



LESSONS LEARNT FROM THE FAILURE OF THE MEDITERRANEAN SOLAR PLAN FOR THE SUCCESS OF A MEDITERRANEAN GREEN HYDROGEN PARTNERSHIP

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Abstract

Launched in 2008, the Mediterranean Solar Plan (MSP) represents one of the most emblematic and ambitious initiatives for the integration of low-carbon energy in the Euro-Mediterranean energy space. Despite being led by the Union for the Mediterranean (UfM) and the European Union (EU), the MSP never achieved its objectives and was subsequently disbanded. More recently, with the publication of the European Hydrogen Strategy (European Commission, 2020) and REPowerEU (European Commission, 2022) – the EU's energy response to the Russian invasion of Ukraine –, the idea of launching a Mediterranean Green Hydrogen Partnership (MGHP) has emerged prominently.

Based on the lessons learned from the shortcomings that led to the failure of the MSP, this policy brief aims to identify the risks and weaknesses that could be inherited in a future regional hydrogen-focused partnership. The primary objective of this analysis is to extract valuable insights from the MSP's experience, with the aim of contributing to the success of an MGHP in the future. The policy brief starts addressing the recent history of energy diplomacy in the Euro-Mediterranean region, continues describing the experience of the MSP and then presents the main elements of the current EU hydrogen diplomacy.

The paper concludes by presenting the main lessons learned from the MSP experience. Among them, they highlight the need to reconsider large-scale regional strategies that overly favour multilateral formulas that do not address the geopolitical reality of the Mediterranean.

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It also identifies the importance of adopting inclusive narratives that engage Mediterranean Partner Countries (MPCs) and foster real and constructive collaborations in the region. The Eurocentric approach of the MSP and the EU's hydrogen diplomacy seem to have largely missed the mark by focusing excessively on energy imports without effectively engaging all stakeholders.

Energy in the Euro-Mediterranean agenda

In 1995, the EU and its Southern Mediterranean counterparts committed themselves to transforming the Mediterranean into a region of dialogue, exchange and collaboration, as set out in the Barcelona Declaration. The first major initiative focused on energy cooperation took place within the framework of the Barcelona Process, in 1997, with the creation of the Euro-Mediterranean Energy Partnership. Regional energy cooperation experiences, until then, had focused on the development of infrastructure for the export of natural gas from North Africa to the EU: the Transmed (1983) and Maghreb-Europe (1996) pipelines. After a decade of limited success, EU member states attempted to relaunch the Euro-Mediterranean project with the creation of the UfM in 2008, whose initial mandate included enhancing energy integration.

The initial steps of the UfM led to ambitious energy diplomacy initiatives such as the MSP, the Euro-Mediterranean Energy Ring or the proposal to extend the Energy Community to Mediterranean countries. These initiatives were later abandoned, often because they were accompanied by weak institutions with little real governance capacity (Rubino, 2015). Other alternative plans with a more regional scope, such as the 5+5 Initiative, constituted by the 10 countries bordering the Western Mediterranean, lack sufficient traction. This is mainly due to the divergent energy perspectives of its members on both shores and the absence of economic tools, often because they were operated at the EU level, such as trade agreements or EU cooperation funds (Escribano, 2017). These platforms have, in general, largely failed to establish a Euro-Mediterranean energy policy space of regulatory convergence and harmonisation. Three decades later, the EU has encountered challenges in extending its model of multilateral cooperation, facing diplomatic setbacks in its efforts to advance an effective regional initiative, with countries increasingly gravitating towards bilateral formulas (Escribano et al., 2023). Again, energy integration through infrastructure resulted in the most successful cases with the construction of the Greenstream (connecting Libya and Italy since 2004) and Medgaz Pipeline (linking Morocco and Spain since 2010), as well as the two Morocco-Spain electricity interconnections (1996 and 2006). The success of these large infrastructures, unlike other initiatives focused on the development of markets or common regulation, may have generated a certain inertia in Euro-Mediterranean politics towards focusing on mega-projects such as the MSP.

The Mediterranean Solar Plan (2008-14): from hype to collapse

The MSP is probably one of the most obvious cases of high expectations and low returns of the Euro-Mediterranean energy dialogue. The MSP was presented in 2008 as one of the six projects considered by the UfM, while in 2009 the Desertec Industrial Initiative, its commercial arm, was established by a consortium led by German companies (Rothe, 2016). The objective of the MSP was to secure the energy needs of the countries north and south of the Mediterranean via the large-scale deployment of solar and wind energy plants and their integration with the European electricity network. The MSP set the target of developing 20GW of installed renewable energy capacity (solar and wind) by 2020 along with the necessary transmission systems and cross-border interconnections.

