

ENERGICA

**ENERGY ACCESS AND GREEN
TRANSITION COLLABORATIVELY
DEMONSTRATED IN URBAN AND
RURAL AREAS IN AFRICA**

DEDICATED WEBSITE



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101037428.

This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

Deliverable Report

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1. WEBSITE STRUCTURE

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	ENERGICA project	Madagascar	Our network				
	Activities	Sierra Leone	Collaborations				
	Green Deal	Kenya					

2. INTRODUCTION

This report, i.e. D10.2 Dedicated website, presents the ENERGICA website developed by EQY for the communication, the dissemination and the exploitation of the project developments and results. This report details, for each section of the website, the design to be used and the content that will be integrated.

The deliverable presents the website structure and content dated April 2022. The website will evolve during the whole project and be completed regularly.

3. CONTENT

HOME

The Homepage includes several (4) panels.


1st panel



2nd panel : an overview of the project

Overview


Solutions for **energy access and sustainable energy development** in Africa and in Europe




28 partners from 15 countries

12M€
Budget

Learn more about the solutions developed in **ENERGICA**



About the Project



Results



Learn more about the solutions developed in **ENERGICA**

Start - 1 November 2021 End - 31 October 2025

3%

3rd panel:

FOLLOW US ON SOCIAL MEDIA!

NEWSLETTER

GET IN TOUCH WITH US

Name/Email Address

Organisation

Message

1 + 10 =

Submit

4th panel

The ENERGICA project received EU funding from the Green Deal programme



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101037428 (ENERGICA).

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ABOUT

What is the ENERGICA project?

The project

With its 11 European and 17 African partners, ENERGICA focuses on energy access and sustainable energy development on both continents. In particular, three demonstration sites have been chosen to develop innovative technologies adapted to local needs: Diana region in Madagascar, Freetown in Sierra Leone, Nairobi and Kisumu in Kenya.

Rural Madagascar (Diana region) will see innovative nano-grids for renewable production of water and food. Peri-urban Sierra Leone (Freetown) will host a new biogas and water purification system for energy, water and food fertiliser production. And finally, in urban Kenya (Nairobi and Kisumu) will be developed solar powered electric mobility for mototaxis (boda-bodas).

An important aspect of the ENERGICA methodology is to build from the local needs in energy and resources. To do so, partners use co-creation approaches to link all the actors of the local social and technoeconomic contexts. Multiple benefits are expected when using this approach: the offer is adapted to the local context and the potential for market uptake and replication is very high. This will help ENERGICA reach its strong positive impacts on society, economy and the environment at local scale. Indeed, the sustainability of the solutions are the main concern: they need to be used by the local population, bringing added-value and having a strong business plan to be interesting locally in the long-term. This includes finding local markets, local production and manufacturing, local business and workforce creation. When using the ENERGICA methodology, it is expected that the activities will impact positively 1500 local stakeholders across Africa, and counting!

Visit the rest of the website to learn more!

Objectives

Objectives

The main objective of the project is to demonstrate the efficient implementation of renewable energy technologies to match local contexts' needs. To do so, the activities will work on connecting the right actors, understanding the local needs and complete context, and co-constructing adapted solutions. In the 3 demonstration sites, ENERGICA will establish with the local communities Energy Transition Boards (ETB) to animate Integrated Community Energy Systems (ICESs) at community-scale. Using this methodology is beneficial for positive social, environmental, technical, and economic impacts!

Activities

The Work Plan of ENERGICA is organised in 11 Work Packages, including 3 technical work packages detailing the development of the demonstration sites and two thematic work packages on social and environmental activities.

WP1: Specification and on-site studies

The first WP of ENERGICA allows for a better understanding of the technical context in which the solutions will be developed. Regulatory and technical constraints will be studied to foresee potential barriers to the solutions' development and data management and cybersecurity specifications will be listed to ensure that the technologies are compliant with the technological regulations.

WP2: co-creation of the demonstrators

WP2 and WP3 are at the centre of ensuring the sustainability of the solution developed in each demonstrator. In this WP, the implication of local actors in co-creation processes will lead to an enhanced acceptance and uptake of the solutions.

WP3: Sustainable social and environmental ecosystems

Alongside WP2, this work package ensures the sustainability of the technologies and methodologies developed within ENERGICA by developing the relevant social and environmental programs. Indeed, as a large barrier to technology adoption in Africa is the capacity to sell, operate, and maintain the technology systems at a local level, it is therefore prescient that suitable training programs are in place on the ground to account for cultural diversity and local technical abilities and infrastructures.

WP4: Productive nano-grids and WEF nexus in rural contexts (Madagascar)

The Malagasy technical WP focuses on the development of nano-grids providing effective access to electricity but also including productive uses in regard to the Water-Energy-Food nexus. Agri-specific, water-specific and cooling-specific solutions are targeted and developed before an effective integration and demonstration in their local contexts of the 50 chosen Madagascar villages.

WP5: Frugal and low-tech WEF nexus technologies (Sierra Leone)

The Western Africa technical WP focuses on the development of low-tech and frugal technologies in both the biogas and water purification sectors. Two types of adapted solutions (either integrated biogas and water or upscaled biogas) are tested before an effective integration and demonstration in peri-urban and urban Freetown.

WP6: Urban grid flexibility through electric mobility (Kenya)

The last technical WP focuses on the development of battery systems and management with particular application to electric mobility in the urban contexts of Kenya (Nairobi and Kisumu). Energy-efficiency

solutions for the optimisation of decarbonised mobility use-cases are targeted and developed before an effective integration in their local context followed by demonstration and replication phases.

WP7: Techno-economic and feasibility studies

To ensure that the project effectively provides positive impacts on its surrounding environment, assessments regarding the demonstrators' current and future economic feasibility will be provided and will contribute to setting a basis for scaling-up and replicability strategies.

WP8: Social and environmental assessment

To ensure that the project effectively provides positive impacts on its surrounding environment, assessments regarding the demonstrators' current and future economic feasibility will be provided and will contribute to setting a basis for scaling-up and replicability strategies.

WP9: Replicability, scaling-up and networking

This work package is critical to the effective implementation of the ENERGICA solutions. To ensure that the technologies, methodologies and collaborations are sustainable, different actions will be developed and the overall objective of a high replicability rate and scaling-up capacities will be ensured through high-scale and open-access deliverables for all levels of stakeholders.

WP10: Communication, Dissemination, Exploitation

The WP10 gathers all the communication, dissemination and exploitation activities of the project. Such activities are essential for the success of ENERGICA, which aims at an active participation of many different actors in the co-creation and replicability of its demonstrators. For this purpose, the ENERGICA strategy includes the development of a public website, as well as the implementation of promotion campaigns, dissemination activities such as inter-project workshops, participation in national and international events, etc., and exploitation activities targeting the necessary actors to ensure the uptake of the solution and their replicability at different scales and in different contexts.

