that the number of projects assessed in the interview phase was revised from the initially planned six to a final total of nine. This adjustment was made to accommodate availability constraints and internal changes within the project teams. Some originally shortlisted projects were unable to participate due to scheduling conflicts or evolving priorities, while others, previously ranked just below the top tier, were included as suitable and available candidates for in-depth evaluation. The updated list of nine projects thus reflects both strategic relevance and practical feasibility of engagement during the interview phase.

The projects selected for interview were:

1. Geothermal Atlas for Africa (GAA)

- a. <u>Objective:</u> Comprehensive mapping and assessment of geothermal resources across Africa.
- b. <u>Target Audience:</u> Energy industries, entrepreneurs, policy makers.





c. <u>Value Proposition:</u> Detailed geothermal resource mapping to support energy decisions.

2. PURAMS

- a. <u>Objective:</u> Solar-powered productive uses in rural African markets.
- b. Target Audience: Households in rural African areas.
- c. Value Proposition: Cost-effective solar solutions for rural households.

3. SOLCHARGE

- a. <u>Objective:</u> Development and deployment of a standalone solar charging solution.
- b. Target Audience: Consumers needing portable solar charging solutions.
- c. Value Proposition: Portable and standalone solar charging system.

4. SOCONEXGEN

- a. Objective: Development of advanced solar cooking systems.
- b. <u>Target Audience</u>: Households in regions with high solar insolation.
- c. Value Proposition: Efficient and sustainable indoor cooking solutions.

5. RE4AFAGRI

- a. <u>Objective</u>: Integration of renewable energy with smart farming technologies.
- b. <u>Target Audience:</u> Agricultural stakeholders, policymakers, energy developers.
- c. <u>Value Proposition:</u> Improved agricultural efficiency through renewable energy.

6. SHE

- a. <u>Objective</u>: Development of an integrated smart home energy management system.
- b. <u>Target Audience:</u> Households looking to optimize energy usage.
- c. <u>Value Proposition</u>: Smart home energy management.

7. LEOPARD

- a. Objective: Disseminate micro-grids with renewable energy sources in Africa.
- b. <u>Target Audience</u>: Households, communities, and businesses with limited grid access.
- c. Value Proposition: Reliable off-grid power solutions.

8. SUNSAFE

- a. Objective: Develop a Solar System Sizing and Financing Tool.
- b. <u>Target Audience</u>: Local communities, energy developers, and policymakers.
- c. Value Proposition: Improved off-grid solar solutions.

9. LEDSOL

- a. <u>Objective</u>: Foster long-term collaboration to develop renewable energy solutions for clean water.
- b. <u>Target Audience:</u> Local communities, policymakers, and water management authorities.





c. <u>Value Proposition</u>: Provision of clean and sustainable water using renewable energy.

The selected projects fall under the following market/category sector (Table 2):

Table 2 Categorisation of Interviewed Projects by Market Sector

Market Sector	Project	
Solar cooking	 SOCONEXGEN: Development of advanced solar cooking systems. 	
Energy integration	 SHE: Development of an integrated smart home energy management system. LEOPARD: Disseminate micro-grids with renewable energy sources in Africa. 	
Geothermal energy	Geothermal Atlas for Africa (GAA): Comprehensive mapping and assessment of geothermal resources across Africa.	
Solar energy	 PURAMS: Solar-powered productive uses in rural African markets. SOLCHARGE: Development and deployment of a standalone solar charging solution. SUNSAFE: Develop a Solar System Sizing and Financing Tool. 	
Agricultural energy	RE4AFAGRI: Integration of renewable energy with smart farming technologies.	
Water disinfection and community focused energy	LEDSOL: Foster long-term collaboration to develop renewable energy solutions for clean water.	

3.1 Overview of the Interview Process

The interview phase was initiated to complement the survey-based assessment by gathering more granular and qualitative insights into the strategic maturity and market readiness of selected LEAP-RE projects. While the survey provided a structured foundation for evaluating the portfolio, the interviews enabled deeper exploration of critical dimensions such as commercialisation pathways, partnership dynamics, investor expectations, and long-term sustainability.

A total of nine projects were ultimately selected and interviewed between July and early August 2024. These interviews were conducted remotely via video conferencing and involved a mix of project coordinators, business development leads, and technical experts.

Each session lasted approximately 45–60 minutes, following a standardised protocol that ensured comparability across responses while allowing space for contextual elaboration..





The project teams were invited based on their relative maturity, strategic alignment with LEAP-RE objectives, and willingness to engage in the exploitation process. As mentioned earlier, a few changes were made to the original shortlist due to internal constraints or unavailability of project coordinators, resulting in a final set of nine projects that demonstrated both readiness and responsiveness.

The interviews were led by members of the LEAP-RE Task 4.3 team, including strategic advisors and exploitation specialists, and were structured around a set of thematically grouped guestions covering seven key evaluation areas:

- Technology and innovation robustness
- Market and customer validation
- Business model and strategy
- Investment and funding readiness
- Implementation feasibility
- Partnership ecosystem and scalability
- Exit strategy and long-term vision

Responses were synthesised into qualitative insights and semi-quantitative scores, which are presented in the subsequent sections. This process enabled a balanced, multidimensional evaluation of each project's potential for commercial deployment, external funding, and long-term impact.

Out of the 9 selected projects, 8 were interviewed over the period of July and August 2024, with the exception of SoCoNexGen.

The SoCoNexGen project, focused on the development of thermal solar cookers, did not wish to be interviewed or pitched at the Innovation Camp primarily due to the project's current developmental stage and limitations. Despite significant efforts in developing four different solar cookers, the project is constrained by a Technology Readiness Level (TRL) of 6, as set by the German funding agency, meaning the cookers are not yet market-ready. Additionally, due to project delays, thorough testing of the solar cookers has not yet commenced, and the team lacks the resources for an in-depth market analysis.

As a result, the project is still in the evaluation phase, determining which, if any, of the developed solar cookers will be viable for future production and distribution. Consequently, the project team prefers to focus on achieving solid outcomes and presenting initial test results at the LEAP-RE Stakeholder Forum, rather than participating in an investor pitch at this stage.

3.2 Interview Evaluation Framework

To ensure a consistent and transparent assessment of the projects during the interview phase, a structured evaluation framework was developed. This framework was based on the thematic areas explored in the interview guide and aligned with the broader LEAP-RE objectives of fostering commercially viable, impactful, and scalable energy solutions across Africa and Europe.

Each project was assessed across seven strategic dimensions, capturing both technical robustness and market orientation. These dimensions were further broken down into





specific evaluation criteria, allowing for semi-quantitative scoring supported by qualitative insights.

Dimension	Key Criteria Assessed
Technology and innovation	Maturity of technology, proof of concept, competitive advantage, IP status
Customer and market validation	Identification of customer segments, market size, pain points addressed, pilot users
Business model and strategic clarity	Revenue model, value proposition, strategic fit with market trends
Investment readiness	Funding needs, fundraising strategy, use of funds, investor engagement
Implementation feasibility	Team capacity, operational readiness, technical deployment plan
Partnerships and ecosystem	Existing or potential collaborations, role of industrial partners, ecosystem integration
Scalability and exit strategy	Potential to scale, replication model, long-term sustainability, exit plans

Each criterion was scored on a scale from 1 to 5, where:

- 1 = Very weak / not addressed
- 2 = Limited / early stage
- 3 = Moderate / partially defined
- 4 = Strong / well articulated
- 5 = Excellent / clearly validated

Interviewers used both the verbal responses and submitted materials (when available) to assign scores. These scores were not intended as absolute measures but rather as guiding indicators to compare projects and inform selection decisions.

The framework also allowed interviewers to note qualitative remarks, such as strategic risks, market gaps, or innovation potential not fully reflected in the scores. These remarks were crucial for triangulating data and understanding each project's unique position in the innovation pipeline.

In the following section, a summary of individual project insights and comparative scores will be presented, illustrating how the evaluation framework was applied in practice.





