LEAP-SE

Long-Term Joint EU-AU Research and Innovation Partnership on Sustainable Energy

LEAP-SE Cofund Call 2025

Europe-Africa Research and Innovation call on Sustainable Energy

CALL TEXT

Link to «LEAP-SE Cofund Call»
Link to the **Electronic Proposal Submission System**

For further information contact the Joint Call Secretariat:
projects.leap-se[at]agencerecherche.fr

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1. About LEAP-SE

The Long-Term Joint EU-AU Research and Innovation Partnership on Sustainable Energy (LEAP-SE) is a 6-year program co-funded by the European Commission under Horizon Europe. It aims at developing a long-term partnership between Europe and Africa on Research and Innovation (R&I) in sustainable energy. The program is conducted by a consortium of 22 partners from European and African countries. The total budget of the program is around 30 Million Euros, including 10 Million Euros from the European Commission.

Activities of LEAP-SE are within the framework of the Climate Change and Sustainable Energy (CCSE) partnership of the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation.

The LEAP-SE group of funding organisations gathered consists of 8 funding organisations from Africa and 9 funding organisation from Europe.

The funding organisations from Africa are: Ministère de l'Enseignement Supérieur et de la Recherche Scientifique (MESRS), Algeria; Science, Technology & Innovation Funding Authority (STDF), Egypt; Ministère de l'Education Nationale, de la Formation Professionnelle, de l'Enseignement Supérieur et de la Recherche Scientifique (MESRSI), Morocco; Institut de Recherche en Energie Solaire et Energies Nouvelles (IRESEN), Morocco; Ministère de l'enseignement supérieur, de la recherche et de l'innovation (MESRI), Senegal; Department of Science, Technology and Innovation (DEPARTMENT OF SCIENCE AND INNOVATION) (DSTI), South Africa; National Research Fundation (NRF), South Africa; Ministry of Higher Education and Scientific Research (MHESR), Tunisia;

The funding organisations from Europe are: Osterreichische Forschungsforderungsgesellschaft Mbh – (FFG), Austria; Fonds de la Recherche Scientifique (FRS-FNRS), Belgium; Agence Nationale de la Recherche (ANR), France; Agence Régionale de l'Innovation (Agence d'innovation de La Réunion) (ARI), France; Forschungszentrum Jülich GmbH (JUELICH-PtJ), Germany; Ministry of University and Research (MUR), Italy; Fundação para a Ciência e a Tecnologia (FCT), Portugal Executive Agency for Higher Education; R&D&I Funding (UEFISCDI), Romania; The Scientific and Technological Research Council of Türkiye (TÜBİTAK), Türkiye.

The Cofund Call also reflects the European and African funders approaches and their understanding that achieving energy solutions in African countries is a complex challenge crossing many sectors, disciplines and policy areas as well as being exposed to profound dynamics at national, regional and global level. According to the data of IEA[1], around 660 million people are projected to remain without access to electricity in 2030, of which 85% or about 560 million people will be in Sub-Saharan Africa. Furthermore 2.3 Billion[2] people do not have access to clean cooking devices, relying instead on the traditional use of solid biomass, kerosene, or coal as their primary cooking fuel. Systemic change and transformation are needed, which requires a more holistic and integrated approach.

LEAP-SE aims at developing a long-term partnership between Europe and Africa on Research and Innovation (R&I) in sustainable energy, building on the achievements of the LEAP-RE, in particular Pillar 1 dedicated to the launch of cofunded calls, and PRE-LEAP-RE previous programs.

[1] https://www.iea.org/reports/sdg7-data-and-projections/access-to-electricity

[2] https://www.iea.org/reports/sdg7-data-and-projections/access-to-clean-cooking#abstract

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The thematic priorities addressed by the Cofund Call are based on the achievements of LEAP-RE and PRE-LEAP-RE. The thematic priorities of the Cofund Call are the 6 Multi-Annual Roadmaps of LEAP-RE (see chapter **Erreur ! Source du renvoi introuvable.**., below) plus an additional roadmap on "Production and utilization of Green Hydrogen". These first 6 Multi-Annual Roadmaps are part of the Roadmap for a jointly funded AU-EU research & innovation partnership on Climate Change and Sustainable Energy (CCSE) established under the UE-AU High Level Policy Dialogue on Science, Technology and Innovation, which prioritizes:

- Development and integration of renewable energy in the energy system
- Planning and modeling future sustainable energy systems
- Including society as an important stakeholder
- Market, pricing and business models for future sustainable energy systems
- Strengthening basic research and technology development

The projects funded under LEAP-SE are encouraged to develop collaboration with other projects funded by the European Commission such as the EU Call "AU-EU Water Energy Food Nexus"(HORIZON-CL5-2021-D3-03-01), "AU-EU Energy System Modelling" (HORIZON-CL5-2022-D3-02-02) and "Accelerating the green transition and energy access in Africa" (HORIZON-CL5-2023-D3-02-16).

2. Participating Funding Organisations and Budgets

The 17 Funding Organisations have agreed to allocate national/regional budgets for the LEAP-SE Cofund Call 2025, see table 1 below. The total indicative Cofund Call budget is around € 10 million provided by funding organisations + 3.5 million € from the EC's contribution.

Table 1*: Participating Funding Organisations.*

Country/ Region	Funding Organisation	National Contact Point(s) (NCP)	E-mail (s)	Budget (Euro)
Algeria	**MESRS**	Mohamed LOUCIF SEIAD Mokhtar SELLAMI	M.Loucif[at]dgrsdt.dz m.sellami[at]cnrst.dz	300 000
Egypt	**STDF**	Hanaa HASHEM Nariman REDA	hanaa.hashem[at]stdf.eg nariman.reda[at]stdf.eg	1 000 000
Morocco	**MESRSI**	Anas CHOKAIRI Hajar SAADI	chokairi.anas[at]gmail.com saadihajar95enssup[at]gmail.com	500 000
Morocco	**IRESEN**	Soukaina BOUDOUDOUH	boudoudouh[at]iresen.org	3MMAD ≈ 276 k€
Senegal	**MESRI**	Soukèye DIA TINE	soukeye.diatine[at]gmail.com	229 000
South Africa	**NRF and DSTI**	Nombuso MADONDA	NP.Madonda[at]risa.nrf.ac.za	550 000
Tunisia	**MHESR**	Hayet SOUAI Saida RAFRAFI FARHAT	souaihayet[at]gmail.com coopint2[at]gmail.com	400 000
African countries without a	**LGI**	Léonard LEVEQUE (M) Mathilde VIDELO (F)	leonard.leveque[at]lgi.earth mathilde.videlo[at]lgi.earth	600 000 (to be confirmed)

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participating Funding organisation				
Austria	**FFG**	Elli TZATZANIS-STEPANOVIC	elli.stepanovic[at]ffg.at	300 000
Belgium	**FRS-FNRS**	Joël GROENEVELD	international[at]frs-fnrs.be joel.groeneveld[at]frs-fnrs.be	300 000
France	**ANR**	Julian GUERRERO François MOISAN	Julian.GUERRERO[at]anr.fr Francois.moisan[at]anr.fr	1 500 000
France / La Réunion	**ARI**	Jérôme NASSIBOU	jerome.n[at]lareunioninnovation.re	100 000
Germany	**JUELICH-PtJ**	Johanna OHNESORG Thomas BRENNER	j.ohnesorg[at]ptj.de t.brenner[at]ptj.de	1 500 000
Italy	**MUR**	Rachele NOCERA	mariarachele.nocera[at]mur.gov.it	600 000
Portugal	**FCT**	Maria MAIA	Maria.Maia[at]fct.pt	300 000
Romania	**UEFISCDI**	Elena SIMION	elena.simion[at]uefiscdi.ro	1 000 000
Türkiye	**TUBITAK**	Hanife TUZCUOGLU Çağrı YILDIRIM	hanife.tuzcuoglu[at]tubitak.gov.tr cagri.yildirim[at]tubitak.gov.tr	1 000 000

During pre-proposal phase applicants from countries with funding organisation participating in the Cofund Call should contact the National Contact Point (NCP) from each region/country.