WP11: Management

The project coordinator will be responsible for the overall management of ENERGICA. WP11 will ensure efficient administration in accordance with EC guidelines and requirements, as well as communication inside the consortium and timely report to the EC. Other tasks include coordination of the project activities, efficient Grant management and resources optimisation as well as Risk Management.

WP12: Ethics requirements

The objective is to ensure compliance with the 'ethics requirements' set out in this work package.

To learn more, browse the deliverables associated to the Work Packages on the Results page

Green Deal

In addition to the 100bn€ dedicated to the funding of R&I project under Horizon 2020, the European Commission launched in 2020 a 1bn€ call for research and innovation projects responding to the climate crisis and aiming at protecting Europe's unique ecosystems and biodiversity: the Green Deal call.

This Green Deal Call differs in important aspects from previous [Horizon 2020 calls](#). Given the urgency of the challenges it addresses, it aims for clear, discernible results in the short to medium-term, but with a perspective of long-term change. There are fewer, but more targeted, larger and visible actions, with a focus on rapid scalability, dissemination and uptake.

The projects funded under this call are expected to deliver results with tangible benefits in ten areas:



And two horizontal areas - strengthening knowledge and empowering citizens, which offer a longer-term perspective in achieving the transformations set out in the European Green Deal.

[LEARN MORE ON THE EUROPEAN GREEN DEAL CALL HERE.](#)

The €1 billion investment will continue building Europe's knowledge systems and infrastructures. The call includes opportunities for international cooperation in addressing the needs of less-developed nations, particularly in Africa, in the context of the [Paris Agreement](#) as well as the [Sustainable Development Goals](#) (SDGs).

The ENERGICA project was funded under the call [“Accelerating the green transition and energy access Partnership with Africa”](#), and more specifically under the topic LC-SC3-JA-5-2020, “Long Term EU-Africa Partnership for Research and Innovation actions in the area of renewable energy”.

For more information on the other projects funded under this call, check Our Network page

DEMONSTRATION SITES

Madagascar demonstrator

Madagascar demonstrator – Rural context

What are the identified needs?

Madagascar has one of the lowest electrification rates in the Southern Africa region, with important disparities between urban and rural areas. The local energy supply remains inadequate, especially in rural regions where population density is too low and the electricity grid too expensive to reach everyone.

In most rural areas of Madagascar, over 60% of the population works in the field and almost 20% lives from fishing and sea products. That is why, agriculture, cooling and water pumping solutions are the most needed in this region.

What solutions will ENERGICA bring?

The solutions developed in ENERGICA tackle both infrastructure cost and energy access rate through tailored Water-Energy-Food nexus systems. In the Ambanja, the Ambilobe and the Diego II Districts, the solar nanogrids from Nanoé are already powering domestic and other non-productive users in more than 150 villages.

Nano-grids providing access to electricity to households thanks to solar energy will be developed. The nano-grids will then power different solutions addressing the most prominent needs of the regions

- Agri-specific solutions:
 - o Agri-machineries: development of small sizes electric rice huller and adaptation of existing rice husking machines
- Water-specific solutions:
 - o Water pumping, storage and treatment devices
- Cooling-specific solutions
 - o Cooling devices for food and water refrigeration

These solutions will be integrated and demonstrated in 50 chosen villages, with a diversity of contexts.

Water-Food Energy Nexus – Malagasy demonstrator concept



Sierra Leone demonstrator

What are the identified needs?

In Sub-Saharan Africa, food security is a key sustainability challenge. ENERGICA will look at access to energy and fertiliser for efficient local food production and long-term sustainability of agricultural production (fertilizers being used for an healthy soil organic content).

The Water-Energy-Food (WEF) nexus-centred demonstrators of Freetown are thus aligned with the local policy to tackle the risks and vulnerability of poor waste management systems. Two solutions will be implemented successively in peri-urban Freetown.

What solutions will ENERGICA bring?

ENERGICA will focus on the development of low-tech and frugal technologies in both the biogas and water purification sectors.

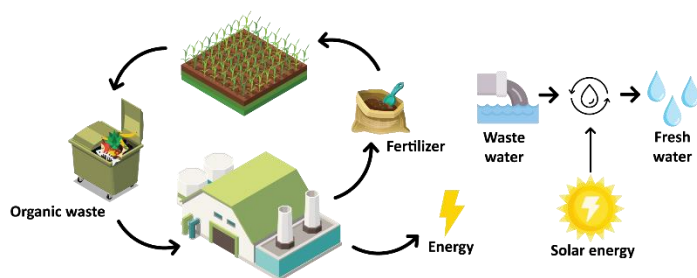
The biogas digester developed in ENERGICA will allow to use organic waste to produce energy and fertilizer.

The Waste Transformers and The Freetown Waste Transformers have already developed a prototype anaerobic digestion system for organic waste transformation in a Freetown hospital. The first ENERGICA demonstrator will be set up in Waterloo, a peri-urban district of Freetown, and will improved the existing biogas digester by

- Optimising and simplify it
- Establishing a local manufacturing of the plant for scaling up of the system
- Coupling it with a water purification system

This demonstrator will then be upscaled tested in urban context, with a bigger capacity.

Sierra Leone demonstrator – Biodigester and water purification system



Kenya demonstrator

What are the identified needs?

Despite strong low-carbon policies, Kenya still faces challenges with energy access, transport, pollution and congestion as a result of inefficient transport systems and old vehicle fleets. But with about 85% of energy from renewables and an excess production of about 800MkW, there is a strong potential to developed electric mobility solutions to overcome the challenges linked with transports.

There is a strong user demand in Nairobi for the deployment of electric motorcycles, but there is also a need for additional networks of chargers, to enable agile driving patterns in the city.

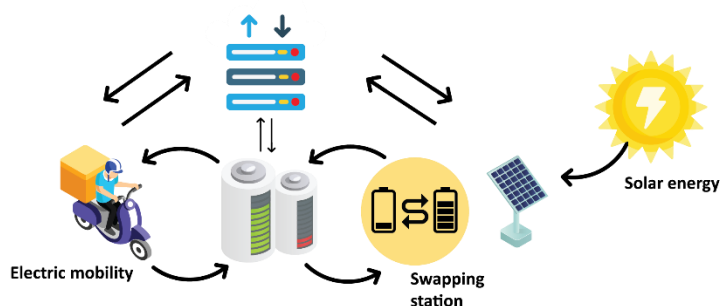
What solutions will ENERGICA brings?

ENERGICA will develop battery systems and management for electric mobility.

