

From fossil flows to renewable cooperation tripling renewables in the Med

Deployment of renewable power is accelerating across the Mediterranean, with the region on track to double renewable capacity by 2030 – but falling short of the TeraMed Initiative's objective of reaching 1 TW, highlighting the need to move faster, together.

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About

Amid a renewed wave of EU-Mediterranean cooperation, particularly around clean energy, this report examines current renewable power capacities across the region and provides an outlook to 2030 based on national targets. Country-level analyses compare projected additions to historical deployment rates to assess feasibility, while at the regional level, these targets are assessed against the TeraMed Initiative's 1 TW renewable energy ambition for 2030.

For the purposes of this report, the Mediterranean region covers all countries that have borders along the Mediterranean Sea. This includes four Southern EU Member States (France, Spain, Italy and Greece), five North African countries (Morocco, Algeria, Tunisia, Libya and Egypt), Türkiye, and the remaining Mediterranean countries grouped under the category "Other" (Albania, Bosnia Herzegovina, Croatia, Cyprus, Malta, Montenegro, North Macedonia and Slovenia).

Highlights 626 GW x2

Expected renewable power capacity in the Mediterranean by 2030 Renewables deployment rate from 2023 to 2030 is double that of the previous seven year period 54 GW/yr

To reach 1 TW renewables by 2030, an additional 54 GW per year needs to be deployed over and above planned capacity expansion

Key Findings

The Mediterranean's renewable future

The TeraMed initiative, with the goal of achieving 1 TW of renewable energy capacity in the Mediterranean region by 2030, stands out among the renewed wave of EU-Mediterranean cooperation. By shifting from a one-way resource flow to a more balanced regional collaboration, it presents opportunities to reshape energy dynamics in the region, bringing benefits of energy security and economic growth to both sides of the shore.

In light of the objectives of the TeraMed campaign, it is pertinent to explore existing renewable capacity and generation in the Mediterranean region and the 2030 outlook based on current plans.

O1 Renewable capacity already exceeds that of fossil fuels

As of 2023, installed renewable power capacity (315 GW) surpassed fossil fuels (293 GW). Wind and solar dominate, with 88 GW and 107 GW, respectively. Hydropower contributes 108 GW, while nuclear capacity (69 GW) remains concentrated in Northern Mediterranean countries.

O2 Renewable capacity is forecast to double by 2030

National energy plans demonstrate a huge push on renewable expansion, with the region planning to double its total renewable capacity from 315 GW to 626 GW by 2030. This expansion will be driven primarily by solar (+204 GW) and wind (+89 GW). While Southern European countries are expected to contribute the largest absolute increases, North African nations will see the most significant relative growth.

O3 Planned rate of renewables deployment needs to more than double

Despite the rapid pace of renewables deployment, the region is projected to fall short of the TeraMed Initiative's 1 TW target by 2030 by 374 GW. To reach this target, the average annual renewable capacity increase has to more than double from the planned 44 GW per year to 98 GW. Bridging this gap using wind and solar is the optimal solution, so an additional 54 GW of wind and solar needs to be installed over and above planned deployment. Increased political support and financial incentives will be essential to closing this shortfall and realising the Mediterranean's full renewable potential.

Renewable power: Present and future

A new era for energy cooperation in the Mediterranean

The Mediterranean has long been a region of strategic importance for energy and the dynamics of cooperation are set to undergo a shift, ushering in a new era of energy collaboration centred on renewables as opposed to fossil fuels.

The strategic importance of the Mediterranean region for energy supply has traditionally been characterized by fossil fuel flows from South to North. <u>Hydrocarbon-rich countries</u> such as Algeria, Libya and Egypt have supplied natural gas and oil to import-dependent Southern European nations. This dynamic became even more evident during the gas crisis triggered by Russia's invasion of Ukraine, prompting a <u>rush</u> by European governments to secure alternative energy sources through bilateral trade agreements with North African countries.

North Africa emerged as a <u>key partner</u> for Europe due to its geographic proximity, existing pipeline connections and abundant natural resources. However, these resources are not limited to fossil fuels - the region is also endowed with <u>significant renewable energy sources</u>, particularly wind and solar. These bring unparalleled opportunities for enhanced <u>energy</u> <u>security</u>, <u>economic growth</u> and regional cooperation.

