



Energy System Modelling for Green Development of Africa

Grant Agreement N° 101118278

EMERGE – Stakeholder Identification



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Table of Contents

1	Identification of the target groups- quadruple helix.....	3
2	Stakeholder grouping based on the Three-Layer Approach.....	4
3	Criteria Definition for stakeholder engagement.....	5
4	Categorizing & Listing the stakeholders	7



1 Identification of the target groups- quadruple helix

To effectively address the objectives of the stakeholder engagement strategy, the overall methodology adopts a cross-cutting consultation process, which engages with different layers of stakeholders, ranging from technical experts to political/business representatives, to describe a broader picture of the engaged actors, which is aligned with the EMERGE Evaluation Plan (WP4). The EMERGE project's stakeholder engagement framework is based on the Quadruple Helix model, which brings together four primary stakeholder groups: Policy makers, Investors, Academia, and Civil Society. This model is designed to integrate perspectives from each of these groups, fostering a collaborative environment where all voices are valued and represented:

- **Policy makers:** Includes government, regulatory bodies, and local authorities which are essential for providing the legal, administrative, and financial support needed to implement sustainable energy solutions. They play a central role in establishing frameworks that enable renewable energy projects and can also introduce incentives or mandates that support green transitions. Their involvement ensures that energy solutions align with national policies and benefit from regulatory support, making projects more scalable and sustainable. Policy makers representatives should be engaged in workshops where they provide insights on policy needs and regional constraints.
- **Investors:** Industry partners, including private energy companies, technology providers, and SMEs, bring essential technical expertise and investment capacity to the project. They can contribute to cutting-edge technology, innovative solutions, and funding, making them key players in transforming energy models into practical applications. Their expertise helps ensure that the energy solutions developed are not only feasible but also market-oriented, cost-effective, and scalable. They can often provide technical data, participate in pilot implementations, and help refine models to ensure they meet market requirements. They may also collaborate on testing new technologies and sharing best practices for integrating renewable energy into local infrastructure.
- **Academia:** Academic institutions, researchers, and scientists contribute the analytical and technical knowledge required for rigorous energy modelling and data analysis. They are instrumental in developing and validating models, offering review and conducting analyses that inform project decisions. Through research partnerships, they can test hypotheses, gather data, and provide critical assessments that enhance the accuracy and effectiveness of energy solutions. They can be supportive in the development of the project energy modelling tools or analyse data from pilot projects. They also contribute by training future professionals, ensuring a steady flow of expertise to support energy transitions.
- **Civil Society:** including local communities, non-profit organizations, and advocacy groups, represent the public's needs and priorities, focusing on transparency, inclusivity, and equitable access to resources. They ensure that the energy models consider social dimensions, including community values, environmental justice, and equitable access to resources. Their participation encourages community ownership and trust, fostering long-term engagement and alignment with local interests. They will participate in surveys, contribute to workshops, and provide feedback on project impacts.

Each of these categories are engaged by means of different activities in the EMERGE projects. Thus, their type of contribution to the project is set according to their different degrees of awareness. The number of stakeholders and the level of engagement in the project activities varies according to the closeness to the project.



