

# THE EURO-MEDITERRANEAN ENERGY RELATIONSHIP: A FRESH PERSPECTIVE

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## A NEW PARADIGM FOR EURO-MEDITERRANEAN ENERGY COOPERATION



Source: Bruegel

## THE ISSUE

Energy is a fundamental component of the economic relationship between the European Union and southern Mediterranean countries, largely driven, so far, by Europe's quest for oil and gas supplies. However, given the booming energy demand in southern Mediterranean countries and their great solar and wind potential, regional energy cooperation should also strongly focus on fostering large-scale deployment of renewable energy. This would allow southern Mediterranean countries to meet their increasing energy demand in a more sustainable way, and would also have positive economic and political benefits for Europe.

## POLICY CHALLENGE

Under the 2015 Paris Agreement on climate change, southern Mediterranean countries adopted post-2020 plans to reduce their greenhouse gas emissions and set targets for deployment of renewables. However, these commitments are largely conditional on international climate finance support being provided. Europe could scale-up its climate financing in the southern Mediterranean, but this should be linked to the implementation of certain energy reforms in those countries. Reforms should not be aimed at transposing in southern Mediterranean countries the EU framework and rules, but rather at removing the main barriers to the private sector's engagement in those countries' renewable energy sectors. This could be done by promoting pragmatic solutions to specific legal, regulatory and financial bottlenecks. Greater climate financing should be provided only when southern Mediterranean countries implement such solutions in practice. Helping southern Mediterranean countries meet their energy needs in a sustainable way would also benefit Europe by opening up new business opportunities for European energy companies, promoting the export of European renewable energy technologies, guaranteeing the stability of future gas exports from the region to Europe, promoting economic development in southern Mediterranean countries and delivering on those countries' pledges under the Paris Agreement.

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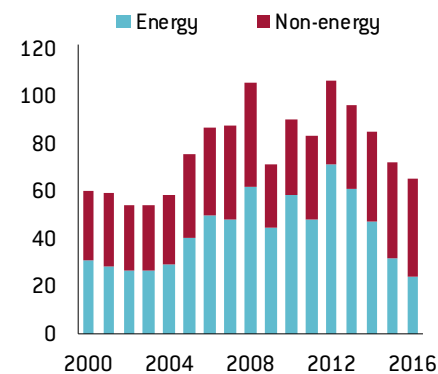
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## 1 ENERGY: THE CORE OF THE EURO-MEDITERRANEAN ECONOMIC RELATIONSHIP

Energy is a fundamental component of the economic relationship between the European Union and the ‘southern neighbourhood’ Mediterranean countries<sup>1</sup>. This dates back to the 1960s, when discussions started on the first large-scale energy infrastructure in the Mediterranean region – a gas pipeline connecting Algeria to Italy via Tunisia. Since then, more than 6,000 kilometres of gas pipelines have been laid across the Mediterranean, to connect Algeria with Spain and Italy, and Libya with Italy. Large-scale liquefied natural gas (LNG) and oil infrastructure has also been constructed all around the Mediterranean<sup>2</sup>.

This infrastructure, built on the basis of bilateral state-to-state and company-to-company relationships between producers in the south and importers in the north, still channels a major part of Southern Mediterranean countries’ (SMCs) total exports to Europe (Figure 1).

**Figure 1: SMCs’ exports to Europe: the key role of energy (€ billions)**



Source: Bruegel based on Eurostat data.

In the early 2000s, the idea emerged of replicating the successful gas cooperation story in the Mediterranean region in the area of renewable energy. Taking a regionalist approach rather than a traditional bilateral approach to cooperation, two initiatives were launched with the objective of tapping into the vast solar and wind energy potential of SMCs: Desertec and the Mediterranean Solar Plan. These would supply clean energy to the SMCs and to Europe. Desertec was

a German industrial initiative, and the Mediterranean Solar Plan was a Union for the Mediterranean flagship project. Both initiatives were supported by the European Union, which has always viewed energy cooperation as a special tool to promote political stability and economic prosperity in the region.