As Escribano (2017) presents, from an EU perspective, the main components of the MSP were: (a) European access to renewable resources in Europe's southern neighbourhood

to secure its own electricity supply during the energy transition (energy security); (b) the transmission and interconnection infrastructures to integrate electricity systems and increase interdependence (political cooperation); and (c) the positioning of European renewable industries, utilities and engineering companies in the Mediterranean (geoeconomics). Schmitt (2018) argues that the MSP's core idea was based on a win-win formula in which the EU would gain long-term energy security, and its industries would profit from the investments and business opportunities, while the Middle East and North Africa (MENA) region would gain economic dynamism, new jobs and, therefore, social stability. The Desertec Foundation described the project as a means of combating climate change, but also as a way of establishing a new partnership between Mediterranean countries. The most optimistic voices identified the MSP as a first step in the creation of a Euro-Mediterranean Energy Community that would emulate the successes of the European Coal and Steel Community (Gnad & Vietor, 2011); the critics, instead, considered it a neo-colonial approach that reproduced old dependencies (Schmitt, 2018; Stumm, 2020).

Soon, both the MSP and Desertec failed to deliver. By 2014, 47 of the 50 initial Desertec shareholders had left the consortium, de facto marking the end of the project, while the MSP initiative suffered the same fate when the UfM energy ministers refused to endorse the master plan, downgrading the MSP project to a second-tier diplomatic initiative (Tagliapietra & Zachmann, 2016). The reasons behind the failure of Desertec and the MSP are generally associated with their lack of political and techno-economic realism. On the commercial side, the business case was not viable because of the high cost of producing electricity from solar (both PV and CSP)¹ at the time, the absence of the required electricity interconnections and the downward evolution of the EU's electricity demand after the 2008 financial crisis. The MSP also faced significant geopolitical headwinds that cannot be ignored, mainly the Arab protests that swept the region from 2011. The Arab Spring increased the perception of geopolitical risk in the region and brought a new popular discourse for sustainable and inclusive development that went against the Eurocentric and elite-driven approach of the MSP (Carafa & Escibano, 2017).

The institutional design of these initiatives, always dominated by EU countries, proved their limitations in aligning the participants' interests, including transit countries. According to Schmitt (2018), since the outset of the MSP, there was an unsolved dispute over the question of which region the electricity produced in North Africa was intended for, with varying degrees of preferences between the shares of self-consumption and exports to Europe. On the southern shore of the Mediterranean, it was perceived by many actors as a Eurocentric project to serve European environmental preferences, as well as the promotion of European utilities, industries and engineering firms (Marín & Escibano, 2010). The MSP also struggled to integrate all the interests of the Euro-Mediterranean region. In particular, the interests of transit countries were never adequately addressed. Spain, which had been demanding better interconnections with the rest of the EU for decades, was not offered a realistic plan to improve its electricity exchange capacity with France. Instead, a model of statistical transfer, or "virtual trading", across the Mediterranean Basin was proposed to avoid the infrastructure bottleneck of building new HVDC cables (Schinke & Klawitter, 2014). For transit countries, the statistical transfer idea was perceived as an excuse not to advance the grid interconnections between the two regions, alienating them with the idea of a "virtual" Mediterranean electricity grid. This situation highlighted an underlying issue with EU policy towards the Mediterranean: the different perspectives of its own member states and the difficulties to present a coherent joint vision.

¹ Photovoltaics (PV) and concentrated solar power (CSP).

Evolution of the EU hydrogen diplomacy in the Mediterranean (2020-2024)

The EU's Hydrogen Strategy, launched in July 2020, has positioned hydrogen as a key element in discussions surrounding decarbonisation, infrastructure development, industrial policy, and energy security within the EU. With a focus on establishing global leadership in setting standards and fostering technology development, the EU aims to leverage renewable hydrogen to reduce dependency on Russian natural gas, as set in REPowerEU. Additionally, it seeks to drive the implementation of the Net Zero Industry Act, ensuring strategic autonomy amidst crises like the COVID-19 pandemic and conflicts such as the war in Ukraine (Urbasos, 2023). The (non-binding) targets set in REPowerEU establish importing up to 10 million tons of renewable hydrogen by 2030, with the Mediterranean corridor and the North Sea as priority areas. The REPowerEU's mandate and the context of energy crisis have influenced from the outset the EU's approach to Mediterranean hydrogen cooperation, leading to a narrow narrative overly focused on energy security and securing hydrogen supplies. Just two years after the publication of REPowerEU, it seems clear that its import targets are unrealistic and highly unlikely to be met by 2030 (Graf et al., 2023).