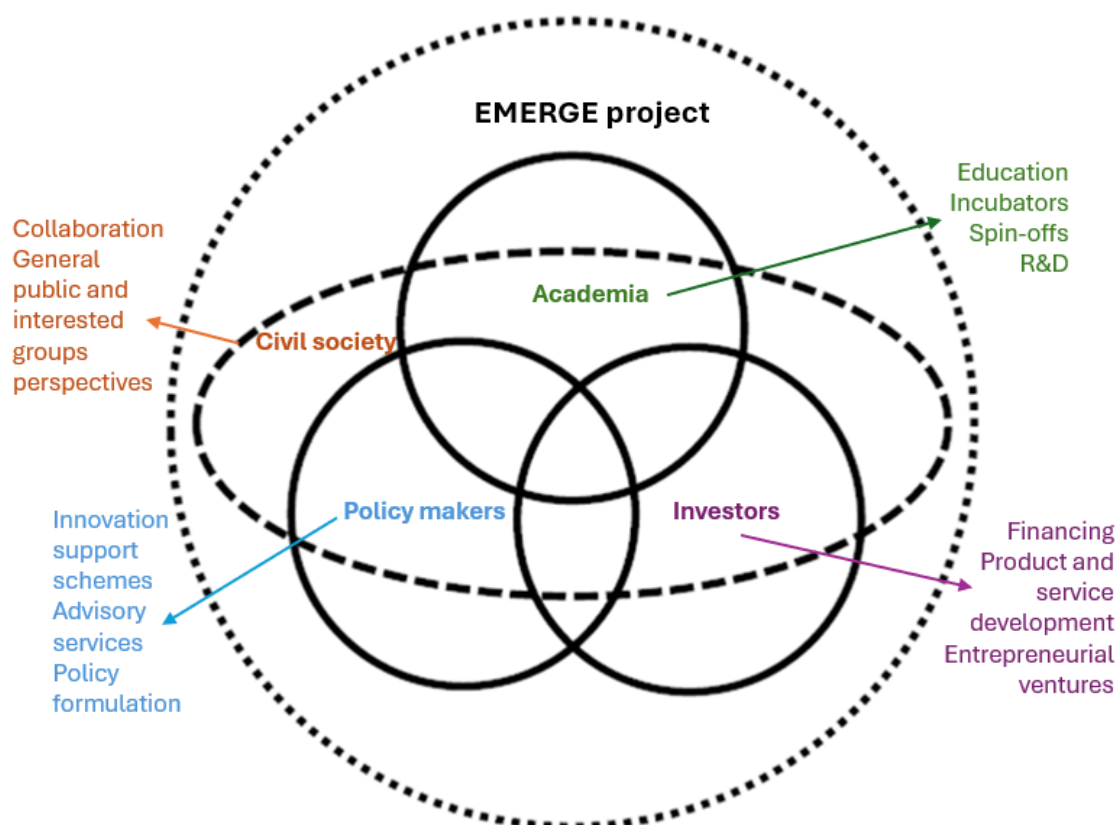


Figure 1 EMERGE Quadruple Helix stakeholder engagement

2 Stakeholder grouping based on the Three-Layer Approach

Three-Layer approach should be regarded as complementary to the Quadruple Helix framework, since a stakeholder's position within the engagement plan is determined both by their representative role (Quadruple Helix) and by the nature of their involvement (Three-Layer model). This dual categorisation allows the EMERGE project to design engagement activities that are both inclusive and strategically targeted—adapting formats, content and interaction frequency to the specific profiles and roles of stakeholders. Moreover, it supports the development of a more dynamic stakeholder map, enabling actors to move between layers as their level of engagement evolves throughout the project lifecycle.