But these two initiatives failed in less than a decade, largely because of a lack of commercial and political realism. The initiatives’ business models were based on the export to the EU of solar and wind electricity produced in SMCs and were not commercially viable because of: i) high electricity generation costs; ii) lack of electricity interconnections between SMCs and between the northern and southern Mediterranean shores; and iii) the lack of a clear need on the EU side for additional renewable energy capacity. In political terms, the initiatives did not properly consider that the first priority for SMCs was meeting their own booming energy demand. Nor did they take sufficiently into account the overall lack of cooperation between SMCs, the group of countries with the lowest level of intra-regional trade in the world. In particular, both initiatives proved unrealistic because they sought to adopt a one-size-fits-all approach to a region that was – and continues to be – too complex and diverse for this to work (Tagliapietra and Zachmann, 2016).

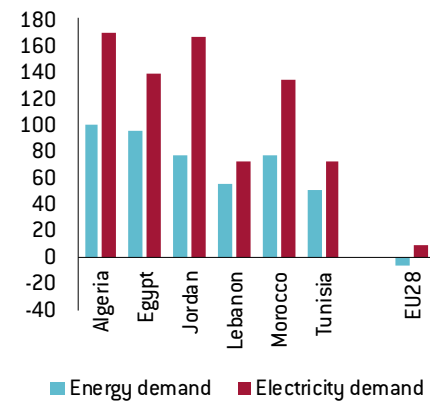
This experience suggests that fostering renewable energy in the region cannot be done on the basis of a Eurocentric approach. In other words, instead of the traditional focus on exporting energy from SMCs to Europe, the priority should be supporting SMCs in meeting their booming energy demand in a sustainable way. Cooperation between the EU and SMCs in terms of renewable energy should be about developing projects for the SMCs’ consumption, not for Europe’s. Since 2000, energy demand, especially electricity demand, has boomed in SMCs (Figure 2). This trend is set to continue in the future, in response to expected population and GDP growth in SMCs.

From an energy cooperation perspective, the most sensible way for the EU to respond to this challenge is to foster

1. In the European Neighbourhood Policy (ENP), the category ‘Southern Neighbourhood’ includes ten partner countries: Morocco, Algeria, Tunisia, Libya, Egypt, Israel, Palestinian Territories, Jordan, Lebanon and Syria.
2. For a comprehensive overview of the historical development of energy cooperation in the Mediterranean, see Tagliapietra (2017).
3. Data from the IRENA database.

the large-scale deployment of renewable energy – notably solar and wind – in SMCs.

**Figure 2: Energy and electricity demand in SMCs, % change between 2000 and 2015**



Source: Bruegel based on International Energy Agency, World Energy Balances database, accessed in March 2018.

The other important component of Euro-Mediterranean regional energy cooperation, natural gas, does not need EU support in order to progress. It is a well-established sector in which progress is mainly driven by the private sector. As has been shown since 2015 in Egypt with the discovery and rapid development of the large-scale Zohr natural gas field, European energy companies – with the diplomatic backup of their respective governments – can foster vast projects without any EU intervention.

For renewable energy the situation is different. The sector is not yet well established in the region, increasing the financial and regulatory risks for European companies. This is the primary reason why a strong EU contribution in the field could foster progress.

As we will show, making progress on renewable energy in the region would not only allow SMCs to meet their energy demand sustainably – from both environmental and macroeconomic perspectives – but would also have positive benefits for the EU in both economic and political terms.

