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ANALYSIS

OME's Mediterranean Energy Perspectives 2015

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Committed to a better mediterranean energy cooperation

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Bringing Europe and Third Countries closer together through renewable energies

Current challenges and recommendations to enhance cooperation in the post 2020 framework

This article summarizes some of the key findings and main outcomes of the Intelligent Energy Europe project *Bringing Europe and Third Countries closer together through renewable energies* (BETTER). The paper is structured as follows: First, a summary of the current policy context and the rationale for RES-E cooperation in the Euro-Mediterranean region is presented. Then, an analysis of the main drivers and barriers for RES-E cooperation by 2020 and beyond, as well as the main prospects for long-term energy cooperation between the EU and its neighbouring countries is provided. Finally, a set of policy recommendations on how to enhance RES-E cooperation beyond 2020 are outlined.

POLITICAL CONTEXT

Since the launch of the Barcelona process back in 1995 and the introduction of the European Neighbourhood Policy (ENP) in 2004, energy has been at the core of Euro-Mediterranean cooperation. RES Cooperation within the EU as well as with EU neighbouring countries has been high on Europe's political agenda for various reasons.

Back in 2009, a key driving force behind the RES Directive 2009/28/EC and RES expansion was the EU's long-term vision of an affordable, reliable and sustainable energy system by 2050. This vision was coupled with a concrete goal to reduce CO_2 emissions by 85-90% by 2050 compared to the 1990 level. Intermediate goals in the period to 2050 include the 20/20/20 targets for 2020 and the 27/27/40 targets for RES/energy efficiency/CO_2 emission reductions by 2030. In January 2011, the EC called for more cooperation to meet the 2020 RES targets while the EU 2050 roadmap opened up discussion on how to fully decarbonise Europe's Energy system on the long term keeping in mind that current capacity and infrastructure will be of critical importance for the long term pathways. Similarly, in November 2014, energy ministers of EU Member States as well as South and East Mediterranean countries agreed to intensify the Euro-Med cooperation in the energy sector and consequently concluded with the establishment of three platforms to enhance bottom up dialogue and exchange of best practices: on gas, on electricity and on renewable energy and energy efficiency. More recently, in February 2015, the EC adopted the Energy Union Package consisting of several important documents addressing the energy and climate change to 2020 and beyond as well as cooperation with neighbouring regions. For example, the EC Communication on a Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy recognized that the key to improve energy security lies in a more collective approach based on true solidarity and trust through a functioning internal market and greater cooperation at regional and European levels, and second, in a more coherent external action.

In this context, an important role for cost effectively meeting the RES 2020 target but also for the design of Europe's Energy system beyond 2020 may involve cooperation within the EU and with the EU's neighbour regions incentivized by RES cooperation mechanisms as provided for by the RES directive.

The directive 2009/28/EC provides for four cooperation mechanisms available to EU Member States to realise part of their national EU target abroad. Of particular importance for the BETTER project is Article 9 of the RES Directive which enables one or more Member State to cooperate with neighbouring countries in joint projects regarding the generation of electricity from renewable sources. A prerequisite to the acceptability of the project is that the electricity produced within the project must be consumed in the Community area. Other preconditions for using this mechanisms include that an equivalent amount of electricity to the electricity accounted for the buyer country has been allocated to interconnection capacity by all responsible Transmission System Operators in the country of origin, the country of destination and, if relevant, each third country involved in the transit; and that third country cannot provide support for the RES production, other than investment aid.

The European Commission estimates that great savings can arise from an international cooperative approach in reaching EU Renewable Energy targets by 2020. Nevertheless, implementing such cooperation scheme is not an easy task. Proof of that is the fact that since the directive entered into force in 2009, not a single Article 9 project has seen the light and other regional initiatives –such as for example Dii and the Mediterranean Solar Plan- have not delivered the desired outcomes.

In the following, the main drivers and barriers for enhanced regional cooperation between EU and its neighbouring countries are explored.