3. Cofund Call calendar: Important dates

The following dates apply for this Cofund Call (call in 2 stages):

Call pre-announcement	**December 2024**
Publication of the Cofund Call	**January 14th 2025**
Deadline for Pre-proposal submission (mandatory)	**March 27th 2025, at 16:00 CET**
Communication of pre-proposal assessment	**June 23rd 2025**
Deadline for Full Proposal submission	September 11th 2025, at 16:00 CEST
Communication of full-proposal assessment	**Beginning of December 2025**
Latest starting date of selected projects	May 1rst 2026

4. Scope and topics of the Cofund Call

The scope of the Cofund Call is based on the ecosystem analysis highlighting that Sustainable Energy are of vital importance in tackling the global challenge posed by climate change and in providing

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reliable energy access to millions of people worldwide. The Cofund Call aims at responding to the following expectations, which should be addressed by the submitted projects:

1. **Technological development** needs to be deepened at all points along the energy value chain, including conversion technologies and end use devices. Resource assessment is still crucial for some sources while distribution is an important area for research and innovation when dealing with integration of renewables via smart mini grids, either in their off-grid configuration, or when considering their long-term integration within the national grid. This is one of the most attractive areas of research where leapfrogging can be done by leveraging innovation with the digital revolution that is currently taking place in Africa and allowing integration of sources and additional storage opportunities.
2. Technological development cannot stand alone. A **comprehensive methodological approach** is needed, able to address the different phases of the energy value chain by considering societal needs, market evaluation, business models for long-term sustainability, and solution deployment as well as the long-term impact on society. As underlined by the roadmap of the AU-EU High Level Policy Dialogue on Science, Technology and Innovation (HLPD) on Climate Change and Sustainable Energies (CCSE) for R&I in the renewable sector, such an approach is essential for guaranteeing the long-term social, economic and environmental sustainability of technology.
3. Renewed attention to **energy scenarios and policy** is vital for understanding the contexts in which technologies and energy solutions will be developed. There is a clear need for supporting further research and capacity building on energy scenario analysis, including modelling approaches and tools that support policy and decision makers to build a long-term plan at country and regional level.

The proposals coordinators will be asked to indicate if they are more “research-oriented” or “innovation-oriented” during the submission. This indication will be only for the funding organisation to understand the main purpose of the proposal, and will not have any implication on the eligibility.

If the main purpose of the **proposal** is:

➢ Producing knowledge, analyzing data, better understanding and modelling phenomena, and developing expertise and tools, the proposal should choose the “research-oriented approach” (ROA) (TRL 1-4)

➢ Applied research and development toward market or improving practical, operational solutions – including for example technological companies, local communities and authorities, as well as management and testing of such solutions, the proposal should choose the “innovation-oriented approach” (IOA) (TRL 4 and above)

The eligibility criteria and evaluation criteria will remain the same for all the approaches.

The thematic of the Cofund Call are relying on the thematic priorities identified in the framework of PRE-LEAP-RE and updated because new technological development and societal issues were raised in the last 4 years, among them:

- The Green hydrogen production, storage, transport and utilisation as an energy vector aiming at decarbonisation of energy systems in different sectors and applications (electricity storage, industry, mobility, housing…).

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- Digital innovations could deeply enhance energy systems including off-grid systems where supply and demand should be balanced for smart grids stability and performance.
- Clean Mobility systems for persons and good transportation. Beyond the mass development of new clean transport vehicles which is outside the scope of this programme, the use of renewable energy to charge electrical vehicles batteries and new mobility services such as car sharing could be developed to decarbonise the mobility in rural as well as in urban areas. These systems encompass new business models such as car sharing and mobility as a service.
- The Energy - Water - Agriculture Nexus is a growing concern which should be addressed by research and innovation projects.
- COVID-19 pandemic demonstrated that local off-grid renewable energy systems brought resilience facing the pandemic and the shortage of value chains of conventional energy.

This leads to the **objectives** of the 7 Multiannual Road Maps (MAR) supported by the LEAP-SE Joint Cofund Call 2025 listed below:

1: Assessment of Renewable Energy Sources and integration of RES in sustainable energy scenarios;

2: End-of-life and second ‑ life management and environmental impact of RE components;

3: Smart stand ‑ alone systems;

4: Smart grid (different scales) for off grid application;

5: Processes and appliances for productive uses (agriculture, mobility and industry);

6: Innovative solutions for priority domestic uses (clean cooking and cold chain);

7: Production and utilisation of Green Hydrogen.

 # 1: Assessment of Renewable Energy Sources and integration of RES in sustainable energy scenarios

Within the energy transition, African countries need to adopt low carbon energy sources to meet their international commitments. This is feasible since the continent has a lot of renewable energy potential which can serve different development needs. This transition will require research and innovation actions to support the rethinking of energy infrastructure, energy access and energy uses. Deployments of renewable energy systems (RES) in Africa have been achieved for centralised and grid connected systems in high income countries but the recent development of renewable energy systems predict their role as they are the main sustainable option in decentralised and off grid contexts.

Technological development must be included in a more general framework directly related to the capacity and understanding of policymakers and related to energy scenarios at the local, country, and global levels. Medium and long-term sustainability of energy scenarios, as well as the assessment of needs and potential resources at country or regional levels is also needed to understand the potential implication of technology or energy solutions for local conditions (economic, environmental and even cultural). There is a strong need to support further research and capacity building in Energy Scenario Analysis, which include all modelling approaches and tools aimed to support policy and decision makers to build a long-term plan for energy systems development at the national level.

This development of tools such as models and scenarios should be designed to meet the following criteria: (i) compliance with national policies for RE development in coherence with National Determined Contributions (NDCs) of countries under Paris Agreement; (ii) essential compliance with the needs of local population; (iii) focus on efficiency and reliability; (iv) compliance with

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decarbonisation and a replacement of conventional energy solutions; and (v) a focus on achieving universal access for all.

References to results of (and learning from) existing research and innovation projects in this field will be positively valued in the selection process.

 # 2: End-of-life and second-life management and environmental impact of RE components

End-of-life (EoL) components (batteries, solar panels from large PV plants, etc.) used in **renewable energy (RE) production or storage** present a new environmental challenge, but also an unprecedented opportunity to create value and pursue new economic avenues. More energy systems will get decommissioned at the end of life (EoL), or when out of specification (OoS) for their initial purpose as RE technology. To provide the context to this, the volume of decommissioned solar PV panels will increase as the global solar PV market increases thus large amounts of EoL PV components are anticipated. The International Renewable Energy Agency (IRENA) estimates that there will be a surge in solar panel disposal in the early 2030s, and that by 2050, there will be 60 to 78 million cumulative tons of **photovoltaic panel waste** globally. The rise of electric vehicles and the increase in adoption of storage systems will also lead to a large number of **EoL/OoS batteries**. Accordingly, new energy paradigms are emerging in both Africa and Europe where 'second life' components are presented as appropriate solutions. In this regard, RE EoL/OoS components and their supply chains require research, development, innovation and capacity support. Materials that enable RE should be recycled or reused to prevent a scenario where the envisaged clean energy future becomes anything but clean. In Africa, off-grid solar products are revolutionizing the quality of life. Current EoL component volumes from this sector are small in proportion to the quantity and environmental impact of the total e-waste stream. However, due to rapid sector growth, there is a need to develop the **end-of-life management of off-grid solar and storage products** without delay.

In Africa, and in most developing countries, collection of EoL components is done by informal collectors with rudimentary methods. These rudimentary methods tend to be unsafe and environmentally unfriendly. There is a need to regularise this sector, ensuring that the informal collection and re-purposing of **EoL RE components becomes part of formal, regulated systems** (including waste collection, disposal, reuse and recycling process such as extraction of reusable materials), whilst paying attention to the needs of the informal workers whose livelihoods will be lost.

Moreover, where there are new products developed then innovation needs to take questions of lifecycle analysis into account right from the start.

Innovations for reuse, business models, testing procedures that are compatible with industrial standards should be developed and shared among business actors.

References to results of existing research and innovation projects in this field will be positively valued in the selection process.

3: Smart stand-alone systems

Integrating renewable energies into the global energy mix through versatile stand-alone systems can help to address the energy needs of off-grid areas in Africa. Even though urban population is growing

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rapidly, over **45% of the African population live in isolated rural communities**, which could benefit from the introduction of **RE technologies fitting their unique environment and availability of RE sources**. In addition, in the vast landscape of the Sahel, steppes and open areas, **population rarely have access to electricity**. Severe climate disasters and conflicts have resulted in **increased migration and 'climate refugees' in many African regions**. **RE and technology** can provide a **unique opportunity to equip communities with new facilities without interfering with their way of life** and prevent them from being left behind. The utilisation of renewable energies can also be a **good opportunity to fight climate changes**, such as **desertification and dryness in the Sahel**, and keep communities alive by encouraging young people to remain resident in their traditional lands.

Access to energy, especially electricity, is thus a **fundamental component to address rural or isolated communities** and support economic and social development. Specific needs include lighting, phones charging, domestic refrigeration. Beyond these essential needs some productive use of energy such as water pumping, grains milling, sewing machines, soldering iron, health devices such as vaccine storage should drive developments and innovation in smart standalone systems to ensure power production for these uses.

