



# **LEAP-RE**

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



The LEAP-RE project has received funding from the European Union's Horizon 2020 Research and Innovation Program under Grant Agreement 963530.



#### Consortium

#### Project coordinator:

- Fraunhofer Institute for Energy Economics and Energy System Technology **(Germany)** 

#### **Project partners**:

- Centre de Développement des Energies Renouvelables (**Algeria**)
- Helwan University (Egypt)
- $\forall \top \top$  (Finland)
- University of Kassel (Germany)
- Council for Scientific and Industrial Research (South Africa)
- University of Venda (South Africa) Further associated partners

## Aim of the project

The overall project objective is the development and demonstration of an open and sustainable AU–EU ecosystem including a well-proven energy system modelling chain. The ecosystem will enable European and African scientists and energy system planners to perform and optimize national scenario analysis on their own. The idea of open source should pave the way to a long-term collaboration between AU and EU countries leading to further joint work in energy system modelling.

#### **Relevance vs MARs**

The project addresses MAR 1 (Mapping joint research and innovation actions for next-step development of RES and integration of RES in sustainable energy scenarios) in particular, but it also generates open data valid for MAR 3 (Smart stand-alone systems) and MAR 4 (Smart grid (different scales) for off grid application). With respect to MAR 1, technological development must be understood understanding and related to energy scenarios at the local, country, and global levels.



#### Key challenges addressed by the project

- Reliability and validation of the collected input data required for the open source energy Ecosystem model
- 2. The task challenges of developing the target open source energy ecosystem model that will be adopted interactively by EU-AFRICAN countries to analyze their relevant energy systems
- 3. Capacity building commitments by the project's teamwork and the relevant dissemination and capacity building in the project's partners

#### **Expected results :**

#### Mid-term expected results (end 2023)

- Approach for an easy-to-use energy scenario modelling workflow for different scales
- Methods that enables the detection of wind turbine and PV system
- Methods to generate high resolution time series for wind power and PV

#### End of project expected results (2025)

- An easy-to-use energy scenario modelling workflow for different scales
- Open Source Code that enables RES system detection and time series generation
- Long-term open source and data strategy
- Case studies on different spatial scales
- Strengthening the RE long-term cooperation between Europe and Africa



# Expected outcomes in case of success of the project (2030)

- 1. Researchers from different AU-UE country widely use the energy system modelling environment
- 2. Medium and long-term sustainable energy scenarios at different levels help policy makers to identify the best paths for the energy transition
- 3. Contribution to a paved way to AU-EU clean and sustainable energy policy and renewable energy partnership

# Which main risks of failure during project implementation ?

- 1. Scinetific complexity (e.g. amount of data, Interfaces between modules of the ecosystem, complex local requirements)
- 2. Capacity building can not be done on-site due to external circumstances (permissions, uninterested trainee, CORONA Pandemics, rising travel costs)
- 3. New recruitment of staff: Shortage of skilled personnel in some countries



### Contribution of the project to AU – EU R&D cooperation

1. The open and modular modeling chain allows future collaboration and improvements not just from the consortium partners, but also from the wider energy and power system modeling community and hence allows to multiply the project sustainable cooperation. In addition, the ongoing collaboration between VTT and IRENA provides tools and support for developing countries worldwide pursuing higher shares of RES.

2. New business models in energy economy are often based on the interpretation of scenario analysis. Such interpretations allow ex-ante evaluation of business models with focus on external impacts like political decisions.

## Interest of Consortium members in participating in LEAP-RE clustering activities

Serveral OASES partner would be very glad to join any active cluster in RE fields and in conjunction with the Multi Annual Roadmaps (MAR) specially MAR1, MAR3, and MAR4.

Helwan University is already a member in the first Egyptian Renewable Energy Cluster Initiative (ERECI) funded by the international fund agent (RDI)