3.3 Project Summaries and Key Insights

Project	Description and Technology	Innovation Aspects	Impact and Scalability	Market Strategy	Investment and Implementation Plan	Exit Strategy for Investors
SHE	A cookstove with extremely low emissions and high efficiency. It uses biomass pellets and incorporates a thermoelectric generator (TEG).	Integration of low-emission technology with the ability to use various biomass fuels. Includes carbon tracking technology.	Reduces deforestation and improves health in rural Africa. Scalable as biomass waste is abundant and renewable.	Revenue from biomass pellets, stove sales, and carbon credits. Targeting rural communities in Africa.	Manufacturing and roll-out of 100,000 stoves in Southern Africa. Further R&D on cost reduction and mass production.	No specific exit strategy detailed. The product has high potential for community-based and NGO-supported implementations.
PURAMS	A solar cooker system designed for rural areas in Kenya, aiming to reduce energy consumption.	Focus on rural implementation with lower costs compared to competitors.	Job creation and health benefits. Scalable with mass production, targeting villages with lower power needs.	Still developing a business model. Engaging with local stakeholders and government partnerships.	No serious investor yet. Needs mass production support and business model refinement.	No clear exit strategy. The project is in early stages with prototypes being developed.
LEDSOL	A portable water disinfection unit using UVA/UVB/UVC LEDs, powered by renewable energy (solar and wind).	Portable, self-powered, and combines multiple UV technologies for higher efficiency.	High potential in remote areas with a focus on health improvement and reducing waterborne diseases.	Target markets are remote areas in Africa, with potential for use in calamities and leisure/tourism markets.	1 million Euro investment needed for scaling and commercializing the prototype.	No exit strategy detailed. Focus on establishing local production and distribution channels in Africa.
RE4AFAGRI	A knowledge-based product for enhancing agricultural productivity through renewable energy.	Focus on training local researchers and developing scientific tools for sustainable agriculture.	Socio-economic impact with potential to scale in various African countries. Training and knowledge dissemination.	Engaging with stakeholders and aiming for further funding to expand the project's reach.	World Bank co-funding, looking for additional investment to expand the geographical coverage and tool development.	No clear exit strategy. The focus is on long-term knowledge dissemination and agricultural enhancement.
SUNSAFE	A solar panel system with a focus on improving technician training and affordability of components in Kenya.	User-friendly, accurate, and designed for ease of installation and use in rural Kenya.	Scalable with potential expansion to include additional functionalities like emotorbikes.	Targeted partnerships with universities and local stakeholders. Potential for expanding into new regions.	Need for additional researchers and technicians to scale. Seeking investment for further R&D and market expansion.	No exit strategy detailed. The focus is on establishing a sustainable model for expanding the technology's reach.
GAA	An assessment tool for identifying optimal technologies to exploit geothermal resources in Africa.	A comprehensive tool for assessing geothermal resources and their socioeconomic impacts.	High potential for guiding energy policy in Africa. Scalable for both large and small-scale applications.	Collaboration with local universities and government agencies. Potential for commercialization through partnerships.	Currently funded by the LEAP project. Seeking additional funds for expanding the tool's capabilities and geographical reach.	No exit strategy provided. The project is in the development phase with a focus on long-term applications in energy policy.
LEOPARD	A solar mini-grid solution with containerized systems for rapid deployment in West Africa.	Unique design for rapid deployment and remote monitoring capabilities.	Scalable with potential for extensive impact in rural electrification across West Africa.	Developed strategic partnerships with local and international organizations.	Seeking 4.5 million Euro for a Pre-Series B equity round. Focus on securing suppliers and scaling production.	Exit strategy involves potential conversion of notes to shares or reimbursement within 3-7 years, depending on performance.
SolCharge	A stand-alone solar charging station (SASCS) for electric vehicles (EVs) developed for rural transport hubs in Sub-Saharan Africa.	Focus on circular principles in design and manufacturing, with local capacity building.	Significant impact on mobility, especially for women and children, and local economic development. Scalable to other rural areas.	Developed in collaboration with universities in Ethiopia and South Africa. Testing in rural areas of these countries.	Emphasizes local manufacturing and capacity building, leveraging existing partnerships.	No exit strategy detailed. The focus is on establishing a sustainable model for expanding the technology's reach.





3.4 Comparative Evaluation and Scoring

The following table presents the evaluation of the eight projects, each assessed based on their innovation, market readiness, potential impact, and scalability. The evaluation considers both the project's current state and its potential for further development, particularly in terms of market entry and investment appeal. Each project has been assigned a participation score from 0 to 5, reflecting its readiness for presentation and pitching at the Milan Innovation Forum.

Summary of Evaluation Criteria

- **Innovation**: The uniqueness and technological advancement of the project.
- **Market Readiness**: The project's preparedness to enter the market, including the development of a viable business model.
- **Impact and Scalability**: The potential societal, environmental, and economic impacts of the project, as well as its ability to scale across different markets.
- **Maturity**: The level of development, including any existing partnerships, investments, and the project's progress towards commercialization.
- **Pitch Potential**: The overall appeal of the project for pitching to investors, based on the above factors.

Project Title	Evaluation	Participation Score (0 to 5)
GAA	This project is currently focused on research with significant potential for practical application. To enhance its market readiness, further alignment with real-world applications is necessary.	1
PURAMS	While this solar cooker project addresses an important need, the market is saturated with similar products. To succeed, the project must clearly differentiate itself and establish a unique value proposition.	2
SolChargE	The SolChargE project has developed a functional prototype with considerable potential. However, challenges related to market entry and the high-tech nature of the product must be addressed to ensure successful adoption.	2
RE4AFAGRI	This project presents an innovative approach, merging renewable energy with agriculture. However, the business model requires further refinement to maximize impact and ensure long-term sustainability.	4
LEOPARD	LEOPARD is a highly mature project with strong strategic partnerships and substantial investment already secured. It is well-positioned for market entry and demonstrates significant potential for success.	5





SHE	Although still under development, SUNSAFE II holds promise in the solar energy market. Continued progress and further development are essential to prepare it for market entry.	4
SUNSAFE	This project is still in development, focusing on the solar energy market. It has the potential, but more work is needed to bring it to market.	3
LEDSOL	LEDSOL offers a promising solution for clean water through UV/LED disinfection technology. To fully realize its potential, the project must address scalability concerns and enhance its market readiness.	4

Based on the evaluation, the top candidates for pitching at the Milan Forum were:

- LEOPARD With a participation score of 5, this project is very mature, has already secured significant investment, and has strong strategic partnerships. It is wellpositioned for market entry and further development.
- **RE4AFAGRI** (Renewables for African Agriculture) Scored 4, this project has a solid foundation with robust business models and partnerships. It is seen as having significant potential, particularly with its innovative approach to integrating renewable energy into agriculture.
- **SHE** (Sustainable Heating for Empowerment) Also scored 4, this project stands out for its innovative low-emission technology aimed at addressing deforestation and health issues in rural Africa. It is considered to have strong market potential, especially in the African context.

However, all eight projects have confirmed their intent to pitch at the Milan Forum and participated in the Innovation Camp, where they showcased their projects to potential investors.

The in-depth evaluation of the shortlisted projects has not only revealed promising innovation trajectories but has also enabled the selection of high-potential candidates for the LEAP-RE Innovation Camp in Milan in October 2024. All eight projects proceeded to pitch their solutions at the Milan Stakeholder Innovation Forum, offering them a platform to connect with potential investors, strategic partners, and fellow innovators. The following section captures the outcomes of this important milestone and reflects on the visibility, traction, and strategic engagement achieved through the event.





4. LEAP-RE Stakeholder Innovation Forum – Milan October 2024

This chapter presents the outcomes of the LEAP-RE Innovation Forum held in Milan in October 2024, a key milestone in the exploitation plan, where selected portfolio projects pitched to investors and stakeholders.

4.10bjectives and Overview of the Event

The LEAP-RE Stakeholder Innovation Forum, held in Milan in October 2024, served as a central milestone in the project's exploitation and innovation acceleration strategy. Organised as part of the broader efforts to bridge African and European innovation ecosystems, the event aimed to provide a structured platform for showcasing high-potential research projects to stakeholders from both continents.

The main objective of the forum was to connect mature LEAP-RE projects with public and private investors, industrial actors, and innovation support institutions, creating opportunities for visibility, matchmaking, and feedback. The event acted as a gateway for project teams to present their innovations in a market-oriented format, laying the groundwork for future partnerships and potential investment.

