

MIDINA

(1ST JULY, 2023– JUNE, 2025)

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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

04 countries involved in MiDiNA (France, Algeria, Romania and Morocco)

Multidisciplinary partners: technical and socio economic aspects.

35 researchers from



Aim of the project

MiDiNA will propose a comprehensive study including technical, economic, and social aspects to evaluate how MGs can address **resiliency issues and to foster the RE-resources deployment in North Africa.**

Relevance vs MARs

#3: Smart stand-alone systems

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

- Sizing and control of a MG for isolated semi-aride community

- Assessing the scalability of MG solutions
- Long-term evaluation of the Socio-economic benefits

Key challenges addressed by the project

1. Taking into account the stochastic specificities of local weather and consumers' behaviour in order to propose optimal sizing solutions.
2. Increasing the power availability in off-grid operation under critical situations by the development of advanced robust control.
3. Assessing the energy flexibility of a cluster of MGs - Demand Side Management (DSM)-integration of new uses such as electric vehicles charging stations.
4. Investigating socio-economic prospective of large deployment of MG technologies on regional economic growth.

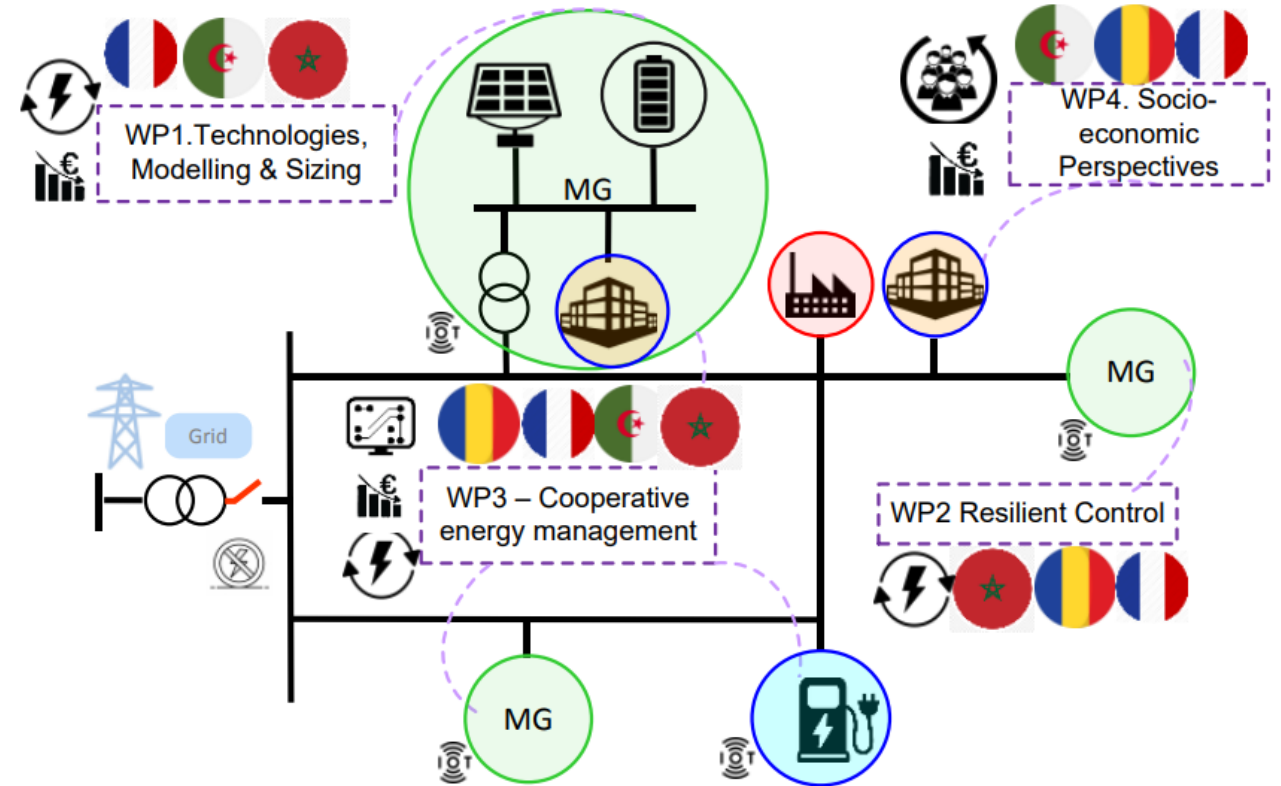


Figure 1: General overview of the MiDiNA project.