Clean energy at the core of renewed cooperation

Recent initiatives demonstrate a strong push for green partnerships in the Mediterranean. This is evident in bilateral agreements between the EU and North African countries, such as

the <u>EU-Egypt Strategic Partnership</u> signed in 2024, which includes stepping up cooperation and investments for renewable energy sources and energy efficiency actions. And at an EU-level, the creation of a dedicated EU Commissioner for the Mediterranean and a forthcoming <u>Trans-Mediterranean Energy and Clean Tech Cooperation Initiative</u> signal institutional commitment.

This new wave of cooperation on clean power marks a departure from the historical model which largely revolved around North African fossil fuel exports supplying Southern Europe. Today, most North African countries are already self-sufficient in electricity generation and have reached <u>almost 100% access to electricity</u>, with minimal cross-border power exchange. Tunisia is the only exception, importing 11% of its electricity in 2023. This shift from a one-way resource flow to a more balanced regional collaboration presents opportunities to ensure that the new course of energy partnerships between the Northern and Southern shores of the Mediterranean are truly mutually beneficial.

Building on this momentum, new multilateral efforts are emerging to accelerate renewable deployment across the Mediterranean region. One such example is the <u>TeraMed Initiative</u> which aims to drive political and diplomatic momentum toward achieving 1 TW of renewable capacity by 2030. This is aligned with the global target of tripling renewable energy capacity set at COP28. The TeraMed Initiative, launched at the <u>Cairo Energy Week</u> in September 2024, is promoted by a growing network of like-minded organizations and supported by the Union for the Mediterranean, IRENA and Global Renewable Alliance. It is further reinforced by the <u>MED9</u> agreement to make the Mediterranean a <u>regional energy hub</u>.

Renewable capacity has already surpassed fossil in the Mediterranean

In 2023, Mediterranean countries had a combined installed renewable capacity of 315 GW, dominated by wind (88 GW), solar (107 GW) and hydropower (108 GW) and surpassing fossil fuel-based generation capacity (293 GW). Installed nuclear power was 69 GW, exclusively in Northern Mediterranean countries.

Renewable capacity distribution remains uneven

In 2023, Southern European countries accounted for 230 GW (73%) of renewable capacity, Türkiye for 58.5 GW (19%) and North African countries for just 12 GW (4%). Other Mediterranean countries have a combined total of 14 GW renewables.

Renewable power capacity in the Mediterranean already surpasses that of fossil electricity, but is unevenly distributed across the region



Capacity by source, 2023 (GW)

The availability of low-cost electricity and abundant domestic fossil fuel resources in North Africa - <u>which are often heavily subsidised</u> - <u>has restricted incentives</u> to invest in alternative energy sources. The exceptions are Morocco and Tunisia, which lack their own hydrocarbon reserves and rely on fuel imports to meet their primary energy needs. Morocco, in particular, has consistently prioritised wind and solar investments, positioning itself as a regional leader in renewable energy deployment. In fact, renewables already accounted for 40% of Morocco's total power generation capacity in 2023, and it has set a target to increase this to 52% by 2030.

Renewable power capacity set to double by 2030

Renewables are the <u>fastest-growing</u> energy source in most Mediterranean countries, and this trajectory is set to continue. By 2030, installed renewable capacity across the region is projected to double to 626 GW from 315 GW in 2023. This increase is primarily driven by a surge in solar (204 GW) and wind (89 GW).

This trajectory clearly demonstrates that the pace of growth is accelerating. From 2016 to 2023, renewable capacity grew by 55% (+112 GW) and it will increase by almost 100% (+310 GW) from 2024 to 2030.

Capacity figures for 2030 are based on published <u>government targets for power capacity</u>. Where explicit targets are not established, estimates for 2030 capacities have been calculated using historical trends. This was only necessary for Tunisia and Libya.



All Mediterranean countries are expected to contribute to this expansion. While additions in absolute terms are expected to be larger in the Southern European countries, the relative increase is most significant in North Africa. This is particularly notable for Algeria, which has set a target of 16 GW of solar, 5 GW of wind and 1 GW of other renewable technologies under its <u>Renewable Energy Development Programme</u>. This represents an almost 40-fold increase from its current installed renewable capacity of 0.6 GW.