A first demonstrator will be implemented in urban Nairobi, where 15 solar swapping stations and 150 electric motorcycles will be deployed. Then, 12 additional solar swapping stations will be deployed to the urban city of Kisumu.

A cloud architecture and a supervision system will be developed to manage the entire network of swapping stations.

Kenya demonstrator – Electric mobility



OUR NETWORK

Partners

Who are ENERIGICA partners?

28 partners
15 countries
2 continents

Our Network

Collaborations

Technische Universität Berlin (TUB) – Germany

The Department of Energy Systems deals with interdisciplinary topics related to renewable energies and its environmental, economic, political and social aspects. In Germany as well as internationally, we are among the distinguished academic institutions with a focus on energy and its interrelatedness with a variety of neighboring research areas.

Apart from research, the department contributes to training of future energy experts with its extensive range of basic as well as advanced level lectures, presentations, excursions and the supervision of student theses.

Website: <https://www.tu.berlin/en/>

United Nations Environment Programme (UNEP) – Kenya

The United Nations Environment Programme (UNEP) is the lead global organization to coordinate environmental matters within the United Nations system. It produces environmental assessments through science, technology and innovation as key enablers to environmental challenges. UNEP provides timely, scientifically credible, policy-relevant environmental data and information for decision-making and action planning for sustainable development and economic growth. It helps countries reduce pollution from land-based activities, increase resilience to climate change and reflect linkages between poverty and the environment in their development planning. In the context of supporting member states, UNEP responds and spearheads UN-wide monitoring and reporting on the environmental dimension of the various global and continental development agendas: Agenda 2030 SDG's, Paris agreement 2015 on climate action and AU Agenda 2063.

Website: <https://www.unep.org/>

Universite Abdou Moumouni of Niamey (UAM) – Niger

Universite Abdou Moumouni (UAM) is a non-profit public higher education institution that offers officially recognized higher education degrees such as bachelor, master and doctorate degrees in several areas of study. UAM employs more than 400 lecturers and professors, 419 Administrative and Technical Personnel and involves more than 28,000 students. This makes it the largest and most acknowledged University in Niger.

Website: <https://www.uam.edu.ne/>

Norges teknisk-naturvitenskapelige universitet (NTNU) - Norway

The Norwegian University of Science and Technology (NTNU) is the largest university in Norway, with 14 faculties and 70 departments and divisions. Currently, NTNU has more than 39 000 students and 4 600 person-years in academic or scientific positions (41% women). The university uses its main scientific profile in technology and the natural sciences and its cross-disciplinary competency to meet global challenges, summarized by its vision: "Knowledge for a better world". Three out of four Strategic Research Areas at NTNU – Sustainability, Energy and Health – contribute directly to sustainable urbanization, delivering creative innovations with far-reaching social and economic impact in close collaboration with cities, industry, authorities and civil society.

Website: <https://www.ntnu.edu/>

TRIALOG – France

Trialog is a consulting and engineering company which provides expertise in innovation for cyber-physical and industrial information systems. Our work mainly focuses on three domains: Energy (Smart metering, Smart Grids), Transports (e-Mobility, Intelligent Transportation System), and Social & Health (Active Ageing Living)

Website: <https://www.trialog.com/en/home/>

FINERGREEN (FNG) – Côte d'Ivoire

Founded in 2013, Finergreen is a strategy and financial advisory company with a goal to promote energy transition and sustainable investments. Finergreen has international presence across all continents through its offices in Paris, Abidjan, Nairobi, Singapore, Mexico City, Madridj Budapest and Dubai. Since its establishment, Finergreen has raised more than EUR 2.1 billion in the solar, biomass, hydropower, wind and other energy efficiency sectors. Thanks to a team of more than 50 employees, Finergreen has developed a strong and competent expertise in the renewable energy sector as well as an international network of investors and bankers. We leverage on these assets to provide exemplary services to our clients including projects developers who wish to develop or finance their renewable energy portfolios.

Website: <https://finergreen.com/>

Hudara (HUD) - Germany

Hudara is a Berlin-based non-governmental, non-profit organization, registered as a charity with the German Tax Authority. We at Hudara aspire to a world in which people experience good mental health and psychosocial well-being, live in thriving and peaceful communities which are in balance with the natural environment. We operate independently and impartially where people's lives are impacted by poverty, conflict and climate change. We follow a community-based participatory approach. In this we view community members as key actors in developing meaningful approaches to cope with difficulties. Taking a community base perspective means to take actions depending on the community voices, to implement through community structures, to focus on services on the individual, group and policy-making level while building an effective system in which all actions feed into each other.

Website: <https://hudara.org/>

Energy Generation - France

Energy Generation is a pan-African organization which supports young Africans in addressing the generation's most challenging issues through entrepreneurship and technology in the energy sector. Based on an integrated model (training, incubation & acceleration, investment), Energy Generation aims to support and promote innovative "made in Africa" hardware solutions that are tailor-made for the continent. Our programs have been specially designed based on MIT's Design Thinking Approach centered on entrepreneurship in the energy sector. We offer a pre-incubation program that gives students the opportunity to create a minimum viable product (MVP) and the technical support needed to develop a prototype for production. Qualified projects could also receive seed-funding to startup. Our intensive courses and modules are developed in partnership with the Ascencia Business School, a member of College de Paris giving you an internationally recognized diploma and the possibility to further your studies at the College de Paris in France and/or join the corporate world in strategic positions as a business leader or project manager in the renewable energy sector.

Website: <https://www.energy-generation.org/>

Ecowas Centre For Renewable Energy And Energy Efficiency (ECREEE) – Cabo Verde

ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) was established by the ECOWAS Commission in 2008 during the 61st Session of ECOWAS Council of Ministers. ECREEE is a specialized ECOWAS agency based in Praia, Cabo Verde, with a public mandate to promote renewable energy and energy efficiency markets. It acts as an independent body but within the legal, administrative and financial framework of ECOWAS rules and regulations. The overall mandate of ECREEE is to contribute to the sustainable economic, social and environmental development of West Africa by improving access to modern, reliable and affordable energy services, energy security and reduction of energy related externalities (GHG, local pollution). Since its inception, ECREEE has been working diligently to create favourable conditions for regional RE & EE markets by supporting activities directed to mitigate existing technology, financial, economic, business, legal, policy, institutional, knowledge and capacity related barriers.

Website: <http://www.ecreee.org/>

FUNDACION TEKNIKER - Spain

Tekniker is a private non-profit research organization founded in 1981 with 284 researchers and a turnover of 26.2M€ in 2018. Besides, Tekniker is a part of the BASQUE RESEARCH & TECHNOLOGY ALLIANCE (BRTA, <https://www.brta.eu/>) that comprises the technological centres of the Basque Country with the objective of bringing resources together in order to reach greater levels of technological-scientific excellence within the Basque System of Innovation. The specific mission of Tekniker is to help the industrial sector to increase its innovative capacity by means of generating and applying technology and knowledge in order to be more competitive. Its expertise covers a wide range of technologies allowing them to provide services to a range of sectors from automotive over aeronautics up to assistive technologies and to develop a good variety of products.