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Expected results :

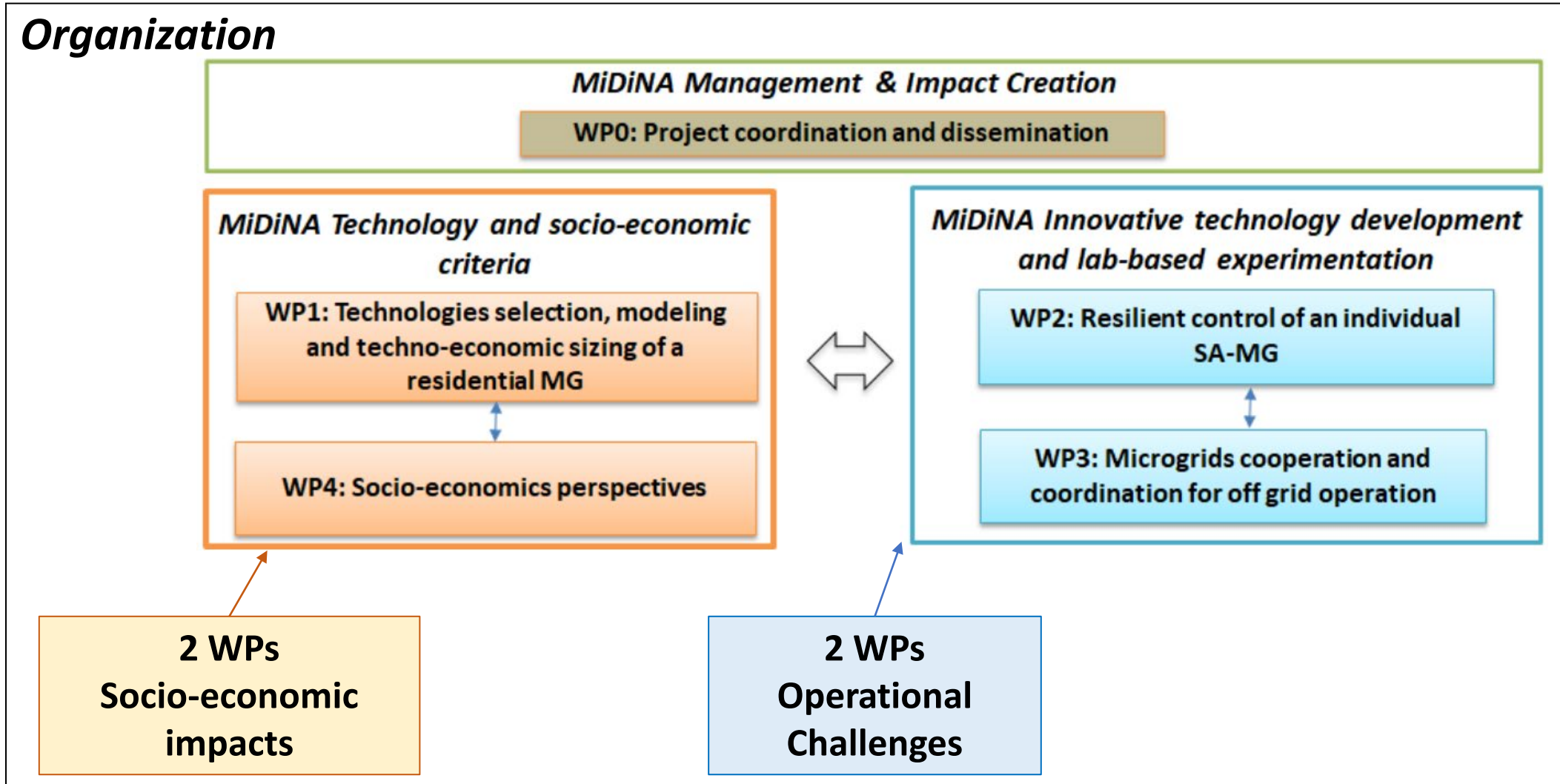
Mid-term expected results (mid 2024)

- *Communication actions toward public and specialized research groups*
- *Publications: 2 Journals and 3 Conferences*
- *First Workshop in France*

End of project expected results (2025)

- *Develop 3 expérimental microgrids (African partners)*
- *3 Journals and 3 Conferences*
- *Second Workshop in Romania*
- *Provide a report on economic growth prospective to Industrials and policy makers*

Organization



Expected outcomes

- 1. Reduce the Total Cost of Ownership (TCO) by >5% in comparison to predefined sizing solutions*
- 2. Increase of power availability in off-grid operation (>90-100%)*
- 3. Increase amount of energy flexibility (>30%) exchanged among microgrids for energy services delivery*
- 4. Regional economic growth will be increased by 0.5% due to employment, taxes and energy independence. CO2 emissions will be reduced at ratio 150 kt/MWp_PV in substitution to diesel-fired units.*

Which main risks could you face during the project implementation ?

- 1. Administrative delays in the activation of budgets allocated to partner universities → Potential delays in the acquisition of experimental test benches*
- 2. Not suitable quality of deliverables | **Low** / Setting-up of a reviewing process for all deliverables*
- 3. Delay in the delivery of local data | **Low – Medium**/ Risk limited by the possibility of using reference profiles.*
- 4. Difficulties to access to economic data | **Low –Medium**/ Possibility of use of annual African agencies reports.*

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

1. Contribute to SDG#7 - guarantee a universal access to reliable, sustainable, and modern energy services at an affordable cost.
2. Consortium building. - Stimulate the capacity of participating partners - Facilitate the transfer of knowledge
3. Development of non-technological solutions to address environmental, social and economic impact in response to local population needs

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

- Technologies, modelling and techno-economic sizing
- Resilient control of an individual SA-MG for a residential MG
- Microgrids cooperation and coordination for off-grid operation
- Socio-economic perspectives of RE deployment

THANK YOU

CONTACT US FOR MORE INFORMATION



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