menalinks

27 April 2026

MENALINKS Vision Report Tunisia

Battery Energy Storage Systems (BESS)

menalinks
Enabling new energy

menalinks.org
info@menalinks.org
menalinks.org/newsletter
bit.ly/menalinks-linkedin

Supported by:

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

based on a decision of
the German Bundestag

IKI INTERNATIONAL CLIMATE INITIATIVE

The MENALINKS programme is led by Guidehouse Germany GmbH. This project is supported by the International Climate Initiative (IKI) of the Federal Government of Germany. Within the Federal Government, the IKI is anchored in the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN). Selected individual projects are also the responsibility of the Federal Foreign Office (AA).

Authors

Lead authors

Diego Bietenholz — Guidehouse Germany GmbH
Kathrin Gretener — Guidehouse Germany GmbH

Contributing authors

Mohamed Nejib Hellal — ALCOR

Reviewers

Dr. Karoline Steinbacher — Guidehouse Germany GmbH
Rafik Missaoui — ALCOR

Contact

info@menalinks.org

kgretener@guidehouse.com

Disclaimer:

The information and views set out in this report are those of the authors and do not necessarily reflect the official opinion of the International Climate Initiative (IKI) or the Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN).

The authors prepared this publication for the sole use of the MENALINKS programme. The work presented in this publication represents the authors' professional judgement based on the information available at the time this report was prepared. MENALINKS consortium partners are not responsible for any third party's use of, or reliance upon, this publication, nor for any decisions based on the report. Readers of the report are advised that they assume all liabilities incurred by them or by third parties due to their reliance on the report or on the data, information, findings, and opinions contained therein. The views expressed in this publication are those of the authors and do not necessarily represent those of the governments of Tunisia or Germany.
Guidehouse is not responsible for any images or text used by partners and subcontractors in the distribution of MENALINKS materials.

Tunisia's National Energy Vision 2050

Tunisia has anchored the energy transition at the core of its national development pathway, aiming to reinforce energy security, reduce dependence on imported fossil fuels, and advance the decarbonisation of its economy. The country seeks to modernise its power system, strengthen industrial competitiveness, and expand low carbon technologies to build a more resilient and sustainable energy future.

To achieve these goals, Tunisia pursues an ambitious strategy of reducing primary energy consumption by 30 % by 2030 and significantly expanding renewable energy deployment. The updated national energy strategy and the Tunisian Solar Plan foresee raising the share of renewables in electricity production from around 5 % today to 35 % by 2030 and 50 % by 2035, corresponding to 4.85 GW and 8.35 GW of installed capacity respectively.[1] This expansion is driven by a rapidly growing pipeline of new solar and wind projects and supported by ongoing grid modernisation, such as major 400 kV line reinforcements, smart meter rollout by 2030, and the planned 600 MW Tabarka pumped hydro facility coming online by 2035. In parallel, Tunisia's enhanced NDC commits to a 41–45 % reduction in carbon intensity by 2030 compared to 2010.[2] As renewable penetration rises, system flexibility becomes a critical pillar of the transition.

Battery Energy Storage Systems in Tunisia as a strategic enabler for renewable energy integration

Tunisia's focus on **battery energy storage systems (BESS)** is directly relevant to its national energy transition, as rising shares of variable renewables already challenge the balance of supply and demand and strain grid stability. The grid is facing increasing frequency and voltage fluctuations as renewable penetration grows, making system-friendly flexibility solutions indispensable. Recent modelling estimates that Tunisia will require around **500 MW of BESS by 2030**, increasing to 600 MW by 2035 and nearly 3 GW by 2050, underscoring the need for fast-responding flexibility solutions.[3] BESS is therefore a strategic focus area in the context of the MENALINKS programme selected by the Tunisian Ministry of Industry, Mining and Energy (MIME) to enable a stable, decarbonised power system. Early initiatives and pilot projects illustrate Tunisia's first steps toward practical deployment.

Stakeholder landscape and vision

The main actors of the Tunisian energy transition and their respective roles are outlined in the table below. As the entities shape the political, regulatory, operational, and technological energy landscape, their coordinated efforts are indispensable for transforming Tunisia's vision into reality.

---

1 Ministry of Industry, Mining and Energy, "Stratégie Energétique de la Tunisie à l'horizon 2023" April 2023, https://www.energiemines.gov.tn/fileadmin/docs-u1/synth%C3%A8se_strat%C3%A9gie_2035.pdf.

2 Ministry of Environment, Engagements et priorités de la Tunisie en vertu de l'Accord de Paris sur le climat, https://www.environnement.gov.tn/tunisie-environnement/les-changements-climatiques/engagements-et-priorites-de-la-tunisie-en-vertu-de-laccord-de-paris-sur-le-climat (accessed in December 2025)

3 Non-public study by Tractebel « Étude stratégique sur la capacité de stockage d'énergie électrique en Tunisie » 2025, numbers communicated to MENALINKS by Tunisian stakeholders, on February 6, 2025.