## 2 CURRENT RENEWABLE ENERGY DEVELOPMENTS IN SMCs

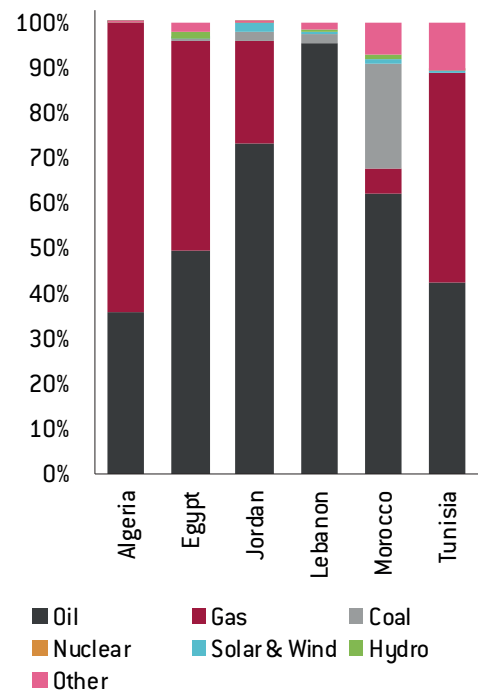
The SMCs are richly endowed with solar and wind energy resources, which are estimated to be among the best in the

world (IRENA, 2015). Solar photovoltaic (PV) potential is widespread in the region and can be tapped at both household and utility levels. Concentrated solar power performs optimally in utility-scale projects situated in the region's deserts, where the intensity of solar irradiation is among the highest in the world. Wind power also has great potential for the SMCs, given the favourable wind conditions that characterise all these countries.

In recent years, the SMCs have started to exploit this potential. Between 2010 and 2015, they expanded their installed wind capacity from 857 megawatt (MW) to 1,942 MW, and their installed solar capacity from 74 MW to 382 MW. The greatest share of this increase came from Morocco, which increased over the same period its installed wind capacity from 253 MW to 934 MW, and its installed solar capacity from 34 MW to 200 MW<sup>3</sup>.

Notwithstanding this progress, wind and solar were still a minor contributor to SMCs' primary energy mixes in 2015, with shares of 0.01 percent in Algeria, 0.17 percent in Egypt, 2 percent in Jordan, 0.3 percent in Lebanon, 1.1 percent in Morocco and 0.8 percent in Tunisia (Figure 3).

**Figure 3: Primary energy mix in SMCs, 2015**



Source: Bruegel based on International Energy Agency database, accessed in March 2018.

**Table 1: SMC Nationally Determined Contributions under the Paris Agreement**

	Unconditional emissions reduction targets	Conditional emissions reduction targets	Renewable energy implementation measures
Algeria	7% by 2030 compared to BAU	22% by 2030 compared to BAU	27% of electricity production by 2030
Egypt	No specific target determined	No specific target determined	<i>Not determined</i> (National strategy 20% of electricity production by 2022)
Jordan	1.5% by 2030 compared to BAU	14% by 2030 compared to BAU	<i>Not determined</i> (National strategy 10% of energy mix by 2020)
Lebanon <i>Not ratified</i>	15% by 2030 compared to BAU	30% by 2030 compared to BAU	15-20% of electricity production by 2030
Morocco	17% by 2030 compared to BAU	42% by 2030 compared to BAU	52% of installed electricity production capacity by 2030
Tunisia	13% by 2030 compared to 2010	41% by 2030 compared to 2010	30% of electricity production by 2030