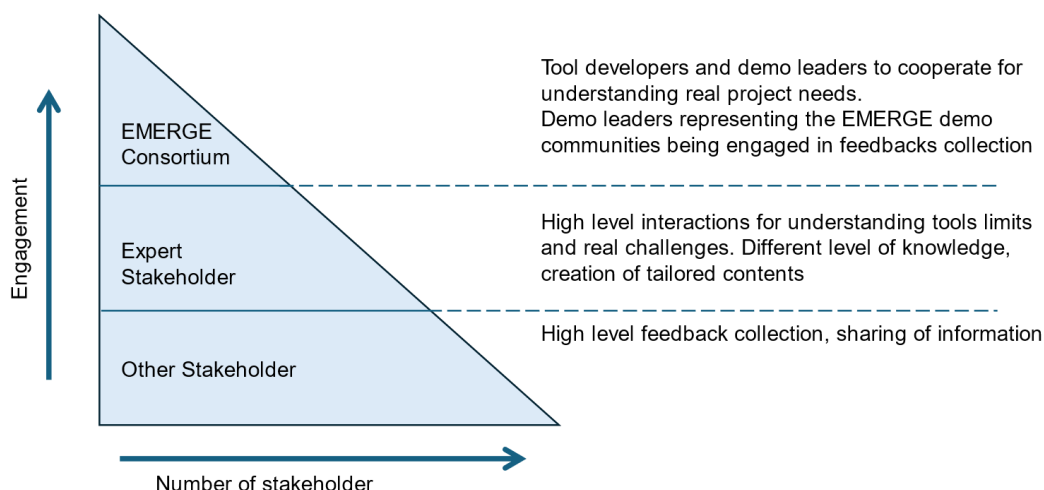


Figure 2 Three-Layer approach

- **Consortium members** are inherently familiar with the objectives, scope and methodologies of the project, as they are directly involved in its development and implementation. Importantly, given the participation of large and well-established companies within the consortium, the engagement extends beyond the core project team to include additional personnel within these organisations who may not be directly assigned to the project but can nonetheless provide valuable expertise and operational insights. This broadens the pool of knowledge and ensures a high level of technical competence and an in-depth understanding of the project's strategic direction.
- **Expert stakeholders** are individuals and organisations with advanced expertise in the fields of energy systems and/or modelling tools. Their in-depth technical knowledge makes them key contributors, particularly in activities that require a high degree of specialisation, such as the development and refinement of the project's modelling tools. Their feedback is critical for ensuring technical robustness, optimising model design and validating methodological approaches. Engagement with this group allows the project to incorporate state-of-the-art practices and maintain alignment with the latest industry and academic standards.
- **Other Stakeholders:** This category includes stakeholders with moderate to limited experience in energy-related topics. Despite their lower technical expertise, these stakeholders offer valuable practical insights, particularly concerning the usability, relevance and real-world applicability of the project's outcomes. Their contributions are essential for identifying gaps, enhancing the clarity of the tools developed and ensuring that the project remains accessible and meaningful for a broad range of end users. Their feedback helps to balance technical ambition with practical utility.

3 Criteria Definition for stakeholder engagement

To ensure that the EMERGE project's engagement process is impactful and aligned with the project's objectives, a set of criteria has been established for identifying and involving stakeholders. This criteria-based approach prioritizes relevance, influence, expertise, and commitment, ensuring that engaged stakeholders can meaningfully contribute to the project's energy modelling efforts. By setting clear guidelines, EMERGE ensures a strategic selection of stakeholders that not only represent key sectors but also actively support the project's goals. The criteria are presented in table below.

Table 1 Stakeholder Engagement Criteria

Criteria	Description	Examples
Relevance to Project Objectives	Alignment with sustainable energy and project goals	Regional governments, energy focused NGOs
Influence and Capacity	Ability to impact policy or project implementation	National energy agencies, business leaders
Technical Expertise	Knowledge in energy modelling, policy, or technology	Energy researchers, technology developers
Commitment	Willingness to participate consistently throughout the project	Community leaders, academic institutions
Geographic & Cultural Relevance	Regional representation and cultural understanding	Local NGOs, community organizations
Community Advocacy	Capacity for mobilizing public support and promoting equitable access	Grassroots organizations, public interest groups

Stakeholders are selected based on their alignment with EMERGE's goals, specifically in areas such as energy system modelling, sustainable development, and social equity. This criterion ensures that stakeholders possess a vested interest in energy transition topics relevant to the project's scope. By choosing groups and individuals directly impacted by or contributing to sustainable energy, EMERGE builds a coalition of participants with a genuine commitment to the project's success.

Priority is given to stakeholders with the ability to influence policy, public opinion, or project implementation, as well as those who bring significant resources or networks. Engaging influential stakeholders enables EMERGE to leverage their networks and resources, amplifying the project's reach and impact. These stakeholders, whether in government or businesses, have the power to facilitate regulatory support, mobilize funding, or scale solutions.