Researchers and innovative engineers should be involved in **improving the technology of stand-alone components and usability of the whole systems**. New business models should also be developed to ensure affordable solutions for the poorest. **The LEAP-SE program focuses on innovations related to the whole stand-alone system including energy storage and uses, rather than just the performance of PV cells alone.**

Individual solar photovoltaic systems are also an option in urban areas where the electricity provided by the grid is not reliable. The electricity provided by the PV system is partly directly consumed by the consumer and partly sold to the main grid if such process is allowed. This scheme is already largely deployed in Europe. In Africa individual solar PV systems connected to the grid in urban areas are growing due to the poor reliability of the electricity provided. Small or medium size enterprises are opting for such solution to prevent shortage of electricity essential for their business avoiding the use of diesel generators (e.g. case of frozen food distributors). However, the issue of storage of electricity could remain an obstacle requiring innovative solutions.

References to results of existing research and innovation projects in this field will be positively valued in the selection process

 # 4: Smart grid (different scales) for off grid application

Currently, more than **600 million people** in Africa do not have access to electricity, 80% of which live in rural areas. In addition to small stand-alone systems for individual households and extensions of the national grid, **there is a growing need for small-to medium-scale Distributed Generation (DG) solutions** capable of integrating a diverse mix of Renewable Energy Sources (RES) for supply to small- and medium sized communities. Increasing the attention of governments to **regulated penetration of REs** into the national grid will help overcome the dichotomy between centralized and decentralized electrification. Hybrid and Smart RES Grids have a role in addressing the many technological challenges that may arise from the integration of different RE technologies, distribution, and storage systems. **Digital solutions** applied to energy systems could deeply contribute to enhancing the performance of

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smart grids and provide a large field for research and innovation (stability of mini-grids, demand management, optimization of multi-energy supply…).

Different energy storage systems options should be developed considering the analysis done by World Bank's Energy Storage Partnership (**such as batteries, Hydrogen, thermal storage**).

These systems must **be optimized and integrated** to be able to respond to rapidly evolving energy needs. They can play a role addressing **environmental challenges** since they contribute to reducing local air pollution and GHGs emissions. If properly designed, they can also decrease energy-**water-food competition** by reducing reliance on traditional biomass and contributing to wise water management. New photovoltaic concepts such as **Agri-photovoltaic** (combining electricity production and agriculture on the same land) may also decrease the land competition between energy and food.
Furthermore, Smart and Hybrid Grids can respond to local **socio-economic challenges**. They can be scaled-up to meet growing demand, tailored to **match productive uses** in either agriculture or rural industries, collective cooking at the community level and support community service delivery in education and health. With the deployment of **appropriate business models**, improved energy affordability may be achieved for local people and job opportunities may be created associated with manufacturing, installation and maintenance.

References to results of existing research and innovation projects in this field will be positively valued in the selection process.

 # 5: Processes and appliances for productive uses (agriculture, mobility and industry)

According to a 2017 State of Food and Agriculture report by the UN's Food and Agriculture Organization, the key to achieving the Sustainable Development Goals in Africa is transforming rural communities and promoting agriculture. This is because approximately **60% of Africans derive their income from agriculture and agricultural processes. The Energy – water – Food nexus is the core of this challenge.** It is therefore important to prioritise boosting small-scale farmers' productivity and incomes in the agricultural production stage and creating off-farm employment in expanding segments of the food supply and value chains. Food supply and value chain segments involve processes such as harvesting, grain milling, drying, cooking, cooling, transportation and retail. These processes require variations of cold chain technologies, food processing technologies, and electrical power. The demand is met differently by different industries and countries in Africa. An example of this is industries where thermal power demand is met through biomass while cold chain energy needs are met through grid supply supplemented by diesel generators in cases of blackouts.
Changing eating and food retail processes in Africa should also be noted. Across urban Africa there has been a significant transformation in how people consume food incorporating a growing trend towards commercial pre-cooking of foods which are then retailed to consumers either as hot food or food which can be quickly finished (e.g. part-cooked beans) or re-heated, thereby reducing the energy expended in the household. There is a considerable opportunity to develop food processing, part and full-cooking. Clean cooking beyond domestic context as productive use of energy should also be considered strongly.
In order to **transform rural communities**, access to lighting systems alone is not enough for economic empowerment.

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Craft and small industrial activities at local level should also be addressed in programs supporting local economic development such as sewing workshops, welding works and craft manufacturing.
Facilitating productive use activities will increase the demand for energy from off-grid suppliers among poorer communities and in so doing contribute to a more commercially viable electric loading charge demand curve regarding solar electricity production, avoiding too expensive storage options and optimizing RE investments. To do this, it is important to support technological innovations and solutions such as **productive use (PRODUSE) appliances in agriculture and other activities** as a way of improving rural livelihoods. These appliances can be used to **increase productivity and/or efficiency in agriculture** and other Income Generating Activities (IGAs), such as **rural industrial processes**, and to **improve healthcare systems delivery**.
In order to **decarbonise mobility** of people in rural and urban areas electrical vehicles dissemination is a worldwide option including in Africa. Renewable energy could contribute to provide decarbonised electricity through batteries charging stations relying on local solar electricity when the electricity provided by the grid is mainly produced by fossil fuels or in off-grid situations. New mobility services development in urban or rural areas, associated with renewable energy, may provide sustainable solutions.
References to results of existing research and innovation projects in this field will be positively valued in the selection process.

 # 6: Innovative solutions for priority domestic uses (clean cooking and cold chain)

Specific Challenges

Today, there are 4 billion people worldwide who lack access to modern energy cooking services (SDG 7 definition)– more than half of the world's population. Fifty percent of these people are living in developing countries. In Africa alone, **700 million people lack access to clean cooking**. Currently, traditional devices use **firewood**, or **charcoal**, and have **very low efficiency**.

The utilisation of traditional biomass poses numerous environmental challenges:

- Traditional biomass utilisation is a recognized contributor to **deforestation & land degradation**;
- Biomass burning in traditional cook-stoves has been found to be responsible for about **20% of global black carbon emissions**;
- Indoor cooking with traditional devices causes respiratory illness, which contributes to the **premature death of millions of people** from associated diseases. In addition, the utilisation of traditional biomass also poses social challenges, including:
- The **time spent by women and children** in gathering firewood;
- **Absenteeism from school** caused by Illness due to respiratory infections, common in some countries of sub-Saharan Africa.

Actions necessary to overcome the challenges associated with traditional cooking systems represent technological, economic and social challenges:

• **Improving the design of existing stoves has been attempted** for the past twenty to thirty years and has made few in-roads into the total numbers lacking access to modern cooking or effectively addressing the health and environmental impacts of cooking with biomass**. The LEAP-SE program focuses on innovations that relate to the grasping of opportunities for the substantial deployment of highly efficient cooking appliances (e.g. the emerging potential for electric cooking)**, new or

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improved approaches to LPG retail, and delivery such as PAYG, new larger-scale approaches to biogas via municipal scale developments or the development of other innovative new fuels such as ethanol.

Complementary to clean cooking is **food and drug preservation**, a second common issue at the domestic and community levels in Africa. In sub-Saharan Africa nearly **40% of food perishes before it reaches the consumer**, while the lack of effective refrigeration limits the possibilities of vaccine distribution in rural, and in remote areas: a factor taking on greater significance in the current COVID era. Here the cold chain can play a crucial role in reducing food waste, improving public health, and enabling African communities, especially in rural areas, to participate in national and international trade as producers and consumers. The technological challenges are mainly based on the energy vector, with the use of heat in place of electricity to generate low temperatures in domestic and community systems, or the use of static and compact technologies with higher reliability compared to traditional systems, and the coupling of refrigeration units with off-grid electric power systems. The development of movable autonomous systems is another important element to take into consideration. Finally, the need for compact and fully reliable systems that avoid breaking the cold chain for medicine, and for food preservation with reasonable costs represents a significant socio-economic challenge

References to results of existing research and innovation projects in this field will be positively valued in the selection process.

 # 7: Production and utilisation of Green Hydrogen

The following R&I priorities on green hydrogen in Africa have been identified among different segments of the value chain of green hydrogen :

- Modelling activities

These activities include modelling the potential production and penetration of green hydrogen in the national energy system, modelling the coupling of renewable energy sources and hydrogen production, modelling water supply and hydrogen production—also considering desalination and the usage of waste water—as well as Modelling H_2 demand to facilitate the viability assessment of green hydrogen production.

- Green hydrogen production technologies

Research and development on Green Hydrogen production is conducted worldwide, with large-scale demonstrators being tested in many countries looking at the industrialization stage. The main technology used is the electrolysis of water. The research and innovations priorities in LEAP-SE Cofund Calls for projects will address:

- The enhancement of existing processes with a particular focus on application in African context (reliability, maintenance and security).
- The issue of water availability in some contexts of superficial water shortage (e. g. using sewage for electrolysis).
- Small electrolysers for application in off-grid context.