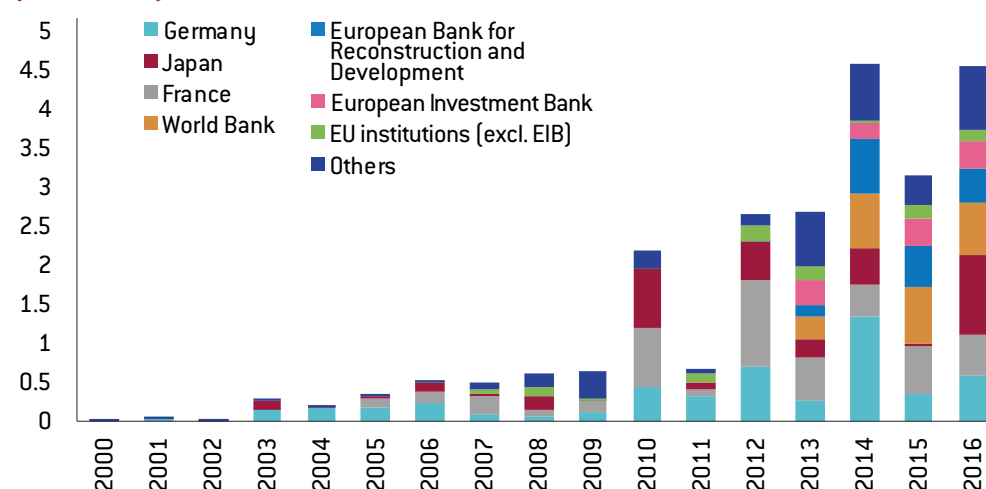
Source: Bruegel based on International Panel on Climate Change. Note: BAU = business as usual.

### 3 FUTURE PROSPECTS, IN LIGHT OF THE PARIS AGREEMENT

In the context of the 2015 Paris Agreement on combating climate change, all SMCs have adopted post-2020 plans, known as Nationally Determined Contributions (NDCs), to reduce their greenhouse gas emissions. With the exception of Egypt, all SMCs have outlined clear 2030 emission reduction targets. Algeria, Lebanon, Morocco and Tunisia also included in their NDCs specific targets for the deployment of renewable energy, while Egypt and Jordan adopted similar targets through national energy strategies (Table 1).

These countries' NDCs differ considerably in terms of their levels of ambition, but they do share a common feature: linking action to external support. The SMCs have committed to only modest greenhouse gas reductions through their own efforts and have promised much more substantial action only if external technical and financial support is made available<sup>4</sup>.

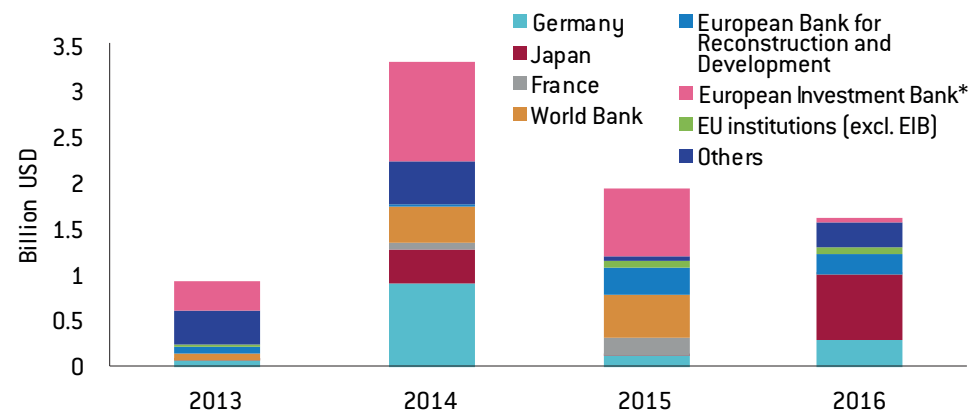
International climate finance thus has a crucial role to play in fostering the implementation of the Paris Agreement in the SMCs and, consequently, in fostering the large-scale deployment of renewable energy.

**Figure 4: European and international flows of climate finance to SMCs, by provider (2000-2016)**

Source: Bruegel based on OECD DAC database, accessed in March 2018.

4. Conditionality in relation to climate goals is not just an SMC-specific issue, but a broader issue for all developing countries. About 78 percent of NDCs contained within the Paris Agreement include conditions. Of these, over 80 percent are attached to the provision of external financial support for all or part of the proposed measures (Day *et al.*, 2016).

**Figure 5: European and international flows of energy-related climate finance to SMCs (2000-16)**



Source: Bruegel based on OECD DAC database, accessed in March 2018.