Crucially, the forum also marked the transition from internal project development to external engagement. Selected projects had the opportunity to pitch their solutions to a curated audience of experts and potential collaborators, demonstrating not only their technical value but also their commercial and social relevance.

In doing so, the event contributed directly to LEAP-RE's strategic ambition of fostering sustainable, Africa-Europe innovation pathways. It built on the preparatory work conducted through surveys and interviews (detailed in Chapter 3), and formed the launchpad for subsequent initiatives, including the development and dissemination of the LEAP-RE Investment Portfolio.

4.2 Agenda and Format

The LEAP-RE Stakeholder Innovation Forum was designed as a highly curated, two-day event combining structured pitching sessions with dynamic networking formats. The forum took place in Milan in October 2024 and brought together researchers, innovators, investors, policymakers, and ecosystem enablers from both Africa and Europe.

The event was organised around three core components:

4.2.1 Project Pitches

The highlight of the forum consisted of pitch presentations by the eight selected LEAP-RE projects. Each project had a defined time slot to present its innovation, market relevance, and investment needs in front of an expert jury and an audience composed of institutional and private stakeholders. This session provided direct visibility and feedback to project teams, enhancing their strategic positioning for future funding.

4.2.2 Investor and Stakeholder Panels

Panels composed of venture capitalists, development finance institutions, technology transfer experts, and corporate innovation representatives were interspersed between pitch sessions. These discussions focused on:





- Financing mechanisms for climate and energy innovation in Africa
- Strengthening Africa-Europe innovation partnerships
- Navigating market entry and scale-up in African contexts

These exchanges enriched the forum by aligning project ambitions with investor expectations and operational realities on both continents.

4.2.3 Matchmaking and Networking

A dedicated matchmaking session allowed projects to engage directly with potential investors and partners in a one-on-one format. This component was supported by prior circulation of project briefs and investor profiles to ensure relevance and productive dialogue. Informal networking opportunities throughout the forum further encouraged collaboration and exchange.

4.3 Key Outcomes

The LEAP-RE Innovation Forum in Milan represented a pivotal moment in the strategic support and visibility of African-European innovation partnerships within the renewable energy domain. The event successfully bridged early-stage research outputs and investor communities, resulting in several key outcomes:

4.3.1 Investor Engagement and Validation

All eight pitching projects received constructive feedback from investors and ecosystem actors present at the forum. Specific interest was shown in projects that demonstrated clear market entry strategies, robust partnerships, and scalable models, particularly:

- **LEOPARD**, which attracted inquiries regarding its containerised mini-grid system and potential for blended financing
- **RE4AFAGRI**, which was noted for its alignment with agricultural transformation strategies in Sub-Saharan Africa
- **SHE**, which gained traction due to its low-emission cookstove and associated carbon-credit potential

While no deals were finalised on-site, initial conversations initiated during the matchmaking sessions have evolved into ongoing dialogues.

4.3.2 Improved Investment Readiness

The pitching experience and pre-event preparation enhanced the investment readiness of the selected projects. Through pitch coaching, business model refinement, and exposure to investor expectations, project teams were better equipped to articulate their value propositions and navigate the funding landscape.

4.3.3 Formation of the LEAP-RE Investment Portfolio

Following the forum, a consolidated **LEAP-RE Investment Portfolio** was developed (see Annex). This document grouped the most promising projects in terms of investment appeal and included concise investment summaries, project leads, technology readiness indicators, and funding requirements. The portfolio was disseminated to a curated list of





investors, funding institutions, and innovation intermediaries, ensuring post-event continuity and outreach.

4.3.4 Strengthened Africa-Europe Collaboration

The forum highlighted the shared commitment between African and European partners to co-develop sustainable solutions adapted to local realities. The format encouraged cross-border learning, policy dialogue, and practical cooperation opportunities beyond financing, including capacity-building, market access support, and regulatory alignment.

4.4 LEAP-RE Investment Portfolio

Following the Milan Innovation Forum, LEAP-RE developed and published an Investment Portfolio designed to consolidate and present the most promising innovation cases emerging from the initiative. This document serves as a curated gateway for potential investors, development partners, funding agencies, and other stakeholders interested in supporting clean energy innovation across Africa and Europe.

The Investment Portfolio features detailed project snapshots highlighting innovation potential, market relevance, scalability, and investment readiness. It includes technical descriptions, team profiles, market strategies, and specific funding needs of the projects, enabling informed engagement by stakeholders. The projects featured were selected based on their performance during the interview stage and subsequent presentation at the Innovation Camp in Milan.

By translating the outcomes of the forum into a clear, action-oriented document, LEAP-RE ensures continuity of effort and supports long-term visibility for the participating teams. The portfolio is being actively circulated within targeted investor networks and strategic partners as part of a broader investment matchmaking and dissemination strategy.

This step marks the transition from showcasing innovation to actively mobilising investment and partnerships, reflecting LEAP-RE's commitment to bridging the gap between research-driven innovation and real-world market deployment. The LEAP-RE Investment Portfolio can be found in the following pages, offering a comprehensive overview of the selected projects and their investment opportunities.





1) RE4AFAGRI: Renewable energy for agriculture 🔭

The challenge: a growing crisis

- Africa's rural population is expanding rapidly, yet water, electricity, and food security remain critical challenges.
- 90% of cropland is rainfed.
- 60% of the population faces food insecurity.
- 35%+ live below the international poverty line.
- Climate change is intensifying these challenges.

Lack of critical infrastructure is preventing sustainable development

Competitive advantage

- Identifies the best crops & irrigation methods for each location.
- Determines energy requirements for transitioning to artificial irrigation.
- Assesses renewable energy options to power these solutions.
- Develops sustainable business models for rural electrification & agriculture.
- Supports African governments in implementing data-driven policies.

Unlike private companies that sell expensive proprietary tools, we transfer knowledge and ownership to African experts, ensuring long-term scalability and sustainability.

The solution: RE4AFAGRI

A science-backed decision-making platform that helps African policymakers, investors, and developers plan sustainable infrastructure by:

- ✓ Providing decision-relevant tools for agriculture, energy, and water access.
- ✓ Empowering local experts through capacity-building and training.
- ✓ Creating business model frameworks for private sector engagement.
- Our digital tools integrate with the World Resources Institute's Energy Access Explorer, allowing us to target areas with maximum impact potential.

Milestones & roadmap

- **2021-2024:** Phase 1 Pilot project funded by EC Horizon Europe.
- 2025: Phase 2 Upscaling and implementation, expanding to 10 countries.
- 🙀 2026+: Develop long-term training programs and integrate with national policies.
- **2027+:** Full-scale adoption, supporting governments and private sector investments in rural electrification and agriculture.

© Key market segments & growth potential

After securing funding and successfully implementing Phase-1 (2021-2024), we are now launching Phase-2 (2025-2027) to scale and implement our solution in 10 African countries:

- Current pilot countries: Zambia, Zimbabwe, Kenya, Rwanda, Nigeria.
- Phase-2 expansion: Tanzania, Ethiopia, DR Congo, Ghana, Uganda.
- Goal: Address 325 million people without electricity access by upscaling our tools and partnerships.

Investment & funding needs

- Seeking grant funding from:
- International Development Agencies
- 🈩 Private Foundations focused on sustainable development
- Why Invest?
- ✓ Backed by world-class institutions (IIASA, POLITO, WRI, HEAS).
- ✓ A strong network of 350+ trained experts and policymakers.
- ✓ Proven success in Phase-1, now ready to triple our impact.
- ✓ Direct engagement with African governments & private sector stakeholders.
- Contact us (upon request)
- IIASA | International Institute for Applied Systems Analysis

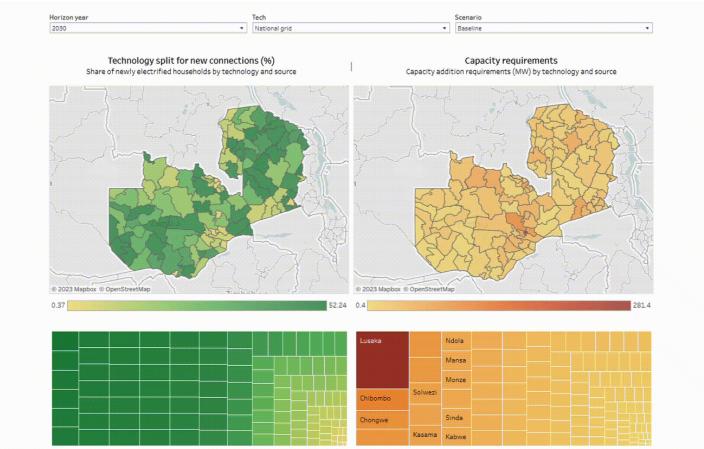














2) SolChargE: Mobile solar for clean energy & EVs +



The challenge: energy & mobility gaps in Africa

- 590 million people in Sub-Saharan Africa lack electricity access (Ritchie et al., 2019).
- Remote communities struggle with unreliable power grids and frequent blackouts.
- Growing EV market (\$0.5B+ in South Africa) but charging infrastructure is lagging.
- Traditional solutions are slow & expensive (microgrids, fossil fuel generators).
- ♦ SolChargE bridges the gap by providing clean, mobile solar energy solutions.