On the technical expertise criteria stakeholders are chosen based on their expertise in areas essential to energy modelling, renewable technology, policy development, and community organization. This criterion ensures that EMERGE benefits from cutting-edge technical knowledge, methodological review, and sector-specific insights. Expert stakeholders can contribute significantly to the quality and accuracy of energy models, data collection, and analysis.

Engagement efforts prioritize stakeholders with a demonstrated willingness to contribute consistently throughout the project's duration and can create a long-term participation commitment. This enables project to develop a stable and productive collaboration environment. Committed stakeholders are more likely to provide continuous feedback, adapt to project needs, and contribute to iterative improvements in the engagement process.

Stakeholders should represent the cultural and geographic diversity within African regions targeted by the EMERGE project. Selecting stakeholders with region-specific knowledge and cultural understanding ensures that project outcomes are relevant and adaptable to local contexts. This criterion is essential for ensuring that the solutions are respectful of, and responsive to, cultural practices, language differences, and regional environmental factors.

Engagement also prioritizes stakeholders capable of mobilizing community support and advocating for equitable energy access. Community advocates, especially within civil society,



help build trust and encourage local participation, ensuring the project's social acceptance and long-term sustainability.

For capacity-building and workshop activities, different criteria may apply, with a focus on understanding the activities, ease of participation, and the degree of engagement throughout the process.

4 Categorizing & Listing the stakeholders

The first step in the stakeholder engagement process involved categorizing the stakeholders to better understand their roles, interests, and potential contributions to the project. Stakeholders were mapped and classified into several categories based on their relationship to the project, including Academia & Research, Policy makers, Investors and Civil society. This categorization was crucial for tailoring the engagement strategy to address the specific needs and interests of each group, ensuring that their perspectives are adequately represented in the project.

Thanks to the overlap between the two grouping methods (Quadruple Helix and Three-Layer methods), it has been possible to effectively address stakeholder needs and assess their potential impact on the project. Each stakeholder can thus be accurately positioned within the following stakeholder groups matrix.

Table 2 The EMERGE Stakeholder groups matrix

 EMERGE Stakeholder Matrix	Academia/RTO	Policy Makers	Investors	Civil Society
Project Consortium	High Interest / High Influence	High Interest / High Influence	High Interest / High Influence	Medium Interest / Medium Influence
Expert Stakeholders	High Interest / Medium Influence	Medium Interest / High Influence	High Interest / Medium Influence	Medium Interest / Low Influence
Other Stakeholders	Medium Interest / Low Influence	Medium Interest / Medium Influence	Low Interest / Low Influence	High Interest / Medium Influence

Figures 1, 2, and 3 present the categorization of the stakeholders from pilot sites. Academia and research institutions provide the technical expertise and analytical skills necessary for developing and validating energy models. Civil society represents community interests, ensuring that the models address social and environmental concerns. Policymakers are instrumental in integrating the models into national energy strategies and policies, while investors provide the financial resources needed for implementing and scaling energy solutions.

Mozambique Site

<u>Academia & Research</u>	<u>Policy Makers</u>	<u>Investors</u>	<u>Civil Society</u>
Universidade do Save Instituto Politécnico do Songo	National Directorate of Energy / Ministry of Natural Resources and Energy (DNE) National Directorate of Planning and Cooperation (MIREME) Energy Regulatory Authority (ARENE) Ministry of Economies and Finance (MEF) Electricidade de Moçambique (EDM) National Energy Fund (FUNAE)	The World Bank (WB) The European Union (EU) African Development Bank (AfDB) Confederação das Associações Económica de Moçambique (CTA)	Associação de Energias Renováveis em Moçambique (AMER) KULIMA – integrated Socio-Economic dev. Coordinamento delle Organizzazioni per il Servizio Volontario (COSV) Confederação das Associações Económica de Moçambique (CTA) Netherlands Development Organization (SNV) HELPCODE LVIA