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- Experimentation of small or medium-sized demonstrators is strongly encouraged

Furthermore, research and innovation projects may address the enhancement of biogas or synthetic gas production from biomass reforming and thermolysis to produce hydrogen using renewable energy within the African context.

Research on advanced technologies aiming to the direct conversion of sunlight into chemicals and solar fuels is encouraged. This scientific field covers the following pathways: the development of catalysts for water splitting, CO_2 reduction, and other key reactions; the improvement of solar light harvesting materials; the enhancement of charge separation; the coupling of catalysts with solar light harvesting materials; the development of photoelectrochemical and photocatalytic devices; photobiological and biohybrid approaches, the thermochemical pathways using concentrated sunlight; and the design, engineering, and demonstration of devices and systems at scale.

- Green hydrogen utilization

Green hydrogen could be used in various sectors, mainly in industry (to produce fertilizers or ammonia but also in other processes as energy decarbonised vector or reduction feedstock (steel industry, cement…). Green hydrogen could also be used in transport sector as decarbonised energy vector for road vehicles especially for heavy duty vehicles (trucks, buses).

Green hydrogen could be a storage of electricity produced by variable renewable energy (solar or wind). These solutions (P2X – X2P) could be envisaged at the level of large renewable electricity plants connected to the grid or at mini-grids level instead or as a complement to batteries.

The research and innovations priorities in LEAP-SE Cofund Calls for projects will address:

- Research and innovation on H_2 utilization in various industrial processes. The study and demonstration of power-to-hydrogen solutions in industry for industrial sites using H_2 as fuel or feedstock
- Research and demonstration on renewables driven power-to-ammonia/UREA systems for farming area
- End of Life of fuel cells technologies
- Research and innovation on Raw Materials for fuel cells technologies in Africa
- Study and demonstrate Renewables driven power-to-hydrogen-to-power systems in mini grid and/or off-grid remote contexts

Demonstrators´ experimentation will be encouraged if the expected subsidies fit within the maximum amount of funding per project eligible under LEAP-SE Cofund Calls.

If fuel cells technologies research and innovation for application in Africa is encouraged, development of new electric vehicles using fuel cells is not in the scope of this call.

- Green hydrogen storage and transportation

Different type of storage devices is used to store hydrogen, including compressed or liquefied gas vessels, solid state devices, and the production of H_2 derivatives such as methanol. Green hydrogen can be transported over short or medium distances as pressurized or liquefied gas. For

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transcontinental transportation of green hydrogen, solutions may rely on transforming hydrogen into ammonia for shipping. The research and innovations priorities in LEAP-SE calls for projects will address:

- Research and innovation on hydrogen storage solutions, specifically for remote areas taking into account reliability, robustness and security.
- Research on hydrogen conversion into ammonia or other chemicals by using renewable energy sources.

This thematic priority will also focus on **several cross-cutting issues**. These include the social assessment and social engagement of green hydrogen stakeholders in projects, prospective studies on Hydrogen Valleys, and on Water-Energy-Food Nexus, the enhancement of existing technology's reliability and security in African context, the utilizing testing and training facilities effectively, Natural Hydrogen resources assessments and valorization.

Conditions for the setting up of a regulatory framework common in Africa for hydrogen could be integrated in R&I projects.

In the various thematic priorities identified above, technological research and the experimentation of demonstrators will be encouraged as far as the budget required for funding by LEAP-SE remains within the scope of maximum funding eligible for projects.

Please note that not all topics are supported by all Funding Organisations, see summary in

Table 2**.**

Table 2*: Summary of the main Multi Annual Roadmaps (MAR) supported by the Funding Organisations.*

Country /Region	Funding Organisation	MAR1	MAR2	MAR3	MAR4	MAR5	MAR6	MAR7
Algeria	**MESRS**	x	x	x	x	x	x	x
Egypt	**STDF**	x	x	x	x	x	x	x
Morocco	**MESRSI**	x	x	x	x	x	x	x
Morocco	**IRESEN**	x	x	x	x	x	x	x
Senegal	**MESRI**	x	x	x	x	x	x	x
South Africa	**NRF and DSTI**		x	x		x		x
Tunisia	**MHESR**	x	x	x	x	x	x	x

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African countries without a participating Funding organisation	**LGI**	x	x	x	x	x	x	x
Austria	**FFG**			x	x			
Belgium	**FRS-FNRS**	x	x	x	x			x
France	**ANR**	x	x	x	x	x	x	x
France	**ARI**	x		x	x		x	
Germany	**JUELICH-PtJ**	x	x	x	x	x	x	x
Italy	**MUR**	x		x	x			x
Portugal	**FCT**	x	x	x	x	x	x	x
Romania	**UEFISCDI**	x	x	x	x	x	x	x
Türkiye	**TUBITAK**	x	x	x	x	x	x	x

5. Who may apply

This Cofund Call for proposals is aimed at all actors in the renewable energy value chain (including universities, research institutes, companies, private sector, NGOs and public authorities) that can contribute to the objectives of LEAP-SE and who meet the eligibility criteria in section 7, as well as national/regional regulations (see "National/Regional Requirements" available on the call page).

The eligibility of the consortium composition in presented in the section 7.

Participating countries/regions are the countries/regions who have at least one funding organisation participating in the Cofund Call (see Table 1).
In general, organisations not eligible for funding from national funding agencies from European countries/regions **not** participating in the Cofund Call can be partners of the consortium on the condition that they provide evidence of the availability of their own funds to cover their project activities.

African Organisations from countries/regions not participating with funding organisations in the Cofund Call are eligible to apply for funding, although the resources available for this are limited. Organisations wishing to be partners in a consortium can be funded through the LEAP-SE partner LGI and the eligibility will be performed at the pre and full proposal stage[3]. If the project is selected

[3] The eligibility procedure for all the partners is presented in part 8.2

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for funding, the partners will have to complete the full due diligence process requested by LGI Sustainable Innovation.

A consortium applying to the Cofund Call must consist of at least four project partners: at least two independent legal entities from two different Member States from the European Union or Horizon Europe associated countries and another two independent legal entities from two countries from thein African Union. There is no limit to the maximum consortium size, but it should be suitable for the budget level and complexity of the project and each partner should have at least 10% of the total Person Months (PMs) in order to demonstrate the transnational added value of collaboration.

Consortia may gather different academic and sectoral backgrounds, e.g. physical scientists, engineers and technology developers, but also social scientists and policy advisors (in interdisciplinary consortia) working closely together and covering different parts of the renewable energy value chain.

Project consortia covering the entire innovation chain from idea to end-user/market are considered positive as well as consortia with actors traditionally working in other industries, so that more ground-breaking innovations can be created through new approaches.

LEAP-SE Joint Call 2025 supports gender equality, therefore applicants should consider gender equality and gender issues wherever possible, including in, for example:

- The conceptual and methodological design of their project;
- The social and economic impacts of their project;
- Selection of project coordinator;
- Composition of project group;
- Division of work, power and influence in the project;
- Involvement of target groups.

6. What we fund

LEAP-SE Cofund Call 2025 addresses all research and innovation aspects of sustainable energy value chain, covering energy production as well as transformation, storage and utilization. It is encouraged to include cross-cutting issues. Projects should define a task dedicated to the dissemination/transfer of their results.

Overall, LEAP-SE Cofund Call 2025 can fund basic research, industrial research, applied research and experimental development projects (covering all innovation steps) that are 12-36 months long. However, **not all funding organisations can fund all types of research (or TRL),** see Table 3 and “National/Regional Requirements” available on the call page**Erreur ! Source du renvoi introuvable.**.