In this context, the idea of launching a Mediterranean-wide Hydrogen Partnership has not materialised institutionally, despite being proposed in 2022 at the Euro-Mediterranean summit in Alicante by Ursula von der Leyen, and by Frans Timmermans at COP27. Hydrogen Europe, the European association representing the interest of the hydrogen industry, also called for the creation of an MGHP with the purpose of coordinating clean hydrogen production and distribution to support decarbonisation efforts in Europe and Africa, modelled after the European Coal and Steel Community (Chatzimarkakis, 2022). In October 2022, the EU formed a green partnership with Morocco, followed by a renewable hydrogen partnership with Egypt a month later. Other agreements, such as the Memorandum of Understanding on a strategic and global partnership between the EU and Tunisia of July 2023 and the EU-Algeria high-level energy dialogue two months later, devoted substantial attention to hydrogen development, mentioning the potential for hydrogen exports to the EU. Initiatives associated with hydrogen have also taken place at the national level. Italy has been particularly active in this diplomacy, signing relevant Memorandums of Understanding with Tunisia and Algeria, followed by Germany, signing agreements with Morocco, Algeria, Tunisia and Egypt. Once again, European external energy policy has suffered from fragmentation as a result of the divergent strategic interests of its member states in hydrogen matters: Germany focuses on securing imports, Italy on cementing itself as a transit country, France on self-sufficiency and Spain on becoming a future exporter (Escribano, 2021). Although hydrogen diplomacy seems to have lost some momentum in the EU, calls for the establishment of an MGHP are likely to emerge in the future again. The following section will explore how such a proposal should be articulated, drawing on the lessons learned from the MSP.

Lessons learnt and policy recommendations

The failure of the MSP leaves some useful lessons that could be applied to hydrogen development in the Mediterranean. The first reflection is on the appropriateness of large, regional strategies that rely excessively on overly ambitious multilateral formulas. The second lesson is the need for inclusive narratives that attract MPCs, generating real positive synergies for the Mediterranean region. The Eurocentric MSP narrative and the current EU hydrogen diplomacy do not seem to have achieved this, focusing excessively on energy imports, leaving development and industrialisation opportunities aside.

Avoid grand policies that do not consider the institutional realities of the region

The main cause of the failure of the MSP was not being realistic enough with the institutional setting and market trends in the Mediterranean (Tagliapietra & Zachmann, 2016). Without functioning energy markets and open competition, it was unfeasible to mobilise the European private investment needed to deliver the solar development and infrastructure construction

envisaged in the plan. Almost two decades later, the institutional reality in MPCs has not changed very much. The EU hydrogen diplomacy in the region has succumbed again to the temptation to put the cart before the horse, ignoring the absence of an institutional context in which to realise aspirations for an integrated renewable hydrogen market in the Mediterranean.

Despite the initial high expectations, hydrogen development in North Africa appears particularly challenging in the absence of functional energy markets, the rapid growth in electricity demand and the current starting point of low renewable penetration. These regional difficulties are coupled with the general challenges the renewable hydrogen sector is experiencing with issues in its value chain, in the “real-life” implementation of projects and in obtaining cheap, time-correlated green energy (BCG, 2023). It therefore seems sensible to avoid unrealistic grand strategies that try to “revolutionise” the Euro-Mediterranean energy integration process. Bilateral hydrogen agreements seem, therefore, a wise approach to move forward with the best positioned MPCs in hydrogen cooperation, focusing on what is possible over the desirable.

Local decarbonisation must be prioritised to avoid the Eurocentric narrative of the MSP

An important contradiction of the MSP was prioritising electricity exports over addressing the rapidly increasing domestic demand in MPCs, precisely in a period of stagnant electricity consumption in the EU. This time is no different, as new renewable generation in MPCs must be devoted to meeting their growing electricity demand first and foremost, and to displace the fossil fuels that still dominate their electricity mix. According to the International Energy Agency (IEA, 2023) statistics on electricity, in 2021 coal, natural gas and oil contributed more than 75% of the electricity generated in Morocco, Tunisia, Algeria, Libya and Egypt, while electricity demand has more than trebled since the year 2000.

In the case of renewable hydrogen, its end use should prioritise cost-competitive decarbonisation that includes its use in the region’s existing industries: fertilisers, petrochemicals and metallurgy, especially in view of the entry into force of the Carbon Border Adjustment Mechanism (CBAM) in 2026. It also requires the construction of an EU narrative (and action) based on economic development instead of dependency that strives for mutually beneficial development gains and the sustainable use of resources that yield high value-added and jobs (Escribano & Lázaro, 2020). Strategic partnerships for green steel, advanced e-fuels or fertilisers seem to complement or substitute hydrogen trade in the Mediterranean in a more efficient way (Urbasos, 2023). The EU must avoid repeating the mistakes of the MSP and reformulate its hydrogen diplomacy in the region, offering a space for cooperation that focuses on value chain integration over hydrogen exports.

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