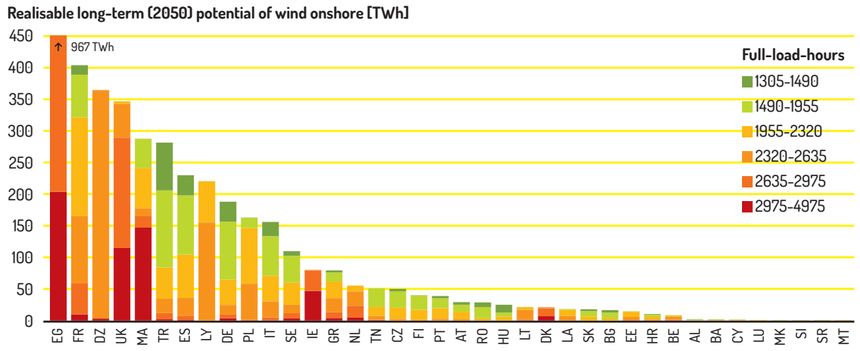
DRIVERS AND BARRIERS FOR ENHANCED RES-E COOPERATION IN THE TIME FRAME UP TO 2020

The rationale for Article 9 based RES cooperation is that, compared to the EU, neighbouring countries have a relative advantage in terms of RES-E potential (mostly wind, solar and hydro) and/or costs. As an example, figures ❶ to ❸ show the wind and solar (PV and CSP) realizable technical[2] potentials of selected countries in Europe as well as in North Africa, Western Balkans and Turkey. Similarly, figure 4 displays the cost comparative advantage of selected renewable technologies compared to the EU28 average values of fixed costs per energy unit.

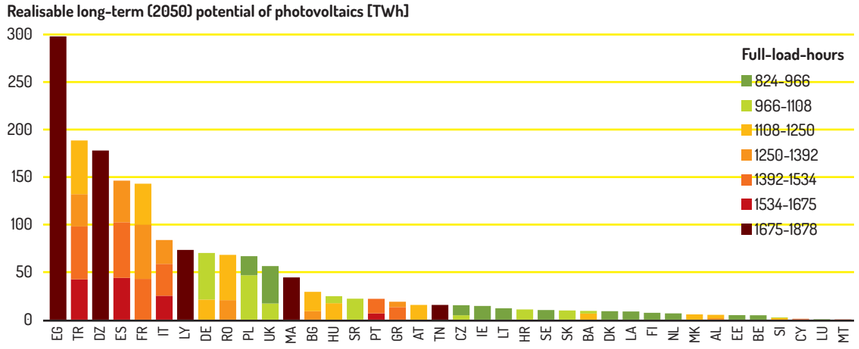
Figure ❶ shows that, within Europe, France, UK and Spain command over the highest wind onshore potentials whereas UK stands out due to its excellent wind locations. Turkey ranks in between UK and Spain, offering comparable resource qualities to the latter. Due to their small size, the Contracting Parties of the Western Balkans disappear in direct comparison with larger countries. In contrast to the Western Balkans, most North African countries offer vast future potentials of wind onshore. For example, the available potential with excellent wind conditions in Egypt is in the size of all available locations of same quality within the EU28. Algeria has lower resource quality compared to Egypt, but overall its realisable long-term technical potential is well above 350 TWh, hence more than the total electricity generated in the country from both conventional and renewable sources every year.

Similarly, figure ❷ shows that in terms of PV potentials, Egypt ranks first in a cross-country comparison, followed by Turkey and Algeria. The available resources in all three top-ranking countries clearly exceed the ones in Spain, France or Italy. The available potentials for solar PV within Libya are in the size of the best locations within Spain, Italy and Portugal. A closer look at the Western Balkan countries indicates that also most of them stick out due to their comparatively good solar conditions.

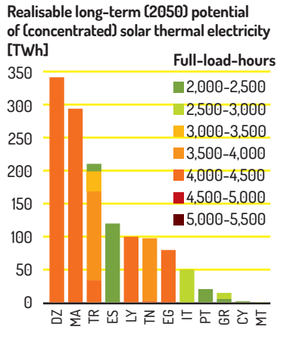
Finally, figure ❸ shows the realisable long-term (2050) potentials for concentrated solar thermal power (expressed, as before, in available full load hours). The countries with the largest potentials are Algeria, Morocco and Turkey. Similar to PV, all North African countries as well as Turkey show a considerable higher range compared to European countries. Moreover, countries like Libya, Tunisia or Egypt, being last in the size ranking among North African countries, offer realisable long-term potentials of almost similar magnitude than the top-ranking EU country Spain. Besides the availability of considerable amounts of untapped RES potentials in North Africa, West Balkans and Turkey, the economics of the resources are decisive when it comes to the assessment of attractive cooperation opportunities. Due to the fact that most important renewable resources have low variable generation costs, the focus with regard to cost comparisons should be laid on fixed generation costs. In figure 4, the fixed costs per unit of generated electricity in North Africa, Turkey, and the Western Balkans are contrasted against the EU28 average in relative terms at technology level (i.e. for wind, solar PV, CSP and hydro). It should be noted that the costs in this calculation only contain