\*Note: given the lack of data on EIB energy-related climate finance in the DAC database, the EIB's contribution is here proxied by reporting the energy investments carried out by EIB's Facility for Euro-Mediterranean Investment Partnership (FEMIP), as per related annual reports.

#### 4 FLOWS OF EUROPEAN AND INTERNATIONAL CLIMATE FINANCE TO SMCS

Under the Paris Agreement, developed countries committed to mobilise from various sources – public and private, bilateral and multilateral – \$100 billion per year by 2025 to support developing countries in their efforts to reduce emissions. With a contribution of €20.2 billion in 2016<sup>5</sup>, the EU is the world's largest contributor of climate finance to developing countries.

In recent years, SMCs have received increasing flows of European and international climate finance (Figure 4). Between 2013 and 2016, Germany was the top contributor with a cumulative investment of \$2.8 billion, followed by the World Bank Group (\$2.4 billion), France (\$2 billion), the European Bank for Reconstruction and Development (EBRD, \$1.8 billion), Japan (\$1.7 billion), the European Investment Bank (EIB, \$1.2 billion) and other EU institutions (\$0.5 billion).

Over the same period, Morocco was the main recipient of these flows (\$5.4 billion), followed by Egypt (\$4.6 billion), Jordan (\$2.39 billion) and Tunisia (\$1.5 billion).

In terms of the energy component of these flows of finance, the EIB played a leading role between 2013 and 2016, with a cumulative investment of \$2.1 billion. This was followed by Germany (\$1.4 billion), Japan (\$1 billion), the World Bank Group (\$0.9 billion) and the EBRD (\$0.6 billion) (Figure 5).

Of the 2016 energy-related climate-finance flows to SMCs, 53 percent was devoted to renewable energy generation, 30 percent to non-renewable energy generation, 15 percent to energy distribution and 2 percent to energy-policy related activities.

In absolute terms, SMCs received \$0.8 billion of European and international climate finance to support renewable energy projects in 2016. This figure, amounting to 0.8 percent of the annual climate finance commitment pledged by developed countries under the Paris Agreement, could be scaled-up in the future, notably on the basis of a stronger European commitment to the region.

More robust European action to foster the development of renewable energy in SMCs via climate finance should, however, be linked to the implementation of certain energy reforms in SMCs. These would be directed at removing the key barriers to the private sector's engagement in renewable energy in these countries.

#### 5 LINKING CLIMATE FINANCE TO BETTER RENEWABLE ENERGY GOVERNANCE

Scaling-up renewable energy in the SMCs in line with the countries' NDCs will be costly. For instance, the World Bank Group estimates that Egypt, Jordan and Morocco alone would need around \$100 billion in investment in renewable energy generation between 2016 and 2030 to meet their NDC targets (IFC, 2017).

International private investment is essential to meet this large investment need. However, various barriers in SMCs continue to prevent international investors from becoming more engaged in SMC renewable energy sectors (RES4MED, 2017). Two key barriers stand out:

- **Legal and regulatory barriers:** All SMCs have renewable energy targets, but achieving them ultimately relies on the presence of sound and stable renewable energy regulatory frameworks. On this front, much remains to be done in the SMCs. Jordan is the only SMC with a well-established and reliable renewable energy regulatory framework, while in other countries the situation is more complex. For instance, frequent changes in feed-in-tariff schemes and fossil-fuel
- **Financial barriers:** Currency convertibility, inflation and lack of foreign reserves are concerns for investors in almost all SMCs. The cost of financing and the limited availability of debt from commercial sources for renewable projects represent a general challenge in all SMCs, though to different degrees. These barriers are felt either through non-availability of finance or inflexible grace periods that are not adapted to the characteristics of such investments.

subsidies are a concern for investors in Egypt, while the lack of an independent regulatory authority is a key concern for investors in Morocco. The lack of a fully developed regulatory framework continues to hinder investments in Algeria, Lebanon and Tunisia.