Figure 3 Stakeholder identification and categorization in Mozambique site

Morocco Site

<u>Academia & Research</u>	<u>Policy Makers</u>	<u>Investors</u>	<u>Civil Society</u>
University Mohammed I (UMP)	Ministry of Energy Transition and Sustainable Development National office of Water and Electricity (ONEE) Solar Energy and New Energies Research Institute (IRESEN) Masen - Group Multiservice regional companies	CDG Government National office of Water and Electricity (ONEE) Solar Energy and New Energies Research Institute (IRESEN) Banks	Municipality of Oujda Oriental Regional Council

Figure 4 Stakeholder identification and categorization in Morocco site

Niger River Basin Site

<u>Academia & Research</u>	<u>Policy Makers</u>	<u>Investors</u>	<u>Civil Society</u>
Faculty of Science and Technology (FST)	The National Energy Directorate of Mali (DNE)	African Development Bank (AfDB)	Local Water Committee (CLE)
École Nationale d'Ingenieurs Abderhamane Baba Touré (ENI-ABT)	The Malian Agency for the Development of Domestic Energy and Rural Electrification (AMADER)	The World Bank (WB)	The Local Chamber of Agriculture (CLA)
IPR-IFRA	The National Agency for Biofuels Development (ANADEB)	The European Union (EU)	Permanent Assembly of the Chambers of Agriculture of Mali (APCAM)
	Renewable Energies Agency (AEER)	BAD	The National Coordination of Users of Natural Resources in the Niger Basin in Mali (CNU-Mali)
	National Commission for Renewable Energies (CER)	GIZ	
	The General Directorate of Water and Forests (DGEF)	UNDP	
	The Niger River Basin Agency (ABFN)	BIDC	
	The National Hydraulic Directorate (DNH)	BOAD	
	Electricity and Water Regulation Commission (CREE)	AFD	
	AEDD	USAID	
		UEMOA	
		UA	
		ECOWAS	

Figure 5 Stakeholder identification and categorization in Niger River Basin site

Tables 3 and 4 list the different stakeholders, separating African and European stakeholders:

Table 3 List of African stakeholders

#	Country	Stakeholder	Category	Expert (Y/N)
1	Mozambique	Universidade do Save	Academia	Y
2	Mozambique	Instituto Politécnico do Songo	Academia	Y
3	Mozambique	National Directorate of Energy / Ministry of Natural Resource and Energy (DNE / MIREME)	Policy makers	Y
4	Mozambique	National Directorate of Planning and Cooperation (DPC / MIREME)	Policy makers	N
5	Mozambique	Energy Regulatory Authority (ARENE)	Policy makers	Y
6	Mozambique	Ministry of Economics and Finance (MEF)	Policy makers	N



7	Mozambique	Electricidade de Moçambique (EDM)	Policy makers	Y
8	Mozambique	National Energy Fund (FUNAE)	Policy makers	Y
9	Mozambique	The World Bank (WB)	Investors	N
10	Mozambique	The European Union (EU)	Investors	N
11	Mozambique	African Development Bank (AfDB)	Investors	N
12	Mozambique	Confederação das Associações Económicas de Moçambique (CTA)	Investors	N
13	Mozambique	Associação de Energias Renováveis em Moçambique (AMER)	Civil society	Y
14	Mozambique	KULIMA	Civil society	N
15	Mozambique	Coordinamento delle Organizzazioni per il Servizio Volontario (COSV)	Civil society	N
16	Mozambique	Netherlands Development Organization (SNV)	Civil society	N
17	Mozambique	HELPCODE	Civil society	N
18	Mozambique	LVIA	Civil society	N
19	Morocco	Ministry of Energy Transition and Sustainable Development	Policy makers	Y
20	Morocco	National office of Water and Electricity ONEE	Policy makers	Y
21	Morocco	Solar Energy and New Energies Research Institute - IRESEN	Policy makers	Y
22	Morocco	Masen - Group	Policy makers	Y
23	Morocco	Ecole Supérieure de Technologie Oujda	Academia	Y
24	Morocco	Institut de Formation aux Métiers des Énergies Renouvelables & de l'Efficacité Énergétique_Oujda	Academia	Y
25	Morocco	Government	Policy makers	N
27	Morocco	Municipality of Oujda	Civil society	N
28	Morocco	Oriental Regional Council	Civil society	N
29	Mali	Faculty of Science and Technology (FST)	Academia	Y
30	Mali	Ecole Nationale d'Ingénieurs Abderhamane Baba Touré (ENI-ABT)	Academia	Y
31	Mali	IPR-IFRA	Academia	Y
32	Mali	The National Energy Directorate of Mali (DNE)	Policy makers	Y
33	Mali	Energie du Mali - EDM	Technical - Policy	Y
34	Mali	The Malian Agency for the Development of Domestic Energy and Rural Electrification (AMADER)	Policy makers	Y
35	Mali	The National Agency for Biofuels Development (ANADEB)	Policy makers	Y