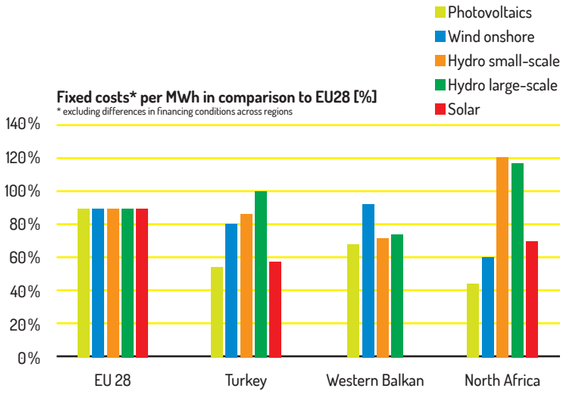
❶ COMPARISON OF THE REALISABLE LONG-TERM (2050) Potential of wind onshore in EU28 countries with those of North Africa, Turkey and Western Balkans



❷ COMPARISON OF THE REALISABLE LONG-TERM (2050) potential of photovoltaics in EU28 countries with those of North Africa, Turkey and Western Balkans



❸ COMPARISON OF THE REALISABLE LONG-TERM (2050) potential of concentrated solar thermal power (CSP) in selected EU28 countries with those of North Africa and Turkey



4 COMPARATIVE ADVANTAGE OF SELECTED RES compared to EU28 average values of fixed costs per energy unit

overnight investment costs and exclude possible differences in financing conditions. According to this comparison, the fixed costs per unit of generated electricity for PV panels are on average around 20 to 50% lower in assessed neighbouring countries than within the EU28. For example, for wind power plants, North Africa turns out to have significant cost advantages. The Western Balkans show comparatively more attractive conditions for hydro power units.

It should be stressed that the cost comparison presented in Figure 4 is mainly based on differences in resource qualities. To get a holistic picture on the comparative competitiveness of RES in neighbour regions of the EU the necessary support costs have to be taken into account. These costs vary according to region, time and technology and are determined by the difference of long-term marginal costs and its marginal value. With regard to the cost side that is mainly characterised by the installation costs, also financing costs including the evaluation of country-specific risks as well as additional costs stemming from necessary infrastructure as in the case of North Africa need to be considered. Concerning the benefits, the market values of the generation are decisive. This value is significantly influenced by the fact whether a certain technology has a dispatchable or variable output, respectively.

In any case, the figures presented above provide a clear indication that there might be a case for European Member States to be interested in developing new renewable energy projects in neighbouring countries as a way to partially fulfil their RES targets in a more cost-effective manner. Additionally, besides a purely economic driver, enhanced RES-E cooperation can lead to other benefits for both Europe and neighbouring countries:

Potential drivers for RES-E cooperation for Europe

- Achieve RES and Climate change targets more cost-efficiently
- Foster stabilizing economic relations with neighbouring countries
- Open new market opportunities
- Diversify energy portfolio & supply regions - increasing security of supply.
- Technology transfer and capacity building
- Get flexible renewable power supply to complement own variable RES-E (eg: CSP)

THE BETTER PROJECT

- **Full title:** Bringing Europe and Third Countries closer together through renewable energies
- **Year of implementation:** July 2012 – May 2015
- **Funding programme:** European Commission, EASME; Intelligent Energy Europe (IEE)
- **www.better-project.net**
- **BETTER consortium:** CIEMAT, DLR, ECN, NTUA, OME, PIK, TU-WIEN, JOANNEUM RESEARCH, UNDP
- **Project Coordinator:** Natalia Caldés (CIEMAT)

Potential drivers for RES-E cooperation for Neighbouring countries

- Create new jobs and industrial opportunities
- Foster technology development and domestic know how
- Create income from domestic resources
- Reinforce the existing economic and political relationships with the EU
- Contribute to the decarbonisation of the domestic energy mix
- Create economies of scale in RES-E deployment

There might be a case for European Member States to be interested in developing new renewable energy projects in neighbouring countries.