Website: <https://www.tekniker.es/en>

Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas-Plataforma Solar de Almería (CIEMAT) – Spain

CIEMAT is a Spanish Public Research Institution owned by the Ministry of Science and Innovation. Since its founding in 1951, it has developed and led R+D projects in the fields of Energy, Environment and Technology, placing the institution at the forefront of science and technology. Its activities include the promotion, introduction and improvement of renewable energies on the energy market, as well as promotion of technology transfer, training and scientific outreach. With >1300 employees, 57% graduated, CIEMAT has a wide presence at international scientific and technical forums. In addition to the head offices and laboratories located in Madrid, CIEMAT owns several research centers in Spain.

Plataforma Solar de Almería (PSA) (www.psa.es) is one of these outlying centers located in Southern Spain. It is formally considered as European Large Scientific Installation and it is also the largest R+D center in the World devoted to solar thermal concentrating systems and photochemistry (research, development, and testing). With a large and long-lasting international collaboration with many other R+D centers and industries, their main objectives are the contribution to the establishment of a sustainable and clean world energy supply, as well as the technical and scientific promotion of solar thermal technologies and solar chemical processes.

Website: www.ciemat.es

Research Institutes of Sweden (RISE) - Sweden

RISE is the Swedish Research Institute and innovation partner. In international collaboration with industry, academia and the public sector, we ensure the competitiveness of the business community and contribute to a sustainable society. Our 2,800 employees support and promote all manner of innovative processes. RISE is an independent, state-owned research institute that offers unique expertise and about 100 testbeds and demonstration facilities, instrumental in future-proofing technologies, products and services.

In 2016, the former institutes of Innventia, SP Technical Research Institute of Sweden and Swedish ICT merged to form RISE. During 2018, RISE expanded to include the former institutes Swerea IVF, Swerea SICOMP, Swerea SWECAST and part of Swerea KIMAB. The merged RISE drives advanced research in a broad spectrum of areas that are divided into five divisions. We have a long history of acknowledged high-quality research and conducting assignments in each of these divisions. RISE is a non-profit organisation. The headquarters of RISE are located in Gothenburg, but we have employees all over Sweden.

Website: <https://www.ri.se/en>

The Waste Transformers (TWT) – The Netherlands

The Waste Transformers are on a mission to revolutionise how we deal with organic waste in a way that is green, clean, entrepreneurial and smart. We allow everyone to create their own energy (in the form of electricity and residual heat) by transforming organic waste on-site, in installations housed in shipping containers, into green energy. No transportation. No CO2. We also recover the water and nutrients in the waste, and give all of these back to the same site. It's a game-changer that allows markets, hospitals, airports and local communities, to power their future with good energy whilst realising small-scale circular economies around something that would otherwise be wasted.

Website: <https://www.thewastetransformers.com/>

The Freetown Waste Transformers (FWT) – Sierra Leone

The Freetown Waste Transformers (FWT) is an integrated Waste Management Company with over 10 years of experience in the Waste Management Sector in Freetown. The Company's vision is to be the leading waste management company in Sierra Leone by delivering reliable and efficient waste management solutions that will contribute to a sustainable environment. With a staff strength of 30 employees (core and contracted) and an experienced Team of sector experts, FWT is strategically placed to work alongside the public sector to deliver sustainable waste management solutions for the city of Freetown and Nationally.

Website: <https://www.freetownwastetransformers.com/>

ECOSUN Innovations – France

ECOSUN INNOVATIONS is part of the group ECOSUN EXPERT specialized in the production of electricity. Launched in 2016, the company has a strong experience in the field of renewable energy. Ecosun is specialized in developing several ranges of innovative patented solar mobile power plant able of covering needs in mobility, consumption and electrification of isolated sites. The aim of those solutions is also to reduce carbon footprint.

Website: <https://www.ecosuninnovations.com/fr>

Arenys Inox - Spain

The Arenys Inox company has more than 20 years of experience in the metallurgy sector developing industrial design of products and their manufacturing. Arenys Inox has two industrial buildings equipped with the most advanced machinery to meet all the needs of its customers. The main clients are from the pharmaceutical, food and lighting industries. Since the beginning of the company, it has worked closely with the Ecosystem company to develop the majority of solar reactors for water or air treatment worldwide. Arenys Inox has indirectly participated in 10 European projects related to photolytic water treatment such as WaterSpout, Solwater and Aquacat. Currently Arenys Inox has absorbed Ecosystem to continue with its work.

Website: <http://www.arenysinox.cat/>

SADC Centre For Renewable Energy and Energy Efficiency (SACREEE) – Namibia

The Southern African Development Community (SADC) Centre for Renewable Energy and Energy Efficiency (SACREEE) was established as a subsidiary organization of the SADC Secretariat, by the SADC Ministers responsible for the energy sector in 2015. SACREEE is hosted by the Government of Namibia through its Ministry of Mines and Energy in Windhoek, Namibia. The Centre was established with technical support of the United Nations Industrial Development Organization (UNIDO) and financial assistance of the Austrian Development Agency (ADA). SACREEE's mandate is to contribute to the region's (1) increased access to clean and affordable energy, and (2) increased security of energy supply; through the promotion of market-based adoption of renewable energy and energy efficient technologies and energy services. SACREEE executes its mandate by supporting the region's sustainable development objectives through resource mobilisation, policy, quality assurance, capacity building and knowledge management, communication, promoting investments in renewable energy, energy efficiency projects and programs. In fulfilment of its mandate and in line with this assignment, SACREEE has already started implementing numerous local capacity building projects, supporting the governments of the SADC region with the development and implementation of standards and policies to facilitate the uptake of energy efficient technologies in the region.