Competitive advantage

- Modular & Mobile: Deploys faster and cheaper than microgrids.
- Integrated Clean Mobility: Supports EV charging + solar power generation.
- Affordable & Locally Produced: Built in partnership with local manufacturers to drive adoption and lower costs.
- Scalable Model: Can expand to multiple applications (agriculture, small businesses, disaster response).
- Unlike competitors (Powerhive, Husk Power, PowerGen), SolChargE offers unmatched flexibility & cost-effectiveness for Africa's diverse energy needs.

The solution: SolChargE mobile solar power

A modular, rapidly deployable solar charging platform designed to:

- ✓ Deliver clean, reliable energy where traditional infrastructure is unavailable.
- ✓ Support electric mobility for rural transport & logistics.
- ✓ Enable off-grid power solutions for businesses, homes, and emergency relief.
- ✓ Reduce reliance on fossil fuels and cut long-term costs for users.
- ★ Tested across multiple real-world applications (Stationary, Mobile, E-Cross Africa) → Proven effectiveness in diverse environments.

Milestones & roadmap

- 2023: Completed prototype testing → Reliability & efficiency validated.
- **3025**: Development phase → Achieve Technology Readiness Level (TRL) 8.
- **2026**: Pilot launch \rightarrow production begins (2 trailers/month, scaling to 10+ trailers/month).
- 2027+: Expansion → increase production, enter new markets across SSA.

© Key market segments & growth potential

- EV Charging in constraint environments: Fast-growing African EV market needs scalable charging infrastructure.
- Off-grid power supply: Businesses & homes in rural areas need sustainable power solutions.
- Disaster relief & remote operations: Reliable energy for humanitarian aid, healthcare, and logistics.
- Revenue growth projection:
- 2025: Initial revenue from pilot sales.
- 2026: Trailer production starts, profit margin ~10%.
- 2027+: Scaling from 2 to 10+ trailers per month, expanding across Africa.

- Seeking €500,000 to:
- ✓ Expand SolChargE's capacity & refine implementation.
- ✓ Scale trailer production & integrate locally-produced EVs.
- ✓ Enhance battery storage & charging station capabilities.
- Why Invest?
- √ Addresses Africa's critical energy & mobility challenges.
- ✓ Proven concept, tested in real-world conditions.
- ✓ Strong technical team & partnerships with Stellenbosch University & E-Cross Africa.
- Contact us (upon request)
- Stellenbosch University





SolChargE: Mobile solar for clean energy & EVs







3) PURAMS: Affordable solar cooking

The challenge: Clean cooking remains inaccessible

- 20.7% of sub-Saharan Africa still relies on firewood, charcoal, and biomass for cooking.
- In rural areas, over 70% of the population lacks electricity access, limiting the adoption of electric cooking solutions.
- Existing electric pressure cookers (EPCs) require high power input and expensive solar systems, making them unaffordable for most households.

There is a growing need for affordable, efficient, and clean cooking solutions.

Competitive advantage

Lower power draw: PTC heating elements consume less power as they get hotter, making cooking more energy-efficient.

Cost-effective: Unlike competitors like MECS and VIA Solar EPC, Purams does not require large, expensive solar systems.

Rural-focused: Designed based on on-the-ground research in 150+ households across Kenya, Rwanda, and Mozambique.

Scalable model: Can be integrated with IoT energy meters for tracking usage and carbon credit monetization.

A more affordable and accessible solution than existing e-cookers on the market.

The solution: PURAMS standalone solar cooker

A low-power, standalone solar cooker designed to:

- ✓ Use positive temperature coefficient (PTC) heating technology instead of traditional resistive elements, reducing power consumption.
- ✓ Require smaller solar panels and batteries, lowering initial setup costs.
- ✓ Be tailored to regional diets in Kenya, Rwanda, and Mozambique for high user adoption.
- ✓ Support modular cooking profiles, making it adaptable to different household needs.

Purams reduces the cost barrier for clean cooking in rural Africa.

Milestones & roadmap

- July 2024: Initial pilot launch in Kenya.
- 2025: Scale production and introduce IoT tracking for carbon credits.
- 2026+: Expand distribution across sub-Saharan Africa through partnerships

Key market segments & growth potential

600 million+ rural Africans lack access to the grid, limiting their ability to use electric cooking solutions.

Mass adoption potential: The project has analysed market demand in Kenya, Rwanda, and Mozambique, identifying high interest among households and businesses.

Financial projections

2024: Initial piloting in Kenya.

2025: Scale production and introduce IoT tracking for carbon credit applications.

Investment & funding needs

- Seeking €70,000 to refine the product from prototype to a market-ready MVP.
- Additional \$100,000 in grant funding to develop IoT-enabled energy tracking and expand pilot programs.

Why Invest?

- Addresses a major challenge in energy access and clean cooking.
- Proven demand from field research and user testing.
- > Low-cost, scalable, and adaptable technology.
- Opportunity to leverage carbon credits for additional revenue.

Contact us (upon request)

Strathmore University





PURAMS: Affordable solar cooking |













4) SUNSAFE: Smarter solar installations

The challenge: Unsafe and unreliable solar installations

- Many retailers and electricians lack knowledge of solar system sizing and installation.
- Poorly assembled systems fail quickly, leading to safety risks and financial losses.
- Existing solar sizing tools are complex, expensive, and designed for large-scale engineers, not small retailers.
- Rural areas lack trained solar technicians, making it hard to install reliable off-grid systems.
- Sunsafe closes the knowledge gap with a simple smartphone app.

Competitive advantage

- User-friendly: Unlike competitors (PVsyst, HelioScope, PVSol), Sunsafe is designed for nonengineers.
- Affordable: Other solar design tools are expensive, while Sunsafe offers a low-cost mobile solution.
- First-mover advantage: No direct competitors in this space for rural solar installations.
- Scalable: The market extends beyond Kenya to thousands of retailers across sub-Saharan Africa.

The solution: A solar system sizing app for retailers and technicians

- A smartphone app that scans and configures solar system components, ensuring:
- ✓ Correct system sizing without technical knowledge.
- ✓ Safe and reliable installations that last longer.
- ✓ Reduced costs by optimizing solar component selection.
- ✓ Better customer satisfaction by ensuring the system performs as expected.
- Includes a labelling kit for QR codes that provide detailed electrical characteristics for easy component compatibility assessment.

📌 Milestones & roadmap

- Growth roadmap
- December 2023: Market validation and user research.
- March 2024: Initial pilot with retailers and technicians.
- June 2024: Secure funding for large-scale rollout.
- 2025: Expand across sub-Saharan Africa

© Key market segments & growth potential

🙀 Market potential

- ◆ 2,000 5,000 electrical retailers in Kenya alone.
- 6,000+ registered electricians plus 10,000 rural unregistered electricians.
- 5,000 rural markets in Kenya with similar markets across Africa.