Despite the expected benefits, since 2009, not a single Article 9 project has been implemented and the prospects until 2020 are quite limited. Two key reasons for this are, firstly, the mismatch between demand and supply, and secondly, the limited interconnection capacity between Europe and neighbouring countries.

At present, there is almost no demand for RES-E imports to Europe as most Member States believe they can reach their RES target domestically. On the other hand, neighbouring countries' increasing internal electricity demand and the need to reinforce their electricity systems limit their capacity to generate RES-E surplus that could potentially be exported to Europe. Furthermore, the physical import requirement currently represents an additional hurdle as very limited interconnections exist between Europe and neighbouring countries

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and the existing interconnection capacity within many Member States is also a limiting factor.

Additionally, since 2009 there have been various unforeseen events which have not been conducive for the implementation of cooperation mechanisms. Among others, events such as the Eurozone crisis have led to a reduction in energy demand, indirectly making it easier for some EU Member States to achieve their 2020 RES target domestically. Secondly, the cost decline of domestically available RES-E in the EU has reduced the cost advantage of RES-E imports from neighbouring countries to the EU. Third, following the Russia-Ukraine crisis, energy security concerns are now at the top of energy policy priorities. In this sense, following the Energy Union package in February 2015, the EU has taken steps to revitalize energy cooperation with neighbouring countries as a way to improve energy security (but mostly focusing on fossil fuels). Finally, in some neighbouring countries, episodes of civil unrest have led to higher country risks and financial costs, resulting in scepticism from foreign investors.

Given the fact that RES-E expansion in neighbouring countries is a necessary condition for RES-E exports to Europe to occur, **BOX 1** displays the most relevant barriers for cooperation distinguishing between identified challenges for renewables expansion in neighbouring countries (left column) and RES-E trade/exports (right column).

A shortcoming of the current policy framework has been clearly highlighted by the BETTER project: in the short term, challenges seem to outweigh the drivers. However, in the medium to long term the following questions arise: *Under what conditions would the drivers outweigh the challenges? Will there be any cooperation opportunities beyond 2020? If so, where, when, what and how?* The integrated assessment sheds some light to those questions and its overarching conclusions are summarized below.

BOX 1

CHALLENGES FOR ENHANCED COOPERATION BETWEEN EU AND NEIGHBOURING COUNTRIES

CHALLENGES FOR RES-EXPANSION IN NEIGHBOURING COUNTRIES

- The legal and regulatory frameworks need further development in order to attract private investors, particularly in North Africa and the Western Balkans. Although there are binding targets for RES in most countries, in many cases these are implemented rather reluctantly.
- Some technical barriers associated to fragile electricity systems still persist (eg: weak grid infrastructures). This is a very important challenge in the WB that results in supply shortages, high import costs, economically expensive blackouts and load shedding.
- The actual socio-economic benefits from RES deployment do not always match the expectations as the right policies (R&D, industrial, etc) must be in place to tap the full socio-economic benefits.
- High upfront costs and lack of financing mechanisms.
- Electricity prices are still politically defined and high fossil fuel subsidies persist.
- Lack of clear political commitment to RES-E.
- Social acceptance issues. Path dependencies, especially in countries rich in fossil fuel, can be deeply rooted and institutionalized in the whole society. Additionally, unless the socio-economic and environmental benefits from RES-E deployment are understood by citizens, public opposition may arise.