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Table 3: ***Type of research and entities eligible for funding by the participating Funding Organisations.***

Country /Region	Funding Organisation	Fundamental/ Basic research	Industrial/ Applied research	Experimental research	TRL	Type of entities eligible for funding	Project duration
Algeria	**MESRS**	Yes	Yes	Yes	2-8	Algerian Universities, Research Centers, and SMEs	18-36 months
Egypt	**STDF**	No	Yes		2-6	Egyptians Universities and Research Institutions	Up to 36 months
Morocco	**MESRSI**	Yes	Yes	Yes	All	Public universities; Universities from the Public-private partnership in collaboration with public universities; Non-university institutions in partnership with public universities; Public research institutions in partnership with public universities	
Morocco	**IRESEN**		Yes	Yes	3-7	Moroccan LMS, universities, research centers....	18-36 months
Senegal	**MESRI**	Yes	Yes	Yes	4-5	All Senegalese research institutions and industrial enterprises	36 months
South Africa	**NRF and DSTI**	Yes	Yes	No	4-6	Public Higher Education and Research Institutions	36 months
Tunisia	**MHESR**	No	Yes	Yes	2-8	Tunisian public research institutions	Up to 36 months

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African countries without a participating funding organisation	**LGI**	Yes	Yes	Yes	3-8	African public research organizations African Universities African private research institutes African companies African local authorities (municipalities, metropolitan areas, regions)	Up to 36 months
Austria	**FFG**	No	Yes	Yes	2-8	Austrian companies, universities, research institutions, technology transfer institutions, innovation agents, non-profit legal entities (e.g. NGOs, stakeholder associations, societies)	Up to 36 months
Belgium	**FRS-FNRS**	Yes	No	No	1-3	Academia and public research institutions from the "Fédération Wallonie-Bruxelles"	Up to 36 months
France	**ANR**	Yes	Yes	Yes	2-6	French entities as following, are eligible: - French public and non-profit research sector organisations - French commercial companies - Any other French private entities only if they collaborate with a French public research organisation Ineligible: -territorial collectivities	18 to 36
France	**ARI**	Yes	Yes	Yes	2-8	Reunion Island entities as following, are eligible: - Reunion Island research organization; - Reunion Island commercial companies; -NGO and Reunion Island entities (except Reunion Island commercial companies) only if they collaborate with a French public research organization. Ineligible: - territorial collectivities. *Whose real registered office is in France	

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Germany	**JUELICH-PtJ**	Yes	Yes	No	2-6	All German partners	Up to 36 months
Italy	**MUR**	Yes	Yes	Yes (with limitations)	3-6	-Enterprises (legally registered in the Register of Companies): large companies, medium companies and SMEs, spin offs etc.-Higher education institutions (State universities and legally recognized universities as defined in L. 29 July 1991, n. 243) and their consortia. -Public research institutions (as listed in D.Lgs. n. 218/2016 Art 1). -Public and private research organisations ('organismo di ricerca') including research foundations in accordance with EU Reg. n. 651/2014 of the European Commission - June 17, 2014. -Other not-for-profit registered legal entities (foundations and associations) are eligible if participating in cooperation with one (or more) Italian Higher Education Institution(s) or public or private Research Organisation(s)/Institution(s).	Max. 36 months
Portugal	**FCT**	Yes	Yes	Yes	1-8	All	Up to 36 months
Romania	**UEFISCDI**	Yes	Yes	Yes	4-5	Legal entities established in Romania are eligible to get funding - public and private accredited universities, national R&D institutes, other research organisations, SMEs, large industrial enterprises, according to the national requirements.	Up to 36 Months
Türkiye	**TUBITAK**	Yes	Yes	Yes	2-8	Turkish Large, Medium and Small Entreprises, Universities, Public Research Organisations, and Public Authorities	Up to 36 Months

Always check with the corresponding national/regional Funding Organisation for any restrictions and 'State Aid Rules'.

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*TRL – Technology Readiness Level (as defined in Appendix II).*Note: Entities subject to EU restrictive measures under Article 29 of the Treaty on the European Union (TEU) and Article 215 of the Treaty on the Functioning of the EU (TFEU) are not eligible to participate as recipients of Financial Support to Third Parties (FSTP) and LEAP-SE will apply the Council Implementing Decision (EU) 2022/2506 of 15 December 2022 on measures for the protection of the Union budget against breaches of the principles of the rule of law in Hungary.

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7. Eligibility criteria

The pre-proposals and full-proposals have to meet the following eligibility criteria, as detailed further below, as well as the national/regional funding regulations (see the "National/Regional Requirements" available on the call page):

Eligibility criteria – Consortium composition	
Consortium composition	➢ A consortium applying to the Cofund Call must consist of at least four project partners: - at least two independent legal entities from two different Member States from the European Union or Horizon Europe associated countries and another two independent legal entities from two countries from the African Union. ➢ At least one partner of the Consortium should be from an EU Member State or Horizon Europe associated countries participating to the Cofund Call and eligible to receive support from the relevant participating funder and one partner from an African Union country participating in the Cofund Call and eligible to receive fundsfrom a participating funding organisation (see Table 3.). ➢ At least half of the partners in a consortium must belong to countries participating in the Cofund Call and eligible to receive support from the relevant participating funder. ➢ Each consortium must include at least one partner from the institutional research sector (academic, public research centre, non-profit organisation, etc.) and one partner from a commercial company coming both from participating countries.
Applicant/ **Lead researcher (coordinator)**	➢ A Lead Researcher can be the coordinator in **just** one proposal (i.e. if a Lead Researcher coordinates one proposal, he/she can only participate in other proposals as a partner and not coordinator of a consortium partner). ➢ The coordinating partner of the consortium must be established in a country or region participating in the Cofund Call, request funds from one the participating Funding organisation and be eligible.
Applicant	➢ Researchers´ members of the IRP (International Review Panel) or experts of proposals cannot be member of a consortium applying to this Cofund Call. ➢ Researchers employed or affiliated to a funding Organisation cannot apply to the Cofund Call except where explicitly authorized.[4]

[4] Forschungszentrum Jülich GmbH (FZJ), Fond de la Recherche Scientifique – FNRS (FRS-FNRS), Institut de Recherches en Energie Solaire et Energies Nouvelles (IRESEN), Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK)

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Eligible consortium/applicant	➢ Each partner requesting funding MUST comply with the national/regional funding rules and regulations of their respective Funding Organisation to ensure the eligibility of the consortium proposal (see "National/Regional Requirements" available on the call page). Please consult your National/Regional Contact Point (Table 1). Public organisations from African countries/regions not participating in the Cofund Call have a limited possibility to be funded and become partner of funded consortia and should contact LGI (see "National/Regional Requirements" available on the call page).

Eligibility criteria – pre/full proposal submission	
Pre-proposal submission deadline	➢ The pre-proposals must be submitted, via electronic form exclusively through the LEAP-SE Electronic Submission Platform provided by the French National Research Agency (ANR), by the consortium coordinator no later than **27th March 2025, at 16:00:00 CET**[5];
Full-proposal submission deadline	➢ Upon invitation, the full-proposals must be submitted, only via electronic form through the LEAP-SE Electronic Submission Platform provided by the French National Research Agency (ANR), by the coordinator of the consortium no later than **11th September 2025, at 16:00:00 CEST**[6].
Pre-proposal and Full-proposal templates	➢ LEAP-SE Templates must be used, i.e. Forms A (Calibri, 11pt, single space for all text except references and footnotes; the pages' margins 2.5 cm should be kept), Form B and C. Ethics issue and CV's of lead researcher/key personnel, template for Budget (at the pre and full-proposal stage, in a separate Excel file). All fields of the pre-proposal and full-proposal technical descriptions must be filled in. A Guide for Proposal Submission, including all templates, is available on the LEAP-RE website.
Pre-proposal length	➢ The total proposal length (Form A) cannot exceed 10 pages. Images and tables must be included in the maximum page length.
Full-proposal length	➢ The total proposal length (Form A) cannot exceed 30 pages, including the Gantt chart(s), the references, the Budget table, the transnational and international collaboration and the

[5] 16.00 CEST/Central European Time

[6] 16.00 CEST/Central European Summer Time

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	Ethics, Gender balance, and other issues section. All images and tables must be included in the maximum page length.
CV template	➢ A maximum of three CVs (of lead researcher and two key personnel) per consortium partner is allowed. Each CV must not exceed 2 pages. LEAP-SE CV template must be used.
Language	➢ The language of the proposal is English.
Dissemination/translation of the results	➢ Projects should define a task dedicated to the dissemination/transfer of their results.

Eligibility criteria – administrative data	
Project duration	➢ The project duration should be a minimum 12 months and should not exceed 36 months (national/regional regulations MUST be consulted in this respect. See "National/Regional Requirements" available on the call page).
Budget and funding request	➢ The detailed budget is asked at the pre and full-proposal stage using the Excel template "Budget and funding request ". ➢ The maximum funding for each project is 1.5 M€ and the maximum funding per partner in one project is 700 k€. However not all funding organisation will apply these amounts (see "National/Regional Requirements" available on the call page). The funding maximum for one partner 700 k€ will apply for each project but does not accumulate for a partner present in several projects[7]. ➢ The total requested funding rate of partners from the same country in a proposal cannot exceed 50% of the full funding of the project
Applicant requesting funding	➢ At the pre-proposal step: online validation of the "Commitment of applicants" by each partner on the submission platform -box to tick on the submission platform). ➢ At the full proposal step: All **applicants requesting funding** must provide a statement of commitment duly signed by the legal representative of the organisation, in coherence with national/regional regulation (see "National/Regional Requirements" available on the call page), **Form B**.
Applicant not requesting funding	➢ At the pre-proposal step: online validation of the "Commitment of applicants" by each partner on the submission platform

[7] It should be noted that the budget requested regarding the work plan and the research objectives will be part of the evaluation (value for money).

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	➢ At the full proposal step: **Applicants not requesting funding**, can be partners of the consortium on the condition that they provide evidence of the availability of their own funds to cover their costs by providing a signed statement duly signed by the legal representative of the organisation, **Form C**.
Participant Identification Code (PIC)	➢ If the project is selected for funding, the participants will have to provide a Participant Identification Code (PIC).