Website: <https://www.sacreee.org/>

NANOÉ – Madagascar

Co-founded in 2017 by two engineers from the French Superior School of Electricity (Centrale-Supélec) after almost 10 years experience in energy access and smart energy management systems in Europe and Africa, Nanoé is a Frenchmalagasy social business moved by the conviction that it is possible to integrate energy access and employment creation in Africa through the implementation of a new electrification model based on renewable energies, digital technologies and local entrepreneurship. The ambition of the innovative electrification solution developed by Nanoé, named "lateral

electrification”, is to combine and surpass the short-term merits of individual power solutions (i.e. rapid, easy and affordable access to basic energy services) and the long term benefits of centralized grid solutions (i.e. reliable, full and optimized access to modern energy services) by answering un-electrified people urgent needs more efficiently and sustainably than current decentralized power solutions while participating in the progressive bottom-up building of 21st century smart power infrastructures more flexibly than current centralized utility models

Website: <https://www.nanoe.net/en/>

African Association for Rural Electrification (CLUBER) - Côte d'Ivoire

The African Association for Rural Electrification / CLUB-ER is a bilingual network (English / French) which brings together about forty agencies and structures in charge of rural electrification in thirty-three countries of the continent. These members are Agencies and Rural Electrification Funds, Renewable Energy Agencies, Regulators, Departments in charge of Rural Electrification, National Electricity Companies and any structure whose mission is to promote the Rural Electrification. Any actor (private company, technical and financial partner, association, ...) from all horizons, interested in the issues of Rural Electrification on the African continent and ready to share his experience with CLUB-ER members can apply for membership as Associate Members. By pooling know-how and feedback from its members, the CLUB-ER aims at strengthening the capacities of African institutions of Rural Electrification and finding appropriate solutions to this problem.

Website: <https://www.club-er.org/home.html>

Eastern Africa Centre for Renewable Energy and Energy Efficiency (EACREEE) – Kenya

The East African Centre of Excellence for Renewable Energy and Efficiency (EACREEE) has been established to play a key role in promoting renewable energies (RE) and energy efficiency (EE) in the East African Community (EAC) region. EACREEE was officially launched in 2016 following the request by the East African Community (EAC) Secretariat and with support of the United Nations Industrial Development Organization (UNIDO), to create a Centre of Excellence in the region in 2013 and following the refinement of EACREEE's strategy in 2014 and 2015. At their 33rd Meeting held on 29 February 2016, the EAC Council of Ministers designated Makerere University College of Engineering, Design, Art, and Technology (CEDAT) as a Centre of Excellence for EACREEE. The Centre is registered with the legal name “East African Centre of Excellence for Renewable Energy and Efficiency Ltd” (EACREEE) – as a non-for-profit company limited by guarantee under the Ugandan Law. EACREEE receives key technical support from the United Nations Industrial Development Organisation (UNIDO) and financial assistance from the Austrian Development Agency (ADA). The Centre is hosted by the Government of Uganda, at the Makerere University in Kampala. EACREEE is a member of the Global Network of Regional Sustainable Energy Centres (GN-SEC).

Website: <https://www.eacreee.org/>

Kenya Power and Lighting Company (KPLC) – Kenya

Kenya Power hereinafter referred to as KPLC is the largest distributor and supplier of electricity in Kenya. KPLC also owns and operates power generation facilities in remote parts of Kenya not presently

within reach of the national grid. KPLC and its predecessor companies have a long history of accomplishments in East Africa dating back to 1908. KPLC, a publicly traded company was incorporated on in 1922, as East Africa Power & Lighting Company and became the Kenya Power and Lighting Company in 1983. In 1997, publically owned generation was separated from KPLC and in 1998 became the responsibility of KenGen. Refer to Appendix for registration documents.

Website: <https://www.kplc.co.ke/>

Odit-e – France

Odit-e develops disruptive analytics and software dedicated to low voltage network planning, operation, asset management and maintenance. Odit-e is a young and innovative start-up aiming to provide a service offer dedicated to Distribution System Operators who must face energy transition challenges. Odit-e has the ambition to digitize the low voltage grid with a very innovative approach based on machine learning, using data collected by smart meters. This low voltage digitization offer enables the DSO to perform asset management, low voltage state estimation and impact prediction of renewables and electric vehicles. Moreover Odit-e enable the DSO to reduce the distribution grid technical and non-technical losses, and optimize investments required for energy transition.

Website: <https://odit-e.com/en/>

Hive Power (HIVE) – Switzerland

Hive Power provides a Software as a Service for Smart Grids Analytics, to help Energy Suppliers and Grid Operators improving their operation, through optimal asset management.

Website: <https://hivepower.tech/>

OPIBUS – Sweden

Opibus is involved with electric mobility solutions and energy systems for the African region. This includes development, manufacturing and implementation of electric vehicle drive trains for use in conventional ICE vehicle chassis of all sizes, electric motorcycles, renewable energy components and charging infrastructure. Opibus has a physical presence in Stockholm, Sweden and Embakasi, Nairobi with 70+ employees, most of which are from East or Sub-Saharan Africa. The organization has shown strong track record and product deployment capabilities and is identified as one of the leaders in local implementation of e-mobility solutions in East Africa

Website: <https://www.opibus.se/>

STIMA – France

STIMA is a French start-up targeting electric mobility deployment in Africa and in particular battery charging services. The company develops management software for battery swapping stations in which moto-taxis drivers can exchange empty batteries for full ones in less than a minute. Thanks to a dense network of such charging service infrastructure, drivers will have access to e-motorcycles with unlimited range in cities. STIMA specifically focuses on the development, operation and optimization

of the swapping stations software, while collaborating with partners developing tailored motorcycles for African roads, swapping stations hardware as well as lease-to-own models to facilitate access to motorcycle ownership. STIMA leverages the potential of ICT technologies as well as its inhouse expertise in batteries to achieve high effectiveness and scalability of the system, using station remote cloud monitoring, AI-based battery fleet management and charge process optimization.

Website: <https://stimaboda.com/>

UNTAPPED – Kenya

UNTPD is a for-profit organization that is seeking to bridge the missing middle financing gap by funding revenue generating assets for individuals and SMEs, making it possible for local entrepreneurs to start and run successful businesses. UNTPD provides financing for businesses at all stages and in all sectors. It was first established as a spin-out of dlo Haiti, a social enterprise leveraging a network of local entrepreneurs to deliver clean water to Haitians since 2012, in 2019 in Nairobi, Kenya. UNTPD was created to provide the technological and financial support that SMEs needed to help them grow and scale their enterprises. While UNTPD initially started out in the water sector, just like its parent company dlo Haiti, providing lease financing to local vendors to acquire smart water technologies to run successful water businesses; the intention was always to provide this support in all sectors. Through the UNTPD Mobility Financing department, UNTPD is keen to provide the financing needed to accelerate the uptake of e-motorbikes by local entrepreneurs and in turn, actively participate in the global fight to reduce carbon emissions.

Website: <https://untapped-global.com/>

Jokosun – France

Jokosun is an organisation based in France and Senegal specialised in the implementation of 4 sets/sizes of PAYG-ready devices covering 4 purposes: Basic, Home, Pro, Modern. Products size can be custom made as they use a modular design principle. Jokosun's main activities include measures to promote last-mile access to energy, contribution to sustainable growth in Africa and to developing positive economics in Africa. The on-the-ground activities of Jokosun in rural Senegal enhance the energy transition and uptake of renewable energy technologies in these approaches.