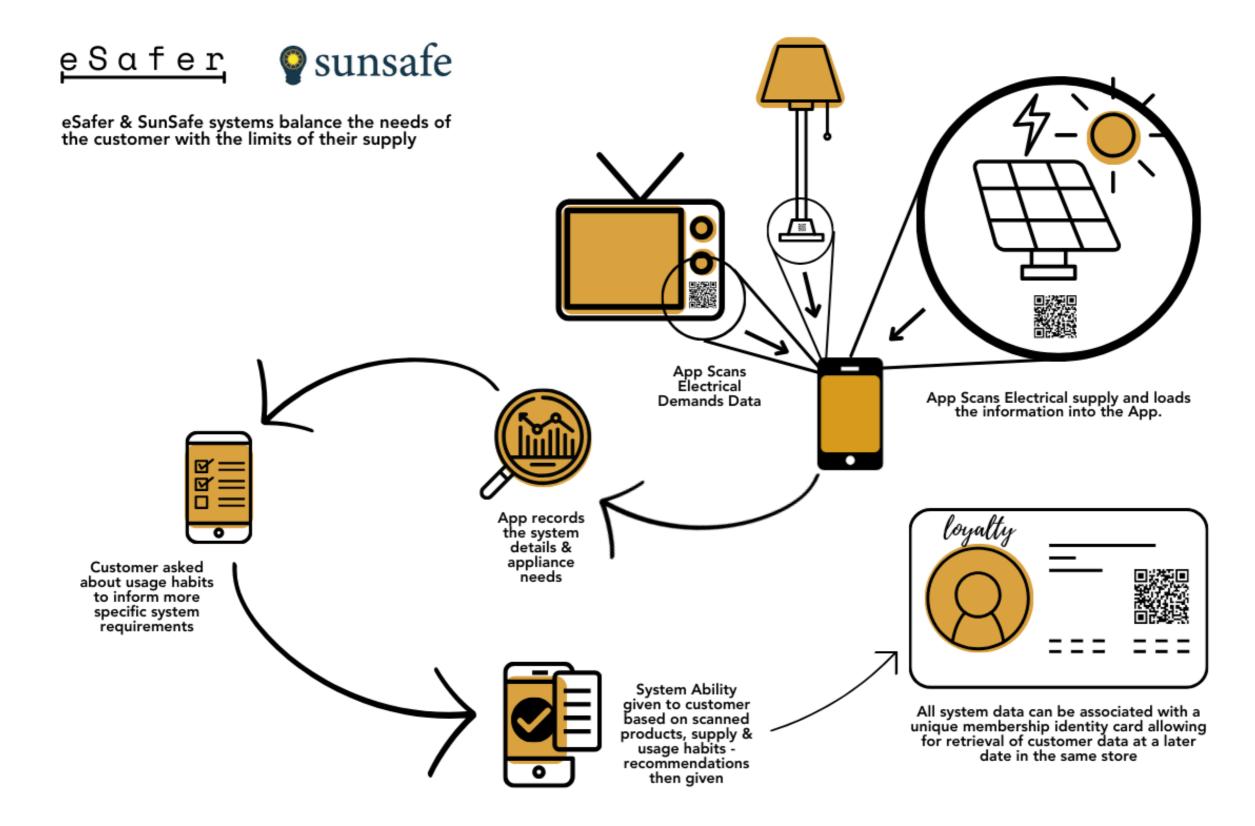
- Seeking \$200,000 \$300,000 in grant funding to refine the app and validate the business model.
- Early-stage, not yet ready for equity funding.
- Why invest?
- ✓ Solves a critical gap in Africa's solar market by making installations safer and more efficient.
- ✓ Addresses a massive and growing off-grid solar market.
- ✓ First-to-market advantage with a scalable business model.
- ✓ Patent-pending labelling technology for solar components.
- Intelligent Technologies Ltd





SUNSAFE: Smarter solar installations 🦴







5) LEDSOL: Solar-powered water purification



The challenge: Lack of access to safe drinking water

- 411 million people in Africa lack access to safe water, causing severe health risks.
- In Togo, 37% of the population does not have access to safe drinking water.
- Inland Algeria suffers from water scarcity, leading to cholera outbreaks.
- Existing solutions are expensive and often require significant infrastructure or electricity.
- ♦ Waterborne diseases kill a person every 10 seconds. A scalable, affordable solution is urgently needed.

Competitive advantage

- Much cheaper than competitors (PearlAgua, Acuva) which cost €400-1000.
- Higher energy efficiency (40–65W) using AI to optimize the disinfection process.
- Designed specifically for rural Africa, unlike existing solutions built for industrial markets.
- Can map water sources and supply patterns, enabling targeted interventions.
- LEDSOL offers the lowest-cost, most adaptable, and energy-efficient disinfection unit on the market.

The solution: Smart UV/LED solar-powered disinfection

- A compact, Al-optimized water disinfection unit that:
- ✓ Uses UV-A & UV-C LEDs for highly efficient biocide action.
- ✓ Costs less than €60, making it affordable for rural communities.
- ✓ Runs on solar power, allowing use in off-grid locations.
- ✓ Portable and adaptable, functioning at any water source or point of consumption.
- √ No chemicals or mercury, making it eco-friendly.
- Delivers safe drinking water in just 30 minutes, enough for personal hygiene and drinking needs.

Milestones & roadmap

- December 2023: 100% completion of water disinfection tube.
- May 2024: Fully functional stationary water unit.
- September 2024: Solar-powered stationary unit (80% completion).
- December 2024: Fully integrated portable unit (50% completion).
- LEDSOL will soon be ready for full-scale market deployment.

© Key market segments & growth potential

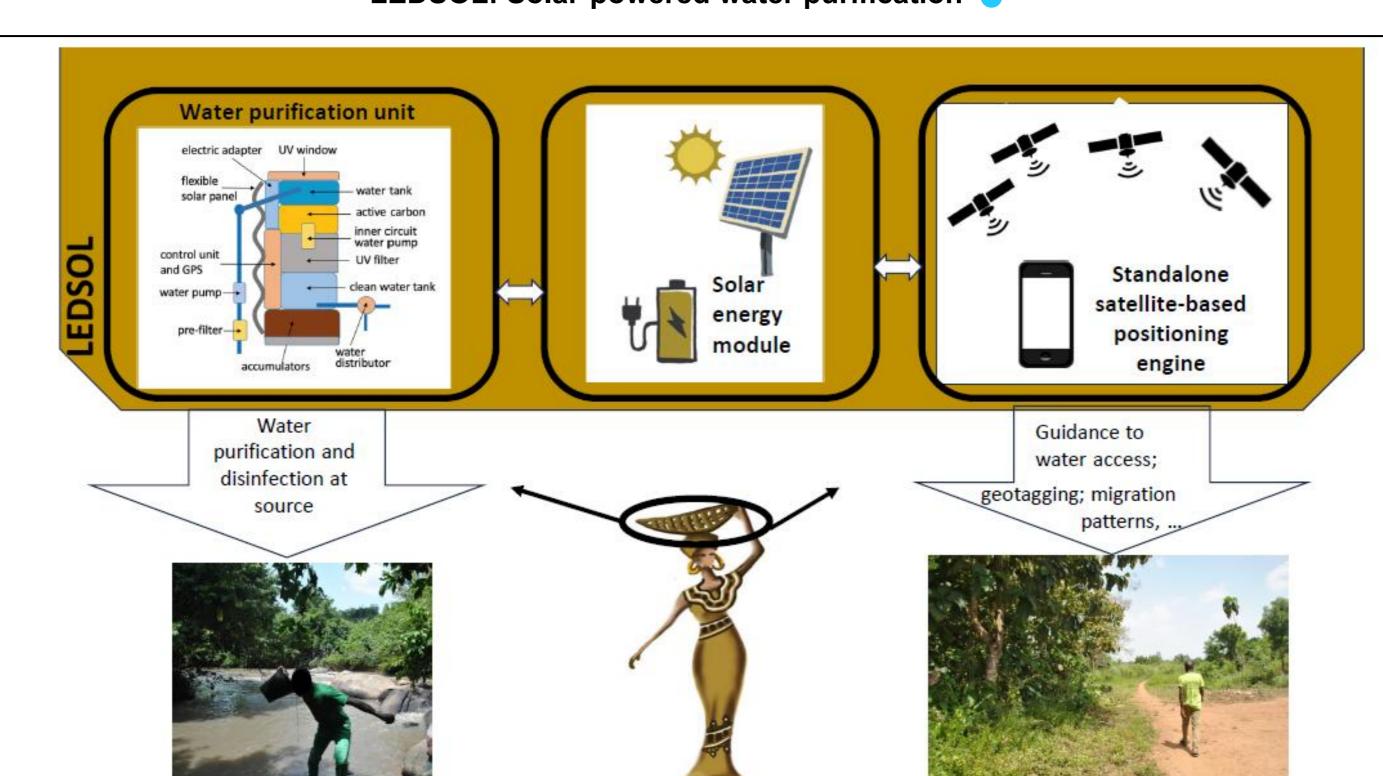
- Target markets:
- Rural communities lacking safe water.
- NGOs and humanitarian organizations.
- Governments and municipalities seeking scalable water solutions.
- Market size projections:
- Total addressable market (TAM): €400M
- Serviceable available market (SAM): €500K
- Serviceable obtainable market (SOM Togo & Algeria): €200K
- Massive potential to scale across Africa and beyond.