A summary of some national/regional funding rules is provided in

Table 2 and Table 3, as well as in the national/regional funding regulations ("National/Regional Requirements" available on the call page) but **applicants should check with their national/regional contact point (Table 1) their eligibility conditions. Applicants from African countries without a participating Funding organisation to the Cofund Call should contact** leonard.leveque[at]lgi.earth and mathilde.videlo[at]lgi.earth).

All researchers involved in funded projects should follow fundamental ethical principles and adhere to the principles of good scientific practice and to The European Code of Conduct for Research Integrity by ALLEA.

8. Cofund Call procedures: submission, evaluation, selection, funding and reporting

There will be a two-stage submission procedure: pre-proposals and full-proposals. All lawful steps will be taken to ensure confidentiality of information and documents obtained during the submission, evaluation and selection procedures of the Cofund Call.

8.1. How to apply

Registration

1. The coordinator (Partner 1), who will represent the consortium, will need to register on the LEAP-SE Electronic Submission Platform provided by the French National Research Agency (ANR) (coordinator registration link) before submitting a proposal.
2. Once registered, the coordinator will receive a registration email.
3. The coordinator will need to register the partners of the consortium (name and e-mail).
4. After registration, all the partners will receive an email to activate their account.
5. With her/his account, each partner can enter his/her own profile.

The procedure to use the electronic submission system is explained in this document: LEAP-SE_Cofunded_call_Submission_Guidlines_2025 available on the call page.

Pre-proposal form

A joint transnational pre-proposal shall be prepared in English by the consortium and submitted in PDF form via the Electronic Proposal Submission System by the lead researcher representing the coordinator. The pre-proposal submission is mandatory and must be submitted no later than **27th March 2025 at 16:00 CET**.

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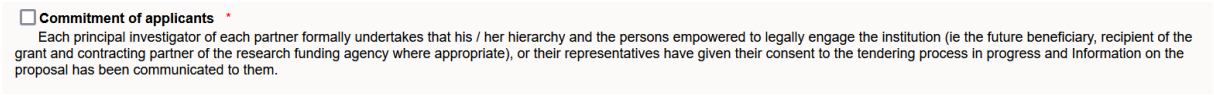
If required by the national/regional regulations, submission forms and other documents must also be submitted directly to the participating Funding Organisations according to their deadlines. **Please consult the "National/Regional Requirements" available on the call page and contact your regional/national contact point (**Table 1**) for further details.**

The pre-proposal form must be filled in by the coordinator, except for the partner's profiles and respective CVs. LEAP-SE templates for the technical description of the proposal (10 pages, Calibri, 11pt single space; the template's margins of the page should be kept) and annexes are available on LEAP-RE website.

All partners requesting funding should provide tick on the submission platform the Statement of Commitments.


Commitment of applicants *
Each principal investigator of each partner formally undertakes that his / her hierarchy and the persons empowered to legally engage the institution (ie the future beneficiary, recipient of the grant and contracting partner of the research funding agency where appropriate), or their representatives have given their consent to the tendering process in progress and Information on the proposal has been communicated to them.

Resubmitting the pre-proposal before the submission deadline is possible.

Full Proposal form

The full proposals shall be written in English by the consortium and submitted in PDF form via the Electronic Proposal Submission System by the lead researcher representing the coordinator.

Full proposals must be submitted no later than **11th September 2025, at 16:00 CEST**. **Full proposals will be accepted only from those coordinators explicitly invited after communication of pre-proposal assessment**.

LEAP-SE templates for the technical description of the full proposal (30 pages, Calibri, 11pt, single space; the template's margins of the page should be kept) and annexes are available on the LEAP-RE website.

After the pre-proposal selection no **major** changes are possible.

- the project objectives stated in the pre-proposal cannot be changed;
- the coordinator (and the lead researchers) must stay the same, except in case of force majeure;
- the consortium should stay the same (with the exception of a withdrawal of a partner of the consortium and the Inclusion possibilities allowed explicitly by the Call Secretariat, see below)
- only minor changes on the funding request (up to 10%) per Funding Organisation can be allowed (except for changes allowed by the Inclusion Procedure below)[8]. Please contact your National/Regional Contact Point, as some Funding Organisation could not allow it.

In any case, all changes from pre- to full-proposal have to be coordinated with all involved Funding Organisations by the coordinator. As some Funding Organisations do not allow changes, partners make sure that major information given in the pre-proposal does not need any revision before submitting the full-proposal.

[8] Please contact your national/regional Funding Organisation

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Inclusion procedure

It is possible that invited consortia will be explicitly allowed by the LEAP-SE Joint Call Secretariat (JCS) to integrate, in their full proposal, additional partners requesting funds from specific Funding Organisations, if these Funding Organisations are underrepresented in the proposals invited to the second stage.

This addition of applicants shall be done in a way that is compatible with all the national eligibility conditions already indicated in the Cofund Call text and the internal regulations of the respective Funding Organisations.

This inclusion option between the pre-proposal stage and the full-proposal stage shall be conducted in close cooperation with the respective Funding Organisation with the goal of involving as many countries as possible in funding the transnational projects.

The additional new partner may not effect a significant change to the proposal's original aims, impact and main tasks, but should enhance the original focus.

This possibility does not invalidate the consistency requirements between pre-proposal and full proposal stage outlined at the end of section 7 and 8.

8.2. Eligibility procedure

The submitted pre-proposals will be subject to an **eligibility check performed at a Cofund Call level by the Joint Call Secretariat (JCS) for the transnational eligibility and at a national/regional level by the Call Steering Committee (CSC) members** to confirm compliance with national/regional priorities, rules and regulations.

The submitted full-proposals will also be subject to an eligibility check performed by the JCS and by the CSC to confirm compliance with national/regional priorities, rules and regulations.

8.3 Evaluation procedures

The evaluation procedures are designed to identify the best proposals in terms of scientific excellence, impact, quality and efficiency on the implementation, as thoroughly and accurately as possible; and to undertake the assessment in a fair, transparent and homogeneous way for all proposals submitted to the transnational Call.

The quality assessment of the submitted proposals will be performed by the International Review Panel (IRP) composed of international independent expert reviewers that sign Non-Disclosure Agreement and Conflict of Interest.

The evaluation process will be monitored by an independent observer who will prepare a report on the assessment process for the European Commission.

Evaluation stage 1: Pre-Proposals

Each eligible pre-proposals will be allocated to at least two International Review Panel (IRP) experts but most of the time three IRP experts designated according to their expertise relevant for the topic of the pre-proposal.

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Pre-proposals will be assessed based on the three main Evaluation Criteria: 1) Scientific Excellence; 2) Impact and 3) Quality and Efficiency of the Implementation (see paragraph 9 below). In case of strong disagreement between the individual scores by the IRP experts allocated to a pre-proposal (differing 6 or more points between the lowest and the highest individual total scores), the evaluation panel will have a consensus meeting on the score for each of the three main evaluation criteria in the range of 0–5, resulting in a total score in the range of 0–15.

A ranking list will be developed for each MAR with pre-proposals having an average or consensus score at or above 3 for all the three evaluation criteria and a total average or consensus score at or above 10.

7 ranked lists (one per MAR) of pre-proposals will be produced by the IRP based on the final scores. The selection of pre-proposals for the stage 2 will be decided at a CSC consensus meeting to finalise the stage 1 pre-proposal assessment. A list of eligible proposals of high quality will be invited to submit a full proposal for Stage 2.

Evaluation stage 2: Full-Proposals

Each Full Proposal will be evaluated based on three main evaluation criteria (see Paragraph 9 below) by, at least and most of the time three members, up to four members when the complexity of the project increases of the International Review Panel.

The International Review Panel will meet at the panel meeting to discuss all proposals, to produce an assessment report for each full proposal and ranking lists of full proposals to be considered for funding by the Funding Organisations 7 ranking lists (one per MAR) will be established for eligible full proposals with overall rating at, or above, 10 and with all the main evaluation criterion scores at, or above, 3. Proposals not meeting the thresholds will not be recommended for funding by the IRP.

All proposals will be evaluated together (i.e. the MARs will not be treated separately) by the same International Review Panel.

8.4. Selection procedures and feedback to applicants

The CSC will strive to ensure that the number of top-ranked full-proposals are funded to the maximum extent possible. The selection of full-proposals will be based on the 7 ranking lists of eligible full-proposals provided by the IRP meeting as recommendation and the available national/regional budgets until exhaustion of public funds (EU contribution included). A CSC consensus meeting will be organised to finalise Stage 2 and to elaborate the ranking list of proposals recommended for funding.