Website: <https://www.jokosun.solutions/>

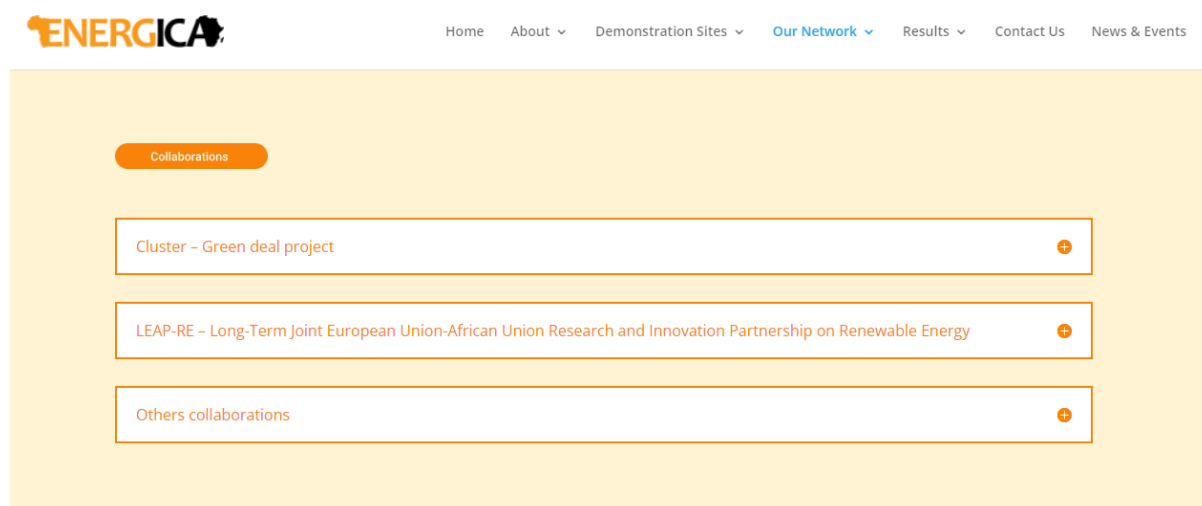
Euroquality – France

Established in 1997, Euroquality is a service provider specialised in innovation consulting and project management. Its main activities are innovation consulting, economic studies, policy evaluation, technological and technical studies, development of communication material, training, and the management of national and European projects. For 20 years, Euroquality has been able to adapt the different technological mutations and always be at the top of the state of the art, advising international clients on the development of their innovations. Euroquality has also been involved as a partner in a large number of projects on FP6, FP7, H2020, LIFE +, LIFE, Leonardo and Erasmus+ programmes, bringing its knowledge on several technical topics and its strong expertise on the management of EU projects and rules. This expertise is considered essential by most coordinator of

projects EQY has worked with, as it helps ensuring the right implementation of the project in due time and by respecting the rules, using already approved methodologies and tools.

Website: www.euroquality.fr

Collaborations



Cluster – Green deal project

Several commonalities are identified between ENERGICA and other H2020 funded Energy research projects in cooperation with Africa. You can find below more information about these projects and their synergies with ENERGICA.

SESA – Smart Energy Solutions for Africa

Implemented in nine African countries, the EU-funded SESA project will develop and test solutions to accelerate the green transition and energy access in Africa. It will explore innovative technologies and services in urban and rural contexts and support their uptake, deepening technical, financial and policy aspects. Specifically, SESA will co-develop innovations with local partners. The first phase will start in Kenya, where solutions include using water hyacinths from Lake Victoria to produce biogas. In the second phase, SESA will test energy solutions in Ghana, Malawi, Morocco and South Africa. The findings, included in a scalable toolbox for advanced implementation and management strategies, will facilitate the applicability and replicability of the technologies.

[Click here to learn more about SESA](#)

SophiA – Sustainable Off-grid solutions for Pharmacies and Hospitals in Africa

Rural and remote health facilities in Africa require sustainable off-grid energy supplies and water free of bacteria and viruses. The EU-funded SophiA project will develop containerised solutions for hospitals using natural refrigerants, solar thermal energy and photovoltaics. This will make it possible for health care units to access carbon-neutral energy for electricity, heating and the cooling of

medicine, as well as safe and clean drinking water, increasing quality of life in a sustainable way. The systems will be manufactured in Africa, and they will be tested at four rural hospitals in remote regions of the continent. Project results will accelerate sustainable development, growth and economic transformation in Africa.

[Click here to learn more about SophiA](#)

SteamBio Africa – Innovation large-scale production of affordable clean burning solid biofuel and water in Southern Africa

Rural and remote health facilities in Africa require sustainable off-grid energy supplies and water free of bacteria and viruses. The EU-funded SophiA project will develop containerised solutions for hospitals using natural refrigerants, solar thermal energy and photovoltaics. This will make it possible for health care units to access carbon-neutral energy for electricity, heating and the cooling of medicine, as well as safe and clean drinking water, increasing quality of life in a sustainable way. The systems will be manufactured in Africa, and they will be tested at four rural hospitals in remote regions of the continent. Project results will accelerate sustainable development, growth and economic transformation in Africa.

[Click here to learn more about SteamBio Africa](#)

REFLECT Africa – Renewable energies for Africa: effective valorization of agri-food wastes

The number of people without access to electricity in Africa had dropped in recent years, from 860 million in 2018 to 770 million in 2019. However, the COVID-19 pandemic is reversing this positive trend. In this context, the EU-funded REFLECT AFRICA project will develop innovative, reliable and adapted sustainable energy solutions based on the valorisation of biomass wastes from agriculture and the food industry through biomass gasification. Full-scale demonstrators will be built in Morocco, Ghana and South Africa to consider both urbanised and rural contexts on the continent. The project will propose solutions for on-grid and off-grid communities, such as the generation of renewable energy, its transmission and the use of storage systems.

[Click here to learn more about REFLECT Africa](#)

LEAP-RE – Long-Term Joint European Union-African Union Research and Innovation Partnership on Renewable Energy

A paradigm shift is required to trigger the energy-development nexus. One of the most effective ways to support this shift is to promote a pathway for empowering local research and innovation through Africa-Europe cooperation, while fostering the conditions for transforming research into effective innovation, tailored to specific societal needs, the capacities and aspirations in Africa, acknowledging regional discrepancies. For 5 years (2020-2025), the LEAP-RE programme will seek to create a long-term partnership of African and European stakeholders in a quadruple helix approach: government (programme owners and funding agencies), research and academia, private sector, and civil society.

Impact will be sought by creating a framework, methodology, and cooperation model. The aim is to reduce fragmentation by aligning existing bilateral and multilateral frameworks. LEAP-RE will establish and jointly implement research, innovation, and capacity-building activities.