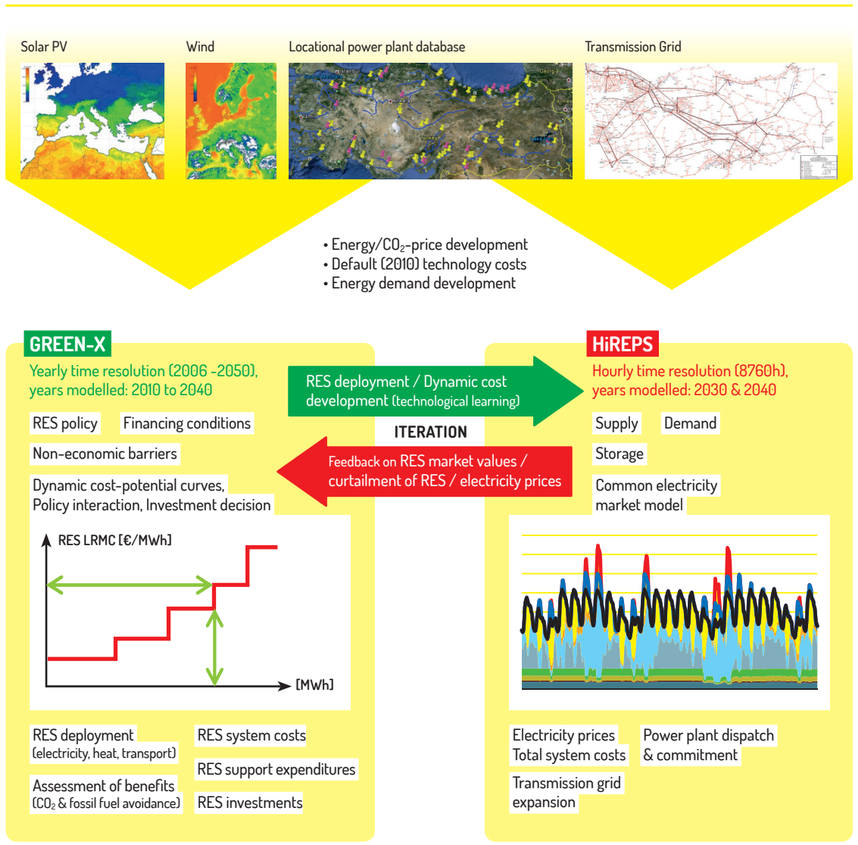
CHALLENGES FOR RES-E TRADE

- Current energy policy priorities in the EU and in neighbouring countries are not yet fully aligned.
- Limited supply (i.e. electricity surplus in neighbouring countries) and limited demand (i.e. Member States with difficulties to meet their targets nationally that are willing to buy).
- Existing interconnections within the EU as well as to the neighbouring countries are limited. The required ones in the case of large-scale exchange are not yet planned, nor built.
- Despite EU RES targets have been set for 2030, uncertainty about the post 2020 RES framework still persists.
- Export projects are unattractive for investors for various reasons (e.g. financing remains an issue, a specific export regime clarifying issues like grid access, capacity allocation rules, congestion management, or traceability of green electricity does not exist).
- Mutual benefits (and costs) of RES-E cooperation are not fully understood, more insights are needed to understand these from the various perspectives (i.e. importer, exporter and transit country perspective).
- Transit countries' interests must be accounted for.

FUTURE PROSPECTS FOR RES-E COOPERATION BETWEEN EU AND NEIGHBOURING REGIONS

The integrated assessment[3] conducted in the BETTER project serves as an overarching top-down approach to identify opportunities for RES cooperation under varying policy pathways in pan-EU scenarios. These scenarios include the 28 EU Member States and North Africa, Turkey and Western Balkan regions as cooperation partners. The approach used for the integrated model-based assessment in the BETTER project combines different dimensions:

- A comprehensive scenario-based assessment of prospects for RES cooperation from the integrated (top-down) perspective has been undertaken with TU Wien's Green-X model. This **techno-economic policy analysis** acted as key basis for the overall evaluation of prospects for RES cooperation in the enlarged geographical context (EU plus third countries). It allowed for identifying monetary savings associated with enhanced RES cooperation as well as resulting changes in costs, expenditures and benefits by region that come alongside with the changes in installed RES capacities and generation across the assessed regions.
- Complementary to above and specifically for the electricity sector, grid and transmission needs or constraints, respectively, together with the physical integration possibilities were evaluated from a technical perspective in a **power-system analysis**, done by use of TU Wien's HiREPS model.