All coordinators will receive feedback on the results of the evaluation process after both Stage 1 and Stage 2, including the Evaluation Summary Reports. The coordinators will be instructed to communicate the decisions to the consortium partners. The final decision of funding will be validated by each funding organisation.

The selection of new projects will also be promoted to reach a broad audience interested in AU/EU collaboration and in sustainable energy research and innovation community. The publication will

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include: list of selected projects with a description, the date of the award, the duration, amount and the legal name of the third party/parties and country of establishment.

8.5. Conflicts of interest (International Review Panel)

All necessary measures will be taken by the Call Secretariat to ensure the absence of conflict of interests (CoIs) of International Review Panel members with respect to the proposals they will have to assess.
The International Review Panel members (Reviewers) will be asked to formally declare that no CoIs exist at any time of their evaluation duty and will sign a non-disclosure agreement concerning all documents and the entire process. In case of breaching the rule of no CoI, the member will be discharged from participation in the International Review Panel.
The Call Secretariat will perform a first check of potential CoIs before sending the proposals to the reviewers. Reviewers are bound to indicate after receiving the proposals whether there is a CoI with any of the consortium partners of the proposals they have been asked to assess. Reviewers will sign a formal declaration that they do not participate in the Cofund Call nor have any conflicting interests regarding the consortium partners of the projects that they reviewed.

8.6. Redress procedure

Applicants can appeal against the evaluation outcome if they suspect a breach in the application of the evaluation and selection procedures. This redress procedure only covers the procedural aspects of the evaluation and/or eligibility checks, including the national eligibility checks. The redress will not call into question the scientific or technical judgement of appropriately qualified experts.

In this case they shall submit their appeal to the LEAP-SE Joint Call Secretariat (projects.leap-se[at]agencerecherche.fr) via email, up to 14 calendar days after the date of dispatch of eligibility results or the evaluation outcome emails by the call secretariat at the end of each stage (first or second step).

Admissibility of appeals:
For an appeal to be admissible the following conditions must be met:
- The appeal must be submitted by the Coordinator of the proposal to which the appeal relates,
- Only one appeal per proposal will be considered. If several appeals are received, the last one will be considered.
- The appeal must be submitted via email within the 14 calendar days deadline. The appeal must contain the following minimum information:
    - The name of the call for proposal;
    - The acronym of the proposal;
    - The title of the proposal;
    - A description of the alleged shortcomings of the evaluation procedure.

The appeal must demonstrate a procedural irregularity, factual error, misuse of powers, or a conflict of interests. Appeals that do not meet the above conditions, do not deal with the evaluation of a

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specific proposal or merely express disagreement with the result or the reasoning of the evaluation will not be considered suitable for redress.

All appeals will be treated in confidence and will not prejudice future applications.

9. Evaluation criteria

Pre-proposals and full-proposals will be evaluated based on three main evaluation criteria:

1. Scientific Excellence
2. Impact
3. Quality and Efficiency of the Implementation

1. SCIENTIFIC EXCELLENCE

- Clarity and pertinence of the objectives;
- Soundness of the concept, and credibility of the proposed methodology;
- Extent that the proposed work is beyond the state of the art, and demonstrates innovation potential (e.g. ground-breaking objectives, novel concepts and approaches, new products, services or business and organisational models);
- Gender perspective of research and development content;
- Appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge **(only for stage 2**)

2. IMPACT

- Proposal should consider societal needs, including one or more of the following aspects: market evaluation, business models for long-term sustainability, and solution deployment as well as the long-term impact on society.
- The extent to which the outputs of the project would contribute at the European and African level to expected impacts in line with the integrated strategy proposed in the Roadmap for a jointly funded AU-EU research & innovation partnership on climate change and sustainable energy (CCSE), especially the impact on renewable energy access in African countries and in Africa context (and not only the enhancement of renewable energy performances at global level);
- Relevance to the Multi Annual Road Map(s)
- Any substantial impacts that would enhance innovation capacity, create new market opportunities, strengthen competitiveness and growth of companies, address issues related to barriers/obstacles, and any framework conditions such as regulation, standards, public acceptance, workforce considerations, financing of follow-up steps, cooperation of other links in the value chain, or bring other important benefits for society;
- Quality of the proposed measures to exploit and disseminate the project results (including management of IPR), and to manage research data where relevant **(only for stage 2**);

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- Quality of the proposed measures to communicate the project activities to different target audiences **(only for stage 2**);
- Supporting the development of non-technological solutions to address environmental, social impact and health safety issues, within, if convenient, a life cycle analysis approach, or the development/deployment of tools, applications, and services enabling to respond population needs;
- When relevant, to what extent the project will contribute to a gender equal societal development.

3. QUALITY AND EFFICIENCY OF THE IMPLEMENTATION

- The effective collaboration and IP co-ownership between the partners in the consortium beyond sharing different tasks or working packages **(only for stage 2**);
- Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables **(only for stage 2**);
- Appropriateness of the management structures and procedures, including risk and innovation management **(only for stage 2**);
- Quality and complementarity of transnational activities by the participants and extent to which the consortium as whole brings together the necessary expertise;
- Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role **(only for stage 2**).
- Value for money: the budget requested regarding the work plan and the research objectives will be part of the evaluation notation

Evaluation scores will be awarded to the three main evaluation criteria and not for the different sub-criteria. Each main evaluation criterion is rated using the 0-5 scale (half-points are not allowed during the pre-assessment phase but are allowed during the panel meeting):

0 — The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information (unless the result of an 'obvious clerical error').

1— Poor: the criterion is inadequately addressed or there are serious inherent weaknesses.

2—Fair: the proposal broadly addresses the criterion but there are significant weaknesses.

3—Good: the proposal addresses the criterion well but with several shortcomings.

4—Very good: the proposal addresses the criterion very well but with a few number of shortcomings.

5—Excellent: the proposal successfully addresses all relevant aspects of the criterion; any shortcomings are minor.

The threshold for individual criterion is 3. The overall rating is the sum of the individual criterion scores (0-15).

For the evaluation of pre-proposals, the three main evaluation criteria will apply but with fewer sub-criteria (those indicated as "only for stage 2" will NOT be considered).

The overall threshold for pre-proposals will be 9.

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The coordinators will receive the results of the pre-proposal assessment including the peer-review reports and will be able to address the evaluators' questions in the full-proposals.

For the evaluation of full proposals, the overall threshold for full-proposals, applying to the sum of the three individual scores, will be 10. Proposals not meeting the thresholds will not be recommended for funding by the IRP.

10. Terms and conditions for grant agreement

10.1 Funding decisions

The grant preparation phase is carried out following the usual rules of each Funding Organisation. The final funding decision is formally taken by each Funding Organisation, according to its own procedure.

The final list of funded projects will be published on the LEAP-RE website.

Each beneficiary will have a separate funding contract/grant agreement according to national/regional regulations with the appropriate national/regional Funding Organisation. Changes in the composition of research consortia or in the budget cannot occur during the contract/letter of grant establishment phase.

The partners of the projects selected for funding must fix a common project start date, which will be the reference date for annual and final project reports. It is expected that grant preparation may take up to 5-6 months after the notification of results. The latest starting date is **1st May 2026**. All funded projects must be completed and reported back at least 6 months before the end of LEAP-SE (30th September 2030, unless a later date is notified to funding recipients during the projects implementation phase).

10.2 Consortium Agreement

The beneficiaries of a project selected for funding must sign a **Consortium Agreement** (CA) for cooperation, preferably before the official project start date but no later than six months after the official project start date, considering that some Funding Organisations cannot conclude the grant agreements without a signed CA. Each Funding Organisation will indicate when they expect the CA and how to submit it. A copy of the duly signed CA should be uploaded on the monitoring platform and to the Funding Organisations if required by national/regional regulations (see "National/Regional Requirements" available on the call page).

The purpose of the CA is to ensure a well-functioning research collaboration and protection of partners' rights and obligations. Moreover, the CA should provide for a decision-making process to deal with all relevant issues during the project lifetime. Models of CA are available (https://www.desca-agreement.eu/desca-model-consortium-agreement/). Nevertheless, the consortium is free to define its own CA subject to applicable legal and regulatory provisions. For guidance. The CA must address (as a minimum), the following points:

i. Common start date and duration of the research project;
ii. Organisation and management of the project;

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iii. Role, tasks, and responsibilities of each partner;
iv. The resources and funding;
v. Confidentiality and publishing;
vi. Intellectual Property Rights (if applicable);
vii. How the ten principles of Socially Responsible Licensing will be addressed (if applicable);
viii. Decision making within the consortium;
ix. Handling of internal disputes;
x. The liabilities of the research partners towards one another (including the handling of default of contract)

The national/regional Funding Organisations shall have the right to use documents, information and results submitted by the research partners and/or to use the information and results according to their national/regional rules on IPR.