Key stakeholders	Role and responsibilities
Ministry of Industry, Mining and Energy (MIME)	MIME is the political lead institution overseeing Tunisia's long-term energy strategy, including renewable expansion, energy security, and regulatory modernisation. It provides national direction on the energy transition, sets strategic priorities, and mandates MENALINKS' focus on BESS as a key enabler for integrating higher shares of solar and wind into the grid. MIME's representatives have repeatedly emphasised the need for storage to stabilise Tunisia's future power system and its alignment with national decarbonisation goals.
Tunisian Company of Electricity and Gas (STEG)	STEG is the central operator of Tunisia's electricity system and manages almost the entire national generation and grid infrastructure. As the institution most directly confronted with rising variability from solar and wind, STEG sees BESS as essential for managing frequency, voltage, and system imbalances. Through MENALINKS consultations, STEG highlighted concrete needs which reflect its vision of a more flexible and reliable power system.
National Agency for Energy Conservation (ANME)	ANME leads Tunisia's agenda on energy efficiency, renewable uptake, and demand-side programs. As a key institution for enabling sector coupling across buildings, industry, and distributed generation, ANME supports the deployment of flexibility solutions that reduce system stress and accelerate renewables integration. In the context of MENALINKS, ANME's vision stresses the importance of linking end-use sectors with smarter consumption patterns and storage options to achieve national efficiency and climate targets.

„Tunisia reaffirms its commitment to modernising its electricity system in order to meet the growing challenges of energy security, production cost control and the transition to a more sustainable energy model. In this regard, battery energy storage systems (BESS) are a strategic technological lever for improving grid flexibility, strengthening the stability of the electricity system and optimising the balance between electricity supply and demand. Through the gradual development of these solutions, Tunisia aims to strengthen the performance and resilience of its electricity system, while promoting the optimal integration of renewable energies and the success of the national energy transition."

Abdelhamid Khalfallah, Director of the Energy Transition, Ministry of Industry, Mining and Energy (MIME)

State of BESS in Tunisia

Tunisia is in the early stages of accelerating BESS deployment, with important progress already achieved and further opportunities ahead across regulatory, technical, financial, and knowledge dimensions. Recent MENALINKS consultations with the MIME, STEG and ANME confirm strong national commitment to advancing BESS as a key enabler of renewable integration, while also highlighting areas where coordinated development can further strengthen the enabling environment.

Regulatory status: Several essential regulatory elements for BESS are currently being shaped. Stakeholders note that market rules for procuring and remunerating storage services, unified technical standards, and a dedicated BESS grid code framework are still under development. The BESS pilot project planned by STEG with the financial support of the European Bank of Reconstruction and Development (EBRD) in Tataouine is particularly valuable in identifying practical needs.[4] Stakeholders also pointed to the importance of defining ancillary services, clarifying roles in activation and dispatch, and introducing transparent contractual mechanisms such as auctions or remuneration schemes.

Technical status: Technical assessments by MENALINKS and recent studies show increasing stress on parts of the Tunisian grid due to rising solar and wind shares, including frequency deviations, congestion between southern production zones and northern demand centres, and reduced inertia as thermal units operate less frequently.[5] BESS can help address these challenges by providing fast frequency response, voltage support, congestion relief, and grid forming capabilities. To enable this safely and efficiently, formal technical standards, testing procedures, and interoperability requirements still need to be established.

Financial status: Tunisia has not yet defined revenue streams for storage services, incentive schemes for distributed BESS, or clear guidance on business models for public and private actors. While BESS can already support improved self-consumption for independent PV generation, the business case remains challenging in the absence of targeted incentives. Updating the remuneration mechanisms will be important to enable larger scale deployment.

MENALINKS support: from vision to action

MENALINKS is working closely with MIME, STEG, and ANME to create a strong enabling environment for battery energy storage systems in Tunisia, building on national priorities and supporting the country's energy transition goals. The programme began in September 2024 by carrying out a detailed needs assessment and gap analysis (covering regulatory, technical, financial, and capacity aspects) to identify the most pressing challenges and opportunities for advancing BESS and to inform improvements to the broader framework conditions needed for higher renewable energy integration.

On the **technical side**, MENALINKS works with Tunisian counterparts to better understand system needs and potential BESS applications, thereby contributing to more robust technical planning for future renewable uptake. This includes a comprehensive benchmarking study on centralised BESS use cases, analysis of grid constraints, and ad hoc technical assessments requested by stakeholders. MENALINKS also supports technical knowledge exchange through study trips, targeted trainings, and interregional dialogue, including exchanges at the PtX Summit in Marrakech, Morocco, in October 2025, all of which help strengthen national capabilities for planning and operating a modern, BESS ready power system. Upcoming work will deepen this support through direct input to Tunisia's future BESS grid code provisions, the development of a national BESS roadmap and peer to peer exchanges with regulators from other countries.

In terms of **regulatory support**, MENALINKS has mapped the current legal and regulatory framework, identifying gaps related to definitions, market rules, connection procedures, and operational responsibilities. This work informs the development of aligned regulatory options and

---

[4] European Bank for Reconstruction and Development (EBRD), " General Procurement Notice: Tataouine BESS and Solar" , January 30th of 2026, https://ecepp.ebrd.com/delta/viewNotice.html?displayNoticeId=41623501

[5] Japan International Cooperation Agency (JICA), "Collecte Des Données Enquête Sur Le Secteur Électrique En Tunisie," March 2022, https://openjicareport.jica.go.jp/pdf/12342291.pdf.

international benchmarks that Tunisia can draw from when shaping its framework, supporting more predictable and transparent conditions for BESS and renewables deployment.

In the area of **financing and economics**, MENALINKS is advancing the understanding of viable BESS business models in Tunisia. This includes business case analysis for decentralised BESS applications and new workstreams that will extend these assessments to centralised utility scale projects. By exploring Tunisia specific economic models and investment requirements, MENALINKS helps create a clearer picture of future revenue streams and supports the development of remuneration mechanisms that improve bankability. This is an essential step for mobilising investment and accelerating the integration of renewables supported BESS.

menalinks