[Click here to learn more about LEAP-RE](#)

Others collaborations

GIZ – German Corporation for International Cooperation

As a service provider in the field of international cooperation for sustainable development and international education work, GIZ is dedicated to shaping a future worth living around the world.

GIZ is involved in numerous regions in Africa, especially in projects revolving around the Water-Energy-Food nexus.

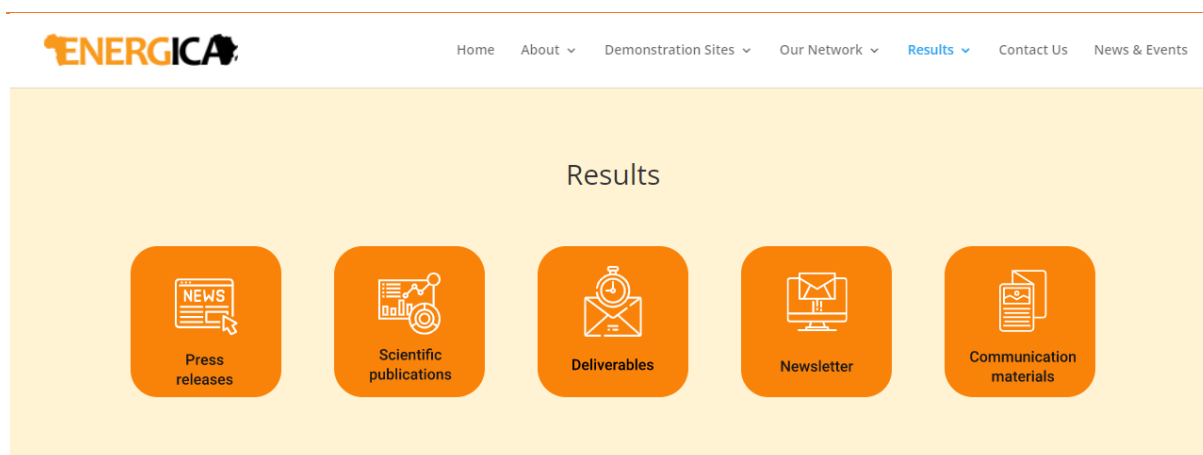
[Click here to learn more about GIZ](#)

BRIDGE- Cooperation group of Smart Grid, Energy Storage, Islands and Digitalisation H2020 projects

BRIDGE is a cooperation group involving 90 projects (58 ongoing) in the areas of Smart Grid, Energy Storage, Islands, and Digitalisation funded under the Horizon 2020 program over the last 6 years (2014-2020). It aims at fostering the exchange of information, experience, knowledge, and best practices among its members.

[Click here to learn more about BRIDGE](#)

RESULTS



The screenshot shows the ENERIGICA website's 'Results' page. At the top, the ENERIGICA logo is on the left, and a navigation menu includes Home, About, Demonstration Sites, Our Network, Results (highlighted), Contact Us, and News & Events. Below the navigation, the word 'Results' is centered. Underneath, there are five orange rounded-square icons with labels: 'Press releases' (with a newspaper icon), 'Scientific publications' (with a bar chart icon), 'Deliverables' (with a clock icon), 'Newsletter' (with an envelope icon), and 'Communication materials' (with a document icon).

Press releases

All press releases published on the ENERIGICA project will be available on this page.

Scientific publications

All scientific publications published by ENERGICA partners will be available on this page.

Deliverables

You can find on this page the deliverables that are – or will be – available for download. Click on a deliverable to learn more about it.

WP1: Specification and on-site studies

D1.1	Use-cases, requirements and KPIs definition	This deliverable defines the use-cases of the demonstrators. Each use-case specification will cover high-level use-case definition, Key Performance Indicators, UML diagrams, actors list, scenarios and information flows
D1.3	Regulatory framework and technical standards	The report will include a methodology section, a review of previous use-cases, the developed flowchart for regulatory framework analysis and a template for technical and non-technical primer.

WP2: co-creation of the demonstrators

D2.1	Baseline community, market and ecosystem assessment	This report will describe the findings from the socio-economic baseline study, outline significant structures within the community, market and ecosystem
D2.2	Community activation and involvement monitoring and evaluation report	This report will include a methodological section on multi-stakeholder involvement in energy transitions and on the work of the energy transition board.
D2.3	Multi-criteria decision analysis tool for energy system evaluation and planning	This open-source software will enable the user to select out of predefined criteria and apply individual weights to evaluate the performance of power generation technologies in a local context.
D2.4	Energy flow patterns for productive uses of energy	This report will describe the energy flow patterns and associated value flows within the local communities.
D2.5	ICESs socio-economic, environmental, institutional and technical requirements	The report will describe the requirements for the co-creation and implementation of ICESs at the three demonstration areas throughout the project cycle.

WP3: Sustainable social and environmental ecosystems

D3.2	ENERGICA capacity building and training programmes and tools	For each technology developed in ENERGICA, training manuals and training course will be created in collaboration with the project partners and the local stakeholders' needs identified.
D3.3	Roadmap for the implementation of capacity building and training programmes	This report will target dissemination and replicability strategies of the different programmes linked to the ENERGICA technologies and will detail strategies for future technologies incubation and market uptake.
D3.4	Predictive model for reduction of materials use	This report will provide the results on local value chains and circular economy models' capacity at different scales up to ensure an enhanced uptake of environmentally compliant energy technologies.
D3.5	Capacity for local value chains and circular economy model implementation	This report will provide the results on local value chains and circular economy models' capacity at different

		scales up to ensure an enhanced uptake of environmentally compliant energy technologies.
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WP5: Frugal and low-tech WEF nexus technologies (Sierra Leone)

D5.1	Biogas plant specifications	This report will provide a list of components for the modular turn-key biogas plant, previously sourced in Europe that can be replaced by locally manufactured components. It will also include results of the lab-scale ash trial.
D5.2	Easy access start-up manual and day-to-day operations instructions WP	Targeting local plant operators, this report will detail the optimal operation of the plant for an easier uptake.
D5.4	Assessment of photocatalytic pilot plant for solar water treatment	This report will demonstrate the efficacy of the photocatalytic pilot plant against the inactivation of target pathogens and organic chemical contaminants from wastewater under natural sunlight.
D5.5	Commissioning of the integrated biodigester photocatalytic reactor	This deliverable provides the integrated plant ready for demonstration phase, includes a full description, construction plan, diagrams and photographs of the prototypes and details the chosen action plan.