10.3 Monitoring and reporting procedures

Acknowledgements

All funding recipients must ensure that all outcomes (publications, etc.) of transnational LEAP-SE-funded projects include proper acknowledgement of the LEAP-SE and the respective funding partner organisations:
"This project received funding from [name of funding organisations, or an acknowledgment as requested by your regional/national funding organisation] under the frame of the Horizon Europe Cofund LEAP-SE, (GA N° 101172838)".

Project monitoring and reporting

On behalf of the consortium, the coordinators of the funded projects will submit **annual and final reports** in English on the monitoring platform that contain information on scientific and administrative aspects. In addition, each beneficiary in a selected funded project must report to their respective national/regional Funding Organisation, according to their administrative funding rules. The beneficiaries are instructed to immediately contact the coordinator, the Funding Organisations involved and the JCS with any contingency that may arise.

The monitoring platform respects appropriate and secure use of material and data according to the application of common standards, following the guidelines on data management in Horizon Europe. The collected data will require a prior informed consent, will be protected and secured, to avoid a malevolent use of it.

The beneficiaries shall inform the JCS and the Funding Organisations of that project of any event that might affect the implementation of the project.

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Mandatory project events

Three project events are foreseen to foster exchange between all projects of this Cofund Call. A project kick-off, a mid-term event and a final event will be organised. Active participation of the funded projects is mandatory, e.g. by preparing short project presentations and/or posters.

Accordingly, travel expenses to attend, in person, the mid-term and the final events should be included in the proposal budget plans, if eligible for the Funding Organisations.

The mid-term scientific evaluation exercise of funded projects will be based on the annual project reports and presentations made by the coordinators at the mid-term event with the participation of the CSC members and invited stakeholders. As a result, the CSC may propose the continuation, the re-organisation or the suspension of the research project activities.

The final scientific evaluation of funded projects will be organised under the LEAP-SE Final Conference based on the final project reports and presentations made by the coordinators.

In addition, the beneficiaries are expected to participate and contribute to any communication activity initiated by LEAP-SE in the funding period and beyond.

11. Open Access and Open Data

Open science is a legal obligation under Horizon Europe, projects fund or cofunded by Horizon Europe need to comply to the rules of open science from Horizon Europe as well as the rules from their national funding organisations.

The optimisation of the impact of publicly-funded scientific research is of fundamental importance to improve conditions to i) minimise the time spent searching for information and accessing it, ii) be able to speed up scientific progress, and iii) make it easier to cooperate across and beyond the European Union.

Open Access requirements for all scientific publications and long form publications produced by the projects funded by the Cofund Call 2025 will support Green Open Access (immediate or delayed open access provided through self-archiving), or Gold Open Access (immediate open access provided by a publisher for the most important outputs). In the case of Green Open Access, partners will (as soon as possible and at the latest on publication) deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications. In addition, partners will ensure open access to the deposited publication and bibliographic metadata. Information should be provided about all the other scholarly objects, tools and instruments that are needed to validate the conclusions of the publication.

In case of any Intellectual Property Rights (IPR) issue for some project data and products the consortium may decide to go for Opt Out Option and cover this within the project consortium agreement. Projects can opt out before or after the signature of the consortium agreement (thereby freeing themselves from the associated obligations) on the following grounds:

- Incompatibility with the need for confidentiality in connection with security issues;
- Incompatibility with rules on protecting personal data;
- If there are other legitimate reasons not to provide open access to research data.

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Depending on the funding rules of the funding organisations, the costs related to the implementation of these provisions may be eligible for reimbursement during the grant.

The funded projects are requested to develop a Data Management Plan, according to the provisions of the HE MGA art. 17. In addition, partners will ensure open access to the deposited publication and bibliographic metadata.

A template of a DMP is available here: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/report/data-management-plan_he_en.docx

12. "Do no harm" principle

LEAP-SE will **not** support projects or carry out activities that make a significant harm to any of the six environmental objectives as defined in Article 17[9] on the establishment of a framework to facilitate sustainable investment (EU Taxonomy Regulation).

13. Requirements

As this call for proposals is cofunded by the European Union, all beneficiaries of the awarded projects who will receive funding, will have obligations regarding Article 12 "Conflict of Interest" of LEAP-SE Grant Agreement. The respective funding organisations will be responsible to monitor and ensure that the conditions are met. In addition, all participating funding organisations will ensure that the bodies mentioned in Article 25 of the LEAP-SE Grant Agreement (e.g. granting authority, OLAF, Court of Auditors (ECA), etc) can exercise their rights also towards the recipients.
The standard model of the Grant Agreement used for LEAP-SE is available here: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/agr-contr/general-mga_horizon-euratom_en.pdf

[9] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852

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APPENDIX I Areas for research

Multiannual Roadmaps (MARs) Summary

1. **Assessment of Renewable Energy Sources and integration of RES in sustainable energy scenarios** – Scenarios describing the potential role of renewable energy in Europe and Africa per technology, application type with the aim to support the RE industry to prioritize and contextualize target areas of RES deployment
2. **End-of-life and second-life management and environmental impact of RE components** - Map the component value chain, identification of key stakeholders & successful business models promote replicability scenarios of operational models and standard operating procedures in concerned regions
3. **Smart stand-alone systems (SAS)** - Promote the development of RE-SAS demonstrator(s) considering the diversity of potential local RE sources and the local effective environment
4. **Smart grid (different scale) for off grid application** - Development of new tools for optimizing capacity in planning and dispatching strategies based on people's needs with the aim to reduce the energy dependence on fossil fuel and increasing the share of RES use including electricity storage solutions such as batteries, hydrogen…
5. **Processes and appliances for productive uses (PRODUSE)** – Improvement and Promotion of wider use of PRODUSE appliances for Cold chain and thermal tools and equipment's (healthcare and agriculture - livestock, fisheries and farming)
6. **Innovative solutions for priority domestic uses (clean cooking and cold chain)** - Improving, managing and maintaining solar photovoltaic systems, cookstoves and cold chain components for clean cooking and food storage. Supporting interactions with policymaking to foster fast market uptake considering the macro socio-economic and gender impacts
7. **Production and utilization of green hydrogen** - Modelling activities - Green hydrogen production technologies - Green hydrogen utilization - Green hydrogen storage and transportation

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APPENDIX II Technology Readiness Level (Horizon Europe definition)

The Cofund Call applies the same definition of TRLs as in the HE program[10]

TRL 1 – Basic principles observed
TRL 2 – Technology concept formulated
TRL 3 – Experimental proof of concept
TRL 4 – Technology validated in lab
TRL 5 – Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 6 – Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 7 – System prototype demonstration in operational environment
TRL 8 – System complete and qualified
TRL 9 – Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies, or in space)

[10] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2023-2024/wp-13-general-annexes_horizon-2023-2024_en.pdf

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APPENDIX III Definitions

Beneficiary: is a legal entity, represented by a Lead Researcher, member of a consortium selected for funding that receive financial support from the respective national/regional Funding Organisation.
Call: Refers to the LEAP-SE Joint Call 2025 opening on January, 2025.
Call Steering Committee (CSC): Comprises representatives of the Funding Organisations that have committed national/regional funds to support the selected R&I projects. It supervises the whole Call procedure and agrees on the final list of proposals recommended for funding. It supervises the activities of the Joint Call Secretariat.
Consortium: Group of legal entities, each represented by a Lead Researcher, that are part of a joint collaborative transnational R&I project proposal submitted to the Call or a project selected for funding.
Coordinating partner: One partner of the consortium represented by a Lead Researcher, who will be responsible for the internal scientific management of the project, intellectual property rights management, project reporting towards the JCS and CSC and will represent the consortium externally.
Evaluation Criteria: criteria used by the expert members of the International Review Panel to evaluate the projects and note them. Evaluation criteria are those of Horizon Europe EC Programme.
Funding Organisations: are responsible for providing funding under relevant rules and regulations to the beneficiaries from the respective country/region.
International Review Panel (IRP): Panel of internationally independent recognised scientific experts responsible for the quality assessment of the submitted proposals. IRP members will not submit or participate in proposals within this Call and must sign declarations of confidentiality and of conflict of interest.
Joint Call Secretariat (JCS): Is responsible for the implementation of the Call and the follow-up phase until the funded projects and all reporting requirements have ended. All submitted proposals are collected by the JCS, which makes them available to the CSC and the reviewers of the International Review Panel. The JCS handles the communication with the applicants, reviewers, CSC and beneficiaries. ANR, NRF, STDF, MUR and MESRSI are JCS members,
Key Personnel: is a team member person of an applicant or a beneficiary.
Lead Researcher: is the main responsible person of a legal entity and is the contact point with the corresponding national/regional Funding Organisation and the JCS.
Partners: legal entities, each represented by a Lead Researcher within a department or institute from universities, research organisations, companies etc., forming a consortium.

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