36	Mali	Renewable Energies Agency (AER)	Policy makers	Y
37	Mali	National Commission for Renewable Energies (CER)	Policy makers	Y
38	Mali	The General Directorate of Water and Forests (DGEF)	Policy makers	N
39	Mali	The Niger River Basin Agency (ABFN)	Policy makers	N
40	Mali	The National Hydraulic Directorate (DNH)	Policy makers	N
41	Mali	Electricity and Water Regulation Commission (CREE)	Policy makers	Y
42	Mali	AEDD	Policy makers	Y
44	Mali	African Development Bank (AfDB)	Investors	N
45	Mali	EU	Investors	N
46	Mali	BAD	Investors	N
47	Mali	GIZ	Investors	N
48	Mali	World Bank	Investors	N
49	Mali	UNDP	Investors	N
50	Mali	BIDC	Investors	N
51	Mali	BOAD	Investors	N
52	Mali	AFD	Investors	N
53	Mali	USAID	Investors	N
54	Mali	UEMOA	Investors	N
55	Mali	UA	Investors	N
56	Mali	ECOWAS	Investors	N
57	Mali	Local Water Committee (CLE)	Civil society	N
58	Mali	The local Chamber of Agriculture (CLA)	Civil society	N
59	Mali	Permanent Assembly of the Chambers of Agriculture of Mali (APCAM)	Civil society	N

Table 4 List of European stakeholders

#	Country	Stakeholder	Category	Expert (Y/N)
1	Austria	Graz Energy Agency	Civil society	Y
2	Austria	Höhere Technische Lehranstalt (HTL) Kapfenberg	Civil society	Y
3	Austria	Sattler AG – Technical textiles and environmental technology company	Investors	N
4	Austria	Strateco OG – Consulting for strategy and sustainability (Austria)	Civil society	N
5	Austria	Graz University of Technology (Technische Universität Graz)	Civil society	Y
6	Austria	Vienna University of Technology (Technische Universität Wien)	Civil society	Y
7	Austria	University of Graz (Karl-Franzens-Universität Graz)	Civil society	Y
8	Belgium	European Commission	Policy-makers	N
9	Bosnia Herzegovina	Public Utility Company Elektroprivreda Bosne i Hercegovine d.d. Sarajevo	Investors	N



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10	Croatia	HEP Proizvodnja d.o.o. – Hrvatska Elektroprivreda (Croatia)	Investors	N
11	France	École des Mines de Paris – Université PSL (Paris Sciences et Lettres)	Civil society	N
12	Italy	Università della Calabria	Civil society	N
13	North Macedonia	Ss. Cyril and Methodius University in Skopje	Civil society	Y
14	Norway	Stiftelsen for industriell og teknisk forskning – SINTEF (Norway)	Civil society	Y
15	Portugal	Laboratório Nacional de Energia e Geologia, I.P.	Civil society	Y
16	Switzerland	Swiss Federal Laboratories for Materials Science and Technology	Civil society	N