### BOX 1: The role of climate finance in reducing the cost of capital for renewable energy in SMCs

Over the last decade, wind and solar power have become mainstream technologies thanks to substantial declines in their costs. Since 2009, solar photovoltaic costs have dropped by 80 percent and this trend is continuing. Wind turbine costs have halved in the same period. In 2017, the cost of electricity generation from newly installed wind averaged \$0.06 per kilowatt-hour (kWh) worldwide.

The cost structure of electricity generation from renewable energy technologies differs from thermal power generation since renewables do not use any fuels. Most of the generation cost relates to the capital cost of technologies. Financing costs, therefore, are key to ensuring cost-competitiveness. Capital costs include the costs of debt and equity, and are affected by country- and industry-specific risks. For instance, the cost of capital for renewable energy investments in Europe ranges from 3.5 percent in Germany to 12 percent in Greece for onshore wind (DiaCore, 2016). This wide range is a consequence of the different policy risks that investors face (for example, differences in the national regulatory frameworks that support the deployment of renewable energy sources).

An enabling investment environment boosted by low financing costs is fundamental to create markets for renewable energy technologies. This is where climate finance comes into play. In SMCs, renewable energy is financed from various sources. One form is funding made available by private investors, along with land ownership. This comes with minor risks as funds are readily available. Commonly, local banks and international finance institutions (IFIs) provide loans to investors in renewable energy. For these loans, the interest rate, which would determine to a great extent the cost of capital, could depend on factors including loan type, the currency of the loan and funding source. For instance, an issue for SMCs in particular is that interest rates for local currency are much higher than 10 percent currently. On the other hand, foreign exchange loans in euros or US dollars from IFIs such as the EBRD and the EIB could offer investors more favourable financing costs. Greater engagement of these institutions and other climate finance vehicles could leverage additional financing, in particular from the private sector, because the IFIs' risk-mitigation and credit-enhancement tools would reduce the risks for private investors.

5. This includes contributions from the EU's own budget, from EU member states and from the European Investment Bank (EIB).

6. See: [https://ec.europa.eu/neighbourhood-enlargement/neighbourhood/overview\\_en](https://ec.europa.eu/neighbourhood-enlargement/neighbourhood/overview_en).

7. For country-specific lists of possible pragmatic solutions, see RES4MED (2017).

SMCs must take action to overcome these barriers, in line with their respective national circumstances. That is, the governments of SMCs should act first and reform their energy sectors in order to unleash private investment.

Europe meanwhile could incentivise this process by offering individual countries more ambitious climate financing, aimed at cutting the cost of capital for renewable energy projects and leveraging more private investment (Box 1).

But such action should be conditional on the implementation of the reforms necessary to attract further private investment. To be clear, these reforms should not be aimed at replicating in the SMCs the European frameworks and rules. The EU has traditionally had a tendency to promote in its neighbourhood the take-up of EU energy policy principles, such as liberalisation.

This copy-and-paste approach clearly emerges from the Action Plans that form the backbone of the EU Neighbourhood Policy<sup>6</sup>. These plans foresee gradual convergence of SMCs towards European rules. In 2003, for example, a 'Memorandum of Understanding for the progressive integration of electricity markets of Algeria, Morocco and Tunisia and in the EU electricity internal market' was signed. The creation of Mediterranean associations of regulators and transmission system operators in 2007 and 2012 also somewhat followed the blueprint of EU internal market integration.

Recent history has shown that, apart from sharing best practices, the effectiveness of these initiatives has been limited. The Eurocentric approach to energy cooperation in the Mediterranean should therefore be changed. Instead of seeking to promote energy market liberalisation in SMCs, Europe should work with individual SMCs to formulate pragmatic solutions to specific legal, regulatory and financial bottlenecks.

In the legal and regulatory areas, concrete solutions to be promoted in specific SMCs might include measures to increase clarity and transparency of rules; to provide legal and administrative support to international energy companies willing to invest in the country; to enhance

transparency and clarity of rules in dispute procedures and to shorten dispute resolution timeframes; to phase-out fossil fuel subsidies; to establish one-stop-shops for renewable energy permits.