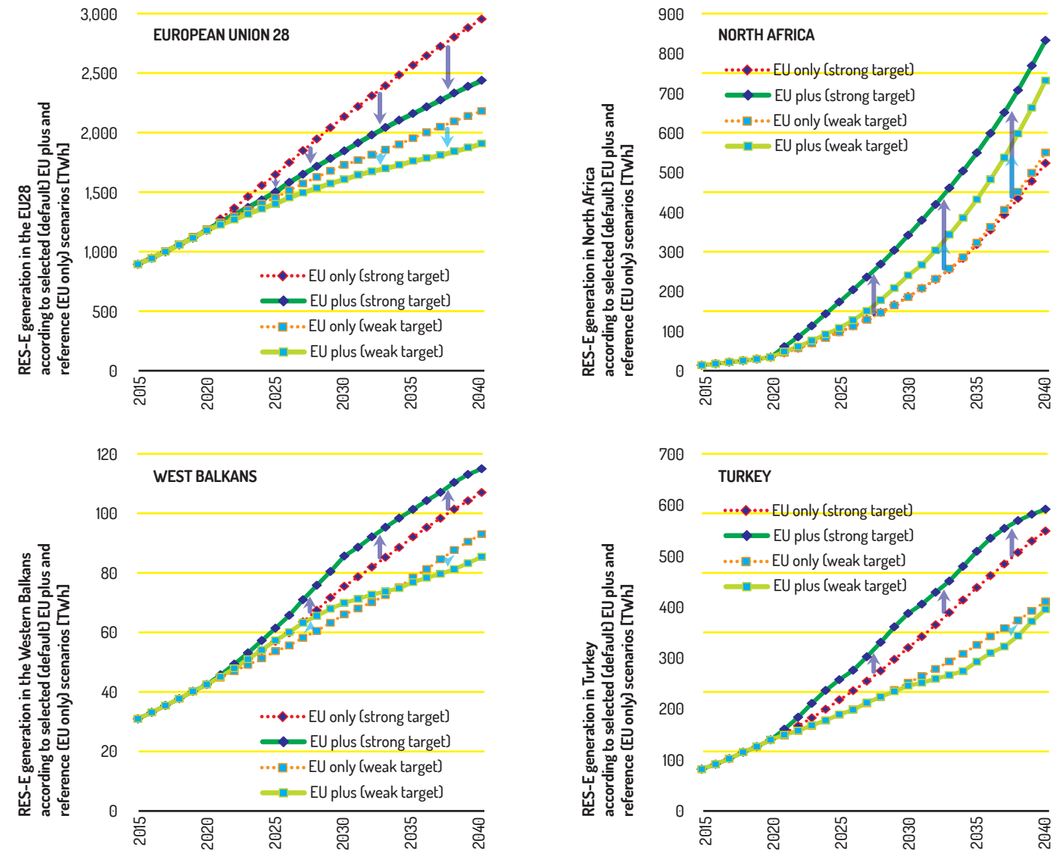


5 MODEL COUPLING BETWEEN GREEN-X AND HIREPS in the integrated assessment of the BETTER project

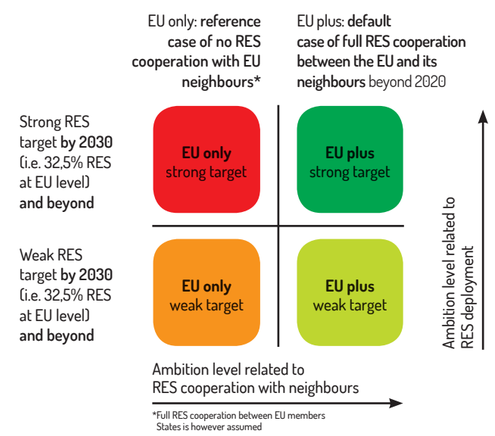
Figure 5 provides a graphical overview on the interplay of both models. Both models were operated with the same set of general input parameters, however in different spatial and temporal resolution. Green-X delivers a first picture of renewables deployment and related costs, expenditures and benefits by country on a yearly basis (2010 to 2040). The output of Green-X in terms of country- and technology-specific RES capacities and generation in the electricity sector for selected years (2030, 2040) served as input for the power-system analysis done with HiREPS. Subsequently, the HiREPS model analysed the interplay between supply, demand and storage in the electricity sector on an hourly basis for the given years. The output of HiREPS was then fed back into the RES investment model Green-X. In particular, the feedback comprised the amount of RES that can be integrated into the grids, the electricity prices and corresponding market revenues (i.e. market values of the produced electricity of variable and dispatchable RES-E) of all assessed RES-E technologies for each assessed country. Future scenarios were defined along two dimensions; firstly, with respect to the EU RES target ambitions, and secondly, choice of cooperation strategy. For simplicity, figure 6 shows only four different possible future pathways.For the ambition level related to the future RES expansion in Europe, two distinct RES pathways are presented in this Roadmap for 2030 (and beyond), one following a strong RES target for 2030 (i.e. 32.5% as RES share in gross final energy demand at EU level), and one reflecting the current policy thinking, aiming for a 2030 RES share of 27%.