- Seeking €700,000 to:
- ✓ Enhance AI technology for optimized disinfection (25%).
- √ Adapt the unit for portable, hands-free use (15%).
- ✓ Fund certifications and patents (20%).
- ✓ Strengthen the business model and market strategy (20%).
- ✓ Establish partnerships with African institutions and expand marketing (20%).
- Why invest?
- ✓ Solves a critical health crisis with a cost-effective, scalable solution.
- ✓ Designed for mass adoption in Africa and other water-scarce regions.
- Contact us (upon request)
- CITST Romania





LEDSOL: Solar-powered water purification







6) LEOPARD: Mini-grids for clean energy 🜔

in The challenge: Limited access to reliable electricity

- 70% of sub-Saharan Africa lacks access to electricity, limiting economic and social development.
- Renewable energy adoption in Africa remains below 5% of global capacity.
- Applied research in clean energy lacks effective dissemination to address real-world challenges.
- Traditional energy solutions are costly and unsustainable, making energy access unaffordable for rural communities.
- ★ Leopard provides a scalable, cost-effective solution through modular mini-grids.

Competitive advantage

- Flexibility from 10+ years of experience in multiple African markets.
- Multi-stakeholder collaboration, including research labs, training centres, and private companies.
- Localized solutions and cost-efficient management, making deployment more affordable than global competitors.
- Containerized micro-grid systems, reducing installation time and cost.
- Unlike major competitors (Engie, Energicity), Leopard offers localized, cost-effective, and rapidly deployable solutions

The solution: Scalable and modular clean energy mini-grids

Leopard develops and deploys solar-powered mini-grid solutions that:

- ✓ Use geo-mapping and drone technology for optimal site selection.
- ✓ Offer plug-and-play containerized solar systems for quick deployment.
- ✓ Generate over 200 kWh per day, reducing CO₂ emissions by more than 50 tons per year.
- ✓ Include training and capacity-building programs to enhance local expertise and employability.
- ✓ Improve energy access for households, businesses, and productive use cases.
- √ 12 micro-grid units already installed in Benin, with expansion underway in Niger.

Milestones & roadmap

- 2023: Successfully built 12 mini-grid units in Benin and 2 Leopard demonstrators (1.3 MWp capacity, 1,500+ consumers).
- 2024: Expand to 21 additional sites in Niger, with negotiations underway for 12+7 new projects.
- 2025: Operate and manage 50+ mini-grids across West Africa.
- Leopard is scaling rapidly to become a leader in clean energy mini-grids.

© Key market segments & growth potential

- Target markets:
- Mini-grid installations for off-grid communities.
- Productive energy use (businesses, agriculture, small industries).
- Solar home systems for households.
- Market size projections:
- Total addressable market (TAM): €600M
- Serviceable available market (SAM): €200M
- Serviceable obtainable market (SOM): €30M
- A rapidly growing market with increasing government and private sector interest.

- Seeking €15M to:
- ✓ Scale deployment of mini-grid infrastructure across West Africa.
- ✓ Expand R&D for improved energy efficiency and system optimization.
- ✓ Increase training programs to enhance local workforce capabilities.
- ✓ Develop financial models for scaling mini-grid solutions sustainably.
- Why invest?
- ✓ Addresses a massive energy gap with a proven, scalable solution.
- ✓ Sustainable and cost-effective compared to traditional power expansion.
- ✓ High potential for public-private collaboration and long-term profitability.
- Contact us (upon request)
- University of Picardie Jules Verne





LEOPARD: Mini-grids for clean energy 🧶















7) Smart Home Energy (SHE): Cooking with crop waste &

The challenge: Deforestation and energy poverty

- Over 150 million African households rely on wood and charcoal for cooking, leading to deforestation and air pollution.
- 300 million tons of wood are consumed annually, degrading natural landscapes.
- Crop residues are burned as waste instead of being used for energy.
- There is a need for clean, affordable cooking fuel to replace traditional biomass.

 A sustainable alternative is urgently needed to reduce deforestation and support rural livelihoods.

Circular economy model: Turns crop waste into valuable fuel.

- More efficient than traditional biomass, producing fewer emissions.
- Locally manufactured cookstoves using advanced laser-cutting technology.
- Integrated carbon tracking platform for measuring environmental impact.
- Adaptable to multiple agricultural waste sources, ensuring scalability.

P Unlike charcoal, LPG, or electric cooking, SHE offers a low-cost, locally sourced, and sustainable fuel solution.

Competitive advantage

The solution: Advanced gasification of crop residues

SHE converts agricultural waste into solid biofuel pellets that:

- ✓ Provide clean and affordable heat using gasifier cookstoves.
- ✓ Reduce reliance on wood and charcoal, cutting down deforestation.
- ✓ Improve energy access for smallholder farmers and rural households.
- ✓ Support climate-smart agriculture through regenerative practices.
- √ Generate carbon credits under Article 6 ITMO programs.
- SHE is analysing over 20 crop residues to optimize pellet production for clean cooking.

Milestones & roadmap

- April 2023: Achieved ISO certification for Tier 4 efficient cookstoves.
- July 2023: Signed volume manufacturing agreement for Southern Africa.
- October 2023: Expanded research into multi-fuel gasification.
- March 2024: Large-scale engagement with mining companies for carbon offset programs.
- September 2024: 50,000 stoves for Zambia under MCFA RBF Award.
- SHE is moving fast to replace charcoal with clean fuel across Africa.

6 Key market segments & growth potential

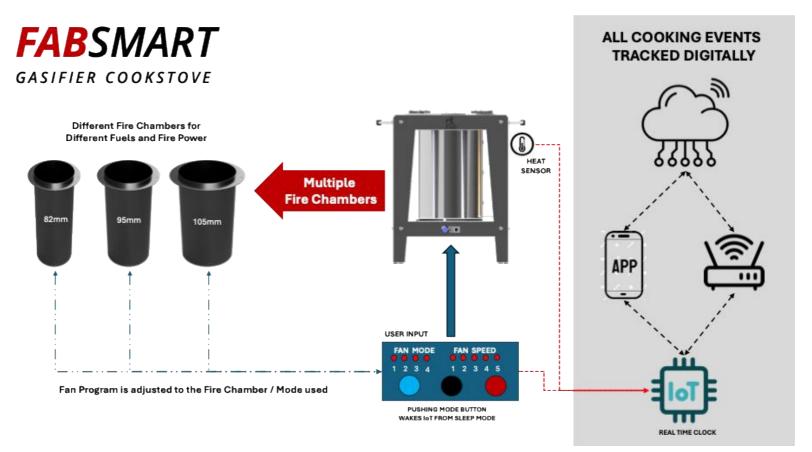
- Target markets:
- Smallholder farmers and rural households.
- NGOs and climate adaptation programs.
- Carbon offset initiatives and corporate sustainability programs.
- Market size projections:
- 350 million smallholder farmers in Africa represent a massive potential market.
- Palm oil waste and other residues can be repurposed into clean cooking fuel.
- Growing demand for carbon-neutral cooking solutions in West Africa.
- A scalable opportunity to transform Africa's cooking fuel market.
- A rapidly growing market with increasing government and private sector interest.