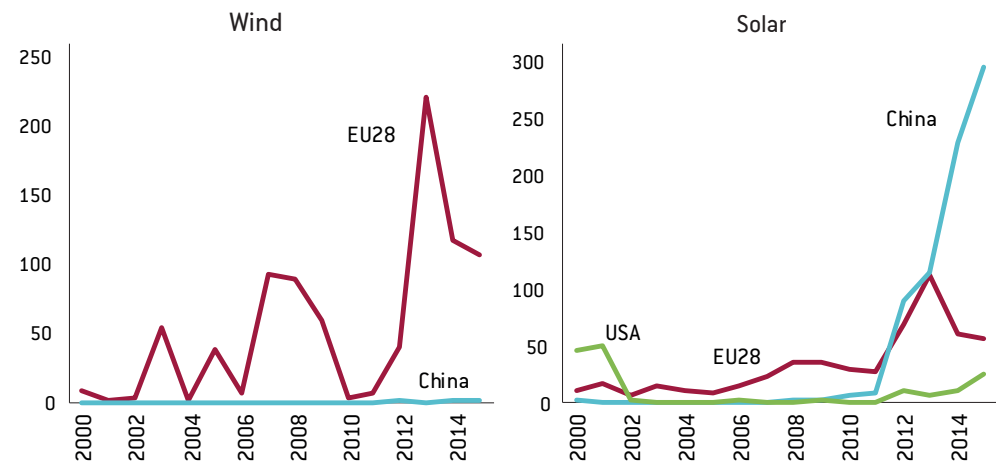
In terms of financing, concrete solutions to be promoted in specific SMCs might include measures to enhance local banks' capacities and ranges of instruments for supporting international investors; to establish a more stable central-bank monetary policy; to encourage transactions and power-purchase agreements with a more stable currency; to establish favourable tax regimes for renewables<sup>7</sup>.

Greater climate finance support should only be offered to SMCs that implement such solutions in practice.

## 6 THE POSITIVE IMPLICATIONS FOR EUROPE

Providing support so that SMCs can meet their energy demands in a sustainable way would benefit not only the SMCs themselves, but also Europe. Supporting sustainable energy development in SMCs would imply:

1. Opening up new business opportunities for European energy companies to operate in rapidly growing markets;
2. Promoting the export of European renewable energy technologies. This is notably the case for wind power, a sector in which SMCs rely almost exclusively on imported European technology (Figure 6);
3. Guaranteeing the stability of future gas exports from the region to Europe, by allowing these countries to meet their growing electricity demand with renewables instead of gas. This is important for Europe because these gas exports are an important element of the EU's gas security-of-supply architecture;
4. Promoting more rapid economic development in SMCs, which is a key prerequisite for expanding the region's economic and trade relations with Europe;
5. Making a significant contribution to global emissions mitigation efforts by promoting the development of cleaner energy systems in SMCs, in line with the Paris Agreement.

**Figure 6: SMCs' import of wind and solar technologies by source (€ millions)**

Source: Bruegel based on Comtrade.

In order to have an impact, energy cooperation between the EU and SMCs should shift its focus from the export of energy from SMCs to Europe, to Europe supporting SMCs in meeting their booming energy demand in a sustainable way.

Europe could scale-up its climate financing activity in SMCs to support these countries in meeting their Paris Agreement pledges. But greater support should be linked to the implementation of energy reforms in SMCs, aimed at

removing the barriers to the private sector's engagement in their renewable energy sectors. This could be done by promoting pragmatic solutions to specific legal, regulatory and financial bottlenecks in individual SMCs. Higher levels of climate finance should be offered only to SMCs that actually implement such solutions. Supporting SMCs in meeting their energy needs in a sustainable way would also benefit Europe both in economic and political terms.

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