WP7: Techno-economic and feasibility studies

D7.1	Costs and benefits of the energy transition for the different local actors	The report will contain a review of the costs, benefits and risks of the demonstrators, taking into account financial, social and environmental aspects and applying the novel models to all ENERGICA technologies.
D7.4	Techno-economic assessment of hydrogen integration in rural nanogrids/minigrids	This report will provide a holistic assessment of the potential for hydrogen in decentralised off-grid energy systems (use cases, strengths and weaknesses, economic modelling, technical constraints for grid integration).
D7.5	Roadmap for the valorisation of agricultural co-products	This report will highlight the most promising pathways for the valorisation of co-products in energy access technologies (methodology used, data collected, results, conclusions, discussions and future research needed).

WP8: Social and environmental assessment

D8.1	LCA results	This report will present the results from the LCA of the upscaled demos, including comparison to reference system e.g. fossil fuels, scenario and sensitivity analyses.
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D8.2	Findings on social acceptance in access6to-energy projects (including demosites)	This report will present the results from the LCA of the upscaled demos, including comparison to reference system e.g. fossil fuels, scenario and sensitivity analyses.
D8.3	Regional integrated assessment models	These reports will establish regional-scale climate adaptation and mitigation predictive models for the Western, Eastern and Southern regions including a focus on the ENERGICA technologies.
D8.4	Report and manual on SDG based impact assessment	The report will describe the interlinkages of access-to-energy and energy transition projects with fields of sustainable development (encompassed by the SDGs) and quantify the impact of ENERGICA along the SDGs.
D8.5	ESIA framework results	A report that summarises findings from D8.1 to D8.4, considering also the impact on demo project level, using the ESIA procedure, which includes an integrated environmental and socio-economic assessment

WP9: Replicability, scaling-up and networking

D9.1	Report of related initiatives	The report will gather the relevant EU and AU initiatives for the project to monitor and be linked with.
D9.2	Sustainability projects platform	This platform will summarise the Africa-wide sustainability initiatives that exist and the solutions to wider uptake.
D9.4	User manual for wide replication	This manual will enhance the replicability of the solutions through all stakeholders and all contexts in Africa.

WP10: Communication, Dissemination, Exploitation

D10.2	Dedicated website	The website will be a key communication vector in the dissemination of the project's aim, events and on-going activities. It will be accessible by the public and will include a private collaborative space for the partners.
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Newsletter

The Newsletters published will be accessible here. Subscribe below to our newsletter to stay updated on the latest information of the project progress!

Subscribe to our Newsletter

First Name

Last Name

Email

Communication materials

Feel free to communicate about ENERGICA and help us increase the visibility of our project!

The following communication materials are available to you

- [ENERGICA poster](#)
- More to come!

Tag us on [Twitter](#) (@energica-h2020) and [LinkedIn](#) (ENERGICA).

NEWS

News

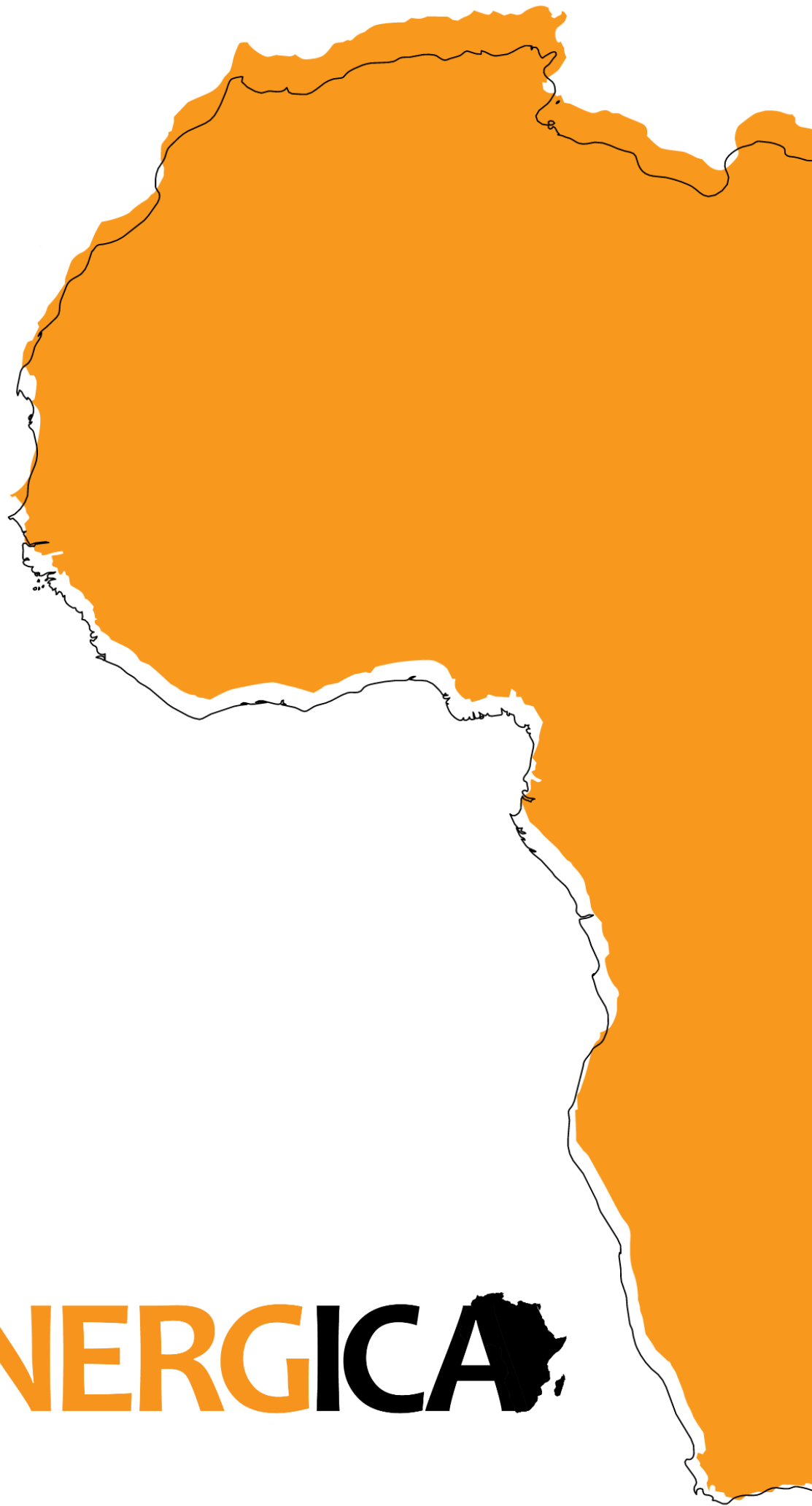
To stay updated about ENERGICA progress, follow us on [LinkedIn](#) and on [Twitter](#).

Event

Upcoming events

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ENERGICA