

SWITCH

(1ST JULY 2023 – 30TH JUNE 2025)



LEAP-RE

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

Pillar-1 project



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



Technische Hochschule Ingolstadt (THI), Institute of new Energy Systems (InES)

Project Partner



Women Engage for a Common Future e.V. (WECF)



University Ain Temouchent (UAT)



University of Adrar (UA)



Al Akhawayn University (AUI)



University Mohammed Premier (UMP)



Institut National des Postes et Télécommunications (INPT)



Aitown S.R.L. (AIT)

Associated Partner



Cooperative Ariaif Kissane, Morocco



Municipality of Bouda, Algeria

Aim of the project

SWITCH aims at developing an **innovative** and **holistic solution** to stabilize weak grids and **enhance security** of supply in rural 'end-of-line' communities in North Africa through integration of **smart RE systems**, Artificial Intelligence (AI)-driven **prediction methods** and optimal **Agri-PV** solutions.

Relevance vs MARs

SWITCH is rooted in **MAR 4**, as it develops a new tool for **optimizing** the **planning** and distribution capacities of rural grids through **smart RE systems** and storage solutions, thereby simultaneously **reducing the dependence** on fossil fuels and **stabilizing the grid**.

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Key challenges addressed by the project

- 1. Weak (power) infrastructure in 'end-of-line communities' in MAR and DZN*
 - 2. Significant increment of energy demand (population and economic growth) in MAR and DZN.*
- Isolated communities suffer the most from power outages

Expected results :

➤ Mid-term expected results (mid 2024)

- SWITCH has developed six work packages to address the challenges and achieve the project's objectives.*

➤ End of project expected results (2025)

- Open-access AI-driven decision support tool for smart operation for local stockholders*
- Policy/regulatory recommendations to create an enabling environment for the integration of smart mini-grids in North Africa*

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Expected outcomes

- 1. SWITCH increases energy access in rural areas and the use of REs, while giving access to affordable energies and maximizing the socio-economic impact.*
- 2. SWITCH contributes to behavioural change as far as energy usages are concerned*
- 3. SWITCH improves economic development and promotes both job creation and income generating activities in the local context*
- 4. SWITCH improves living conditions and social inclusive growth in the local context*

Which main risks could you face during the project implementation ?

- 1. Lack of interest in pilot communities & insufficient involvement of women and policy-makers.*
- 2. Damage to measurement equipment on-site*
- 3. Interruption in remote data collection from measurement equipment*
- 4. Delay in data acquisition causes insufficient time to develop AI tool*
- 5. Predictions of AI tool for outage (ANN) or load do not perform well*



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Contribution of the project to AU – EU R&D partnership

SWITCH aligns with the joint strategy formulated within the framework of the partnership on Climate Change and Sustainable Energy (CCSE)

- Pillar 1: Adapting to and mitigating climate change.
- Pillar 2: RE and energy efficiency.
- Cross-cutting issues: human capital development, capacity-building.
- ➔ *SWITCH benefits all parties, by strengthening research capabilities and extending networks while simultaneously fostering the cooperation between African and European institutions*

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

- *High interest within the consortium to link up with LEAP-RE projects with a similar thematic focus*
 - ❑ *Especially interested in activities rooted in MAR 1, MAR 3 and MAR 4.*

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