- Seeking €480,000 to:
- ✓ Establish a stove parts factory and pilot pellet plant in West Africa.
- √ Scale biomass pellet production using crop residues.
- ✓ Improve gasifier cookstove design for multi-fuel use.
- ✓ Expand carbon tracking and reporting platform for impact assessment.
- Why invest?
- ✓ Addresses deforestation and energy poverty with a scalable solution.
- ✓ Supports sustainable agriculture and carbon credit monetization.
- ✓ Strong research and industry partnerships in Africa and Europe.
- √ Huge market potential with strong government and NGO interest.
- Contact us (upon request)
- Ekasi Energy





Smart Home Energy (SHE): Cooking with crop waste











Geothermal Atlas for Africa (GAA): Unlocking Africa's energy potential 💧





- Africa has an estimated 15 GW of geothermal potential, yet only 1-5% is currently exploited.
- Lack of geological and economic data prevents large-scale investment in geothermal energy.
- Most African countries still rely on fossil fuels, contributing to environmental degradation.
- Energy demand is increasing, and sustainable solutions are needed for long-term development.
- GAA provides a complete geothermal mapping tool to accelerate energy investments.

Competitive advantage

- Publicly available and user-friendly, unlike proprietary geothermal databases.
- First-of-its-kind atlas integrating geological, technological, and socio-economic data.
- Built with local expertise, involving African researchers, universities, and institutions.
- Supports sustainable energy transition, offering a low-carbon alternative to fossil fuels.
- Unlike solar and wind, geothermal offers stable, 24/7 renewable energy at competitive costs.

The solution: A comprehensive geothermal atlas

GAA is an interactive digital platform that:

- ✓ Maps geothermal resources across Africa, from high-enthalpy (electricity generation) to lowenthalpy (direct heating).
- ✓ Provides key insights on temperature, flow rates, and reservoir depth for developers and policymakers.
- ✓ Evaluates economic feasibility through thermodynamic and cost analysis.
- √ Assesses environmental impact using life cycle assessment (LCA) data.
- ✓ Supports government planning, research, and private investment decisions.
- GAA is the first continent-wide geothermal mapping tool tailored for African needs.

Milestones & roadmap

- September 2024: Online launch of the Geothermal Atlas for Africa (accessible at GAA Website).
- 2025+: Expand data coverage, refine modelling techniques, and support new geothermal projects.
- Long-term goal: Enable African governments and investors to accelerate geothermal energy development.
- GAA is laying the groundwork for Africa's geothermal revolution.

© Key market segments & growth potential

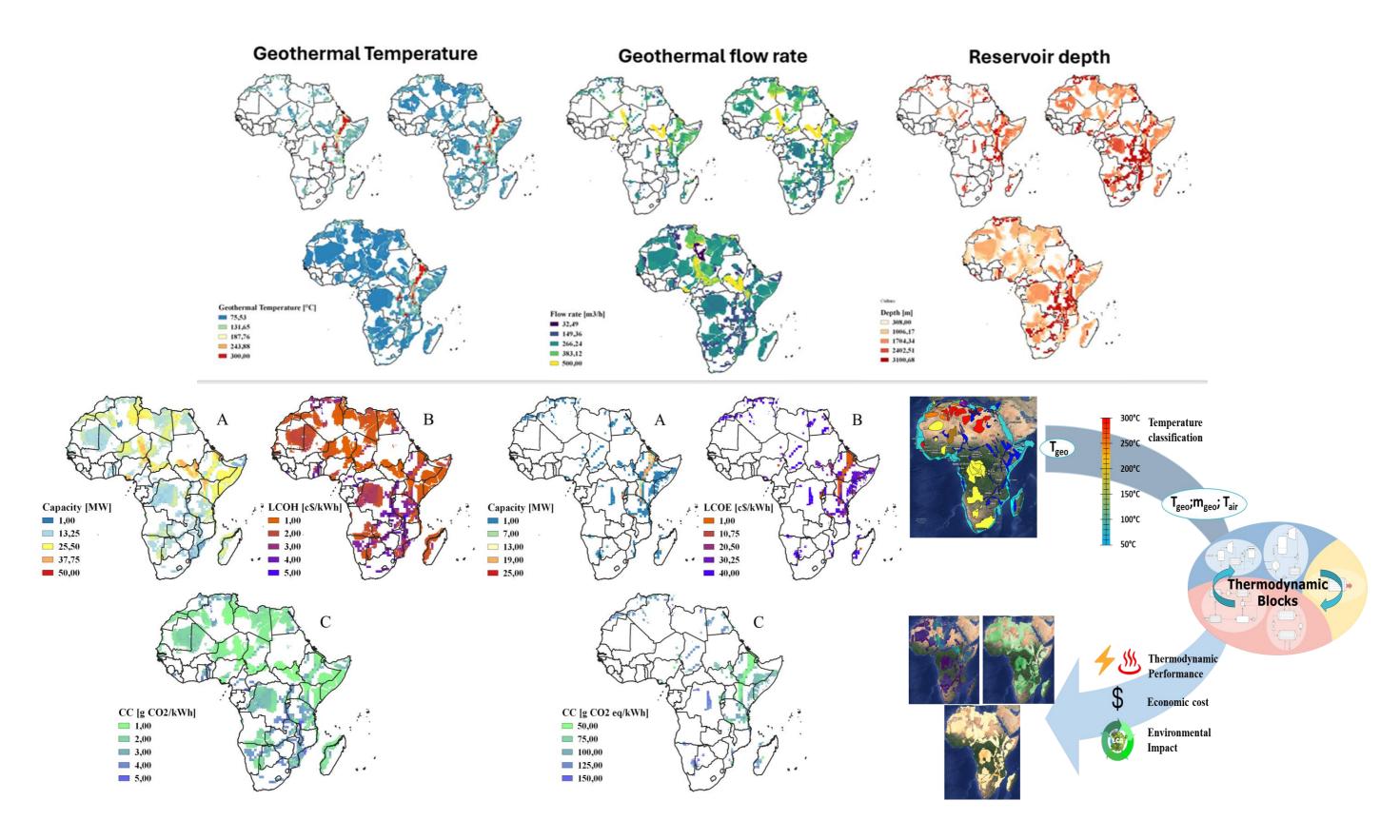
- Target users:
- Policymakers planning national energy strategies.
- Investors and entrepreneurs in the energy sector.
- Energy companies seeking sustainable power solutions.
- Geothermal potential in Africa:
- 14.4 GW of installable capacity across Ethiopia, Kenya, Tanzania, DR Congo, and Uganda.
- 358 GW of direct-use heat potential, spanning North, East, West, Central, and Southern Africa.
- Highly competitive energy costs (LCOE: 1-5 c\$/kWh), lower than fossil fuels and solar thermal.

- Seeking €1,000,000 to:
- ✓ Refine high-resolution geothermal mapping for better investment targeting.
- ✓ Investigate new technologies for geothermal energy extraction.
- ✓ Strengthen collaboration with other renewable energy projects.
- ✓ Enhance public access and usability of the GAA platform.
- Why invest?
- ✓ A unique, first-to-market tool supporting Africa's clean energy transition.
- ✓ Backed by a strong network of 20+ global research and industry partners.
- ✓ Provides a crucial knowledge base for unlocking billions in geothermal investment.
- Contact us (upon request)
- **UNIFI**





Geothermal Atlas for Africa (GAA): Unlocking Africa's energy potential







5. Broader Portfolio Assessment 2025

Following the Milan Innovation Forum and the initial project evaluations presented in Sections 2 and 3, two additional LEAP-RE projects were assessed in early 2025 to determine their investment readiness and strategic potential. This extended assessment reflects LEAP-RE's commitment to continuously identify and support high-potential innovations emerging from its broader portfolio.

The two projects included in this follow-up evaluation were:

- Solar Induce
- Energy Village Concept in Africa

The same evaluation methodology applied in the initial screening and interview phases was used again here. This includes qualitative and quantitative scoring based on criteria such as technical maturity, market relevance, innovation, scalability, investment potential, and team readiness.

The assessment yielded the following results:

Table 3 Summary of the 2025 Strategic Assessment Results for Two Additional LEAP-RE Projects

Project	Summary	Key Strengths	Key Gaps	Investment Readiness
Solar Induce	Solar-driven bioreactor for insect farming, aimed at nutrition and food security in rural Africa.	Strong scientific foundation, clear environmental and nutritional impact.	Commercialisation path not defined, lack of clear business model.	Early-stage
Energy Village Concept	Integrated, community-based energy access model combining multiple technologies.	High socio- economic relevance, strong local engagement potential.	Still conceptual, needs prototyping, team capacity gaps.	Early-stage

202While both projects demonstrate promising impact potential and are highly aligned with LEAP-RE's objectives, they remain in early stages of investment readiness. The evaluation suggests that tailored support is needed in the areas of business modelling, prototyping, and ecosystem development in order to bring these innovations closer to market viability.