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Current targets for renewables deployment are feasible

While challenges in the region, such as geopolitical tensions and financing constraints, could <u>affect the pace</u> of implementation, there are clear indications that existing 2030 targets are achievable.

Comparing the implied future annual installation rate to historical deployment rates reveals that many of these targets are within feasible limits, instilling confidence in the overall 2030 renewable capacity projections. The maximum annual renewable deployment across the Mediterranean countries between 2000-2023 reached a total of 45 GW – almost the same as the average annual deployment required to reach national renewable targets (44 GW).

At the country level, only a handful of cases imply annual additions that are significantly higher (+20%) than historical deployment.

Historical deployment rates show that most solar and wind targets are within reach in the Mediterranean

Line = highest historical annual installations* and bar = required average until 2030 (GW)



countries not named in the graphic.

Efforts need to be stepped up to reach the target of 1 TW by 2030

Despite the significant growth in renewable energy, the Mediterranean region is currently projected to fall short of the TeraMed Initiative's 1 TW renewable capacity target by 2030, which was set in alignment with the global target of tripling renewable energy capacity. Based on current country projections for 2030, the shortfall is estimated to be 374 GW.



The most effective way to address this gap is through accelerated investment in wind and solar due to the <u>huge potential</u> in the region and the fact that their costs are becoming <u>increasingly competitive with fossil fuels</u>. This shortfall requires an additional 54 GW of wind and solar capacity on average each year, over and above the planned annual renewable deployment of 44 GW (wind and solar account for 42 GW). This means more than doubling the planned annual capacity expansion to a total of 98 GW renewables, a figure which significantly exceeds the maximum historical deployment levels of 45 GW. Splitting this additional 54 GW across wind and solar according to relative shares of planned capacity expansions implies 16.5 GW of wind and 37.5 GW of solar each year, over and above the planned 13 GW and 29 GW respectively.

Additional political support and financial incentives will be essential to closing this shortfall and ensuring the Mediterranean's full renewable potential is realised.



These findings align with projections from the OMEC (Organisation Méditerranéenne de l'Energie et du Climat) which indicate that renewable capacity will more than double by 2030 based on current trends, but a <u>tripling</u> is required to align with a net-zero pathway by 2050. While Northern and Eastern Mediterranean countries are currently leading renewables deployment, OMEC's carbon-neutral scenarios suggest that future efforts must prioritize Southern Mediterranean countries.

This echoes recommendations by other organisations, such as the <u>ECFR</u>, for ongoing and future efforts to give clear priority to scaling up the production of renewable energy in the southern neighbourhood in order to fully develop the tremendous potential in the region for clean power.

Investing in networks and flexibility is crucial to prepare for the surge in renewables

Beyond wind and solar investments, the integration of renewables will require substantial investments in electricity grids, storage and flexibility solutions. By 2030, <u>OMEC projects</u> that energy storage will account for 1-2% of total power generation, rising to 10% by 2050 to support a net-zero transition. Therefore, alongside the necessary ramp up in renewables deployment to reach 1 TW by 2030, strengthening grid interconnections, expanding energy storage capacity and enhancing demand-side flexibility will be crucial to ensuring a reliable and resilient renewable energy system.

Conclusion

Unlocking the Mediterranean's renewable future

The renewed wave of EU-Mediterranean cooperation represents an opportunity to reshape energy dynamics in the region, bringing mutual benefits of energy security and economic growth to both sides of the shore. While some countries remain engaged in securing fossil fuel supplies, a parallel and more enduring shift is underway—one centered on unlocking the region's vast renewable energy potential. The region's energy future lies not in fossil fuels but in renewable power.

Supporting Materials

Methodology

Data sources

Historical capacity data is based on <u>Ember's yearly electricity data</u>, last downloaded on 26th March 2025. Annual data was available from 2000 until 2023.

Planned capacity additions until 2030 are based on countries' most recent energy plans. For EU member states, the figures are sourced from the <u>National Energy and Climate Plans</u>. For other Mediterranean countries, 2030 targets are based on <u>Ember's 2030 Global Renewable</u> <u>Target Tracker</u>, unless otherwise indicated in the data download file.

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Header Image

Offshore wind turbine generating electricity.

Trygve Finkelsen / Alamy Stock Photo

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