These findings highlight the value of sustained monitoring across the broader LEAP-RE portfolio and reinforce the importance of adaptable support mechanisms beyond single-event showcases.





6. Final Reflections and Way Forward

6.1 Key Lessons Learned

The LEAP-RE Innovation Support Programme has provided a unique and in-depth view into the maturity and market potential of a diverse set of Africa-Europe collaborative energy projects. Several important lessons emerged:

- Innovation exists at multiple readiness levels: Projects spanned from early-stage concepts to near-commercial solutions. Supporting this diversity requires differentiated approaches.
- Post-research support is essential: Many projects need structured guidance in areas such as investment readiness, intellectual property, regulatory compliance, and business model design.
- Local relevance drives value: The strongest projects were grounded in local needs, market gaps, and community realities, especially in the African context.
- Structured investor engagement works: The Innovation Camp in Milan and followup pitching opportunities validated the importance of convening curated investorproject dialogues early.

6.2 Strategic Recommendations

Based on the experience of supporting and evaluating LEAP-RE projects across surveys, interviews, forums, and investor engagement, the following strategic priorities are recommended:

- Ensure continuity of support beyond project funding: Many innovations fail to reach market due to the post-project gap. Mechanisms such as startup studios, accelerators, or follow-on CSA actions can fill this void.
- Consolidate assessment methodologies: The tools and frameworks developed in this process (e.g. maturity screening, interview grids, scoring models) should be mainstreamed into future funding schemes or CSA work packages.
- Focus on investor alignment: Investor requirements should be embedded earlier in project lifecycles, both to strengthen outcomes and to improve visibility with financing actors.
- Build pan-African-European venture pipelines: Cross-regional innovation requires targeted bridging mechanisms, not only funding but matchmaking, regulatory guidance, and access to procurement pathways.

6.3 Proposed Next Steps: A Startup Studio

To carry this momentum forward, the consortium envisages the creation of a dedicated Startup Studio as an exploitation mechanism to advance high-potential energy innovations emerging from the current portfolio and future initiatives. While the specific form and funding pathway are yet to be defined, such a mechanism would represent a natural strategic evolution for sustaining impact beyond the project's lifetime.



D4.9 LEAP-RE portfolio Exploitation Plan



If successfully established, the Startup Studio would:

- Identify promising project outcomes across Africa and Europe with market deployment potential.
- Support venture creation and acceleration, including legal entity formation, IP, business development, and investor readiness.
- Connect projects with funding pathways ranging from philanthropic seed funding to VC and blended finance.
- Anchor innovation ecosystem partnerships between African innovation hubs, European accelerators, and international investors.

This future mechanism aims to bridge the post-research gap with practical venture support, and to become a replicable model for other challenge-driven portfolios.





Conclusion

The LEAP-RE Exploitation Plan captures the culmination of a multi-phase innovation support journey designed to assess, select, and elevate the most promising projects within the LEAP-RE portfolio. Through a rigorous and structured approach combining surveys, interviews, maturity assessments, and investor engagement activities, a diverse range of African and European energy innovations were screened, supported, and showcased.

The results highlight both the maturity and the ambition embedded in these collaborative projects. From advanced solar cooking systems to integrated energy villages and geothermal assessment tools, the selected innovations address real-world challenges while demonstrating strong technical foundations and growing investor appeal. The Milan Innovation Camp served as a critical turning point, where eight projects pitched directly to stakeholders and laid the groundwork for post-programme collaborations and capital raising.

Yet, beyond this initial momentum, a clear need emerged: many projects require sustained, hands-on support to fully bridge the gap between research outcomes and commercial deployment. The broader 2025 assessment reinforced this conclusion, revealing untapped potential even beyond the initial cohort.





Appendices

Appendix 1 – LEAP-RE | Research Projects Go to Market Assessment Survey

Dear Research Projects Team Leaders, one of the objectives of LEAP-RE WP6 is to enhance the uptake and replication of innovative solutions through a range of acceleration services. This includes conducting strategic assessments to gauge growth potential across various sectors, facilitating connections between research projects and potential innovators, and integrating with existing acceleration frameworks. Additionally, we aim to develop and test tailored services related to exploitation, scaling pathways, IP advisory, business models, and innovator pitching for project owners within the LEAP-RE community. We will also focus on designing financing strategies for research, development, and implementation phases while collaborating with multiplier networks to facilitate access to local entrepreneurs. Through the operation of an Innovation Scaling Group, we will connect projects and innovators with relevant actors and networks to support their upscaling and replication efforts. Please take 5 to 10 minutes to complete this survey, which will enable us to offer you tailored support. Interviews will be arranged based on your availability based on the analysis of the survey results. All data collected through the survey will be treated with the utmost confidentiality. Under no circumstances will the information you provide in this survey be shared with any third party without your explicit consent.

Research Project Information

This section aims to collect essential details about your research project to facilitate its Technology Readiness Level (TRL) and Market assessment.

1. Research Project Title

Please enter the title of your research project

Click or tap here to enter text.

2. Research Project Team Leader

Kindly provide the contact details of the research project leader

Click or tap here to enter text.

3. Briefly describe your innovation/project, including its objective, functionality, and potential applications

Please provide a concise overview of your research project, highlighting its objectives, functionality, and potential applications. This will help us better understand the context of your project during the TRL and Market assessment process

Click or tap here to enter text.

Market Analysis

This section aims to gather information about the market landscape relevant to your research project. Understanding the market context is crucial for assessing the potential impact and applicability of your project's outcomes.

4. Who is the target audience for your technology product?

Who will use your technology product?

Click or tap here to enter text.





5. What specific needs or pain points does your product address for this audience?

What particular problems or concerns does your product solve for this group of people? Click or tap here to enter text.

6. Who are your main competitors in the market?

Who are the main companies offering similar products and competing with you in the market?

Click or tap here to enter text.

7. What unique value proposition does your technology product offer compared to competitors?

What makes your technology product different and valuable compared to what others offer?

Click or tap here to enter text.

8. Have you conducted surveys or interviews to understand potential users of your technology product needs and preferences?

Did you ask end users questions or talk to them to find out what they want and like? Click or tap here to enter text.

Technology Readiness

Assessing the technology readiness of your research outcome is essential for successful implementation and deployment. This section evaluates the current state of technological development and its readiness for real-world application. By understanding the technology readiness level (TRL) of your project, we can identify potential challenges and opportunities for advancement, quiding strategic decision-making and resource allocation.

9. Have you identified and defined the basic principles of your technology concept?

Have recognized and clarified the fundamental principles underlying your technology concept

Click or tap here to enter text.

10. Have you conducted feasibility studies or proof-of-concept experiments to validate your technology concept?

Have you done tests to check if your technology idea could work in real world? Click or tap here to enter text.

11. Have you developed and tested prototypes or models of your technology in a laboratory setting?

Have you made and tried out sample versions of your technology in a lab? Click or tap here to enter text.

12.Is your technology ready for commercial application?
□ Yes
□ No

Need Identification



D4.9 LEAP-RE portfolio Exploitation Plan



The need identification section aims to understand your needs and identify challenges involved in the process of successfully launching your technology product into the market. ☐ Intellectual Property Protection and Support ☐ Market Research and Validation ☐ Funding and Investment ☐ Business Development and Strategy ☐ Product Development and Prototyping ☐ Regulatory Compliance and Certification ☐ Partnerships and Collaborations ☐ Legal and Contractual Support ☐ Marketing and Branding ☐ Talent Acquisition and Team Building ☐ Support Services and Infrastructure □ Networking and Mentorship □ Other : Click or tap here to enter text. **Manufacturing Readiness** The Manufacturing Readiness section outlines the state of readiness of the production process for your technology product 13. Have you assessed the readiness of the supply chain to support manufacturing at scale of your technology product? ☐ Yes □ No **Comments** This section is an opportunity to share additional feedback, thoughts, or suggestions that may not have been covered in previous sections.



Click or tap here to enter text.