Concerning the second dimension, two scenarios are distinguishable:

1. **Reference cases** (also referred to as EU only scenarios): RES cooperation only within the EU, i.e. no cooperation between EU Member State and the neighbouring regions.
2. **Default cases** (also referred to as EU plus scenarios): these scenarios assume full RES cooperation and across the EU as well as all three case regions (North Africa, Western Balkans and Turkey).



7 DOMESTIC RES-E GENERATION by region according to the EU plus (full cooperation) and reference (EU only-i.e. cooperation within the EU) scenarios



6 POSSIBLE FUTURES FOR RES COOPERATION overview on (selected) assessed cases

Results from the integrated assessment show that, irrespectively of the RES ambitions, the EU domestic RES-E deployment is substituted to a certain extent by RES-E imports when cooperation is made possible. In the time frame to 2030, the share of domestic RES generation in total energy consumption is 1 percentage point higher in the EU plus scenario compared to the EU only scenario. In the time frame to 2040, the difference is 3 percentage points.
When it comes to renewable energy deployment in neighbouring regions and as displayed in figure 7, the EU only scenario predicts a linearly increasing RES deployment in the West Balkans up to 2040 that ranges between roughly 54% and 61% of in gross final energy demand, depending on the overall ambition level concerning RES. In the EU plus scenarios, this share is a bit lower for the weak target scenario in the final period, e.g. the order of 51% instead of 54% by 2040 while in earlier years the opposite trend is applicable – i.e. RES deployment is higher in the case of full cooperation than under reference conditions. This implies that, following a conservative pathway for RES, the West Balkan Contracting Parties of the Energy Community offer attractive opportunities for RES investments in the short- to mid-term while other neighbours, in particular North African countries, offer a more viable long-term perspective. In the case of a strong target, the attractiveness of investing more than needed

ABOUT BETTER

Over the last thirty three months, while acknowledging and adapting to a changing geopolitical environment, the BETTER consortium has attempted to shed some light to the above mentioned challenges by addressing RES cooperation between EU and neighbouring countries in several dimensions. While the starting point of the project has been Article 9 of the RES directive 2009/28/EC, the project has assessed renewable energy cooperation opportunities and challenges in a broader way. In this context, the core objective of BETTER has been to assess, through case studies, stakeholder involvement and integrated analysis, to what extent cooperation with neighbouring countries can help Europe Achieve its RES targets in 2020 and beyond, trigger the deployment of RES electricity projects in third countries and create synergies and win-win circumstances for all involved parties.

The case studies focusing on North Africa, the Western Balkans and Turkey have investigated the technical, socio-economic and environmental aspects of RES cooperation. Additionally, an integrated assessment has been undertaken from the *EU plus third countries* perspective, including a quantitative cost-benefit evaluation of feasible policy approaches as well as strategic power system analyses. Impacts on the achievement of EU climate targets, energy security, and macro-economic aspects have been analysed.

For the BETTER project to become an action oriented project, the role and involvement with stakeholders has been prominent and OME has played a pivotal role in this respect. Proof of this is that over the last thirty three months, more than 300 bilateral meetings have taken place with government officials, private sector as well as civil societyrepresentatives from all studied regions. Additionally more than ten large dissemination and stakeholder consultation events have taken place in Turkey, North Africa, West Balkans and across Europe, being the last one of these events the final conference at the European Parliament on March 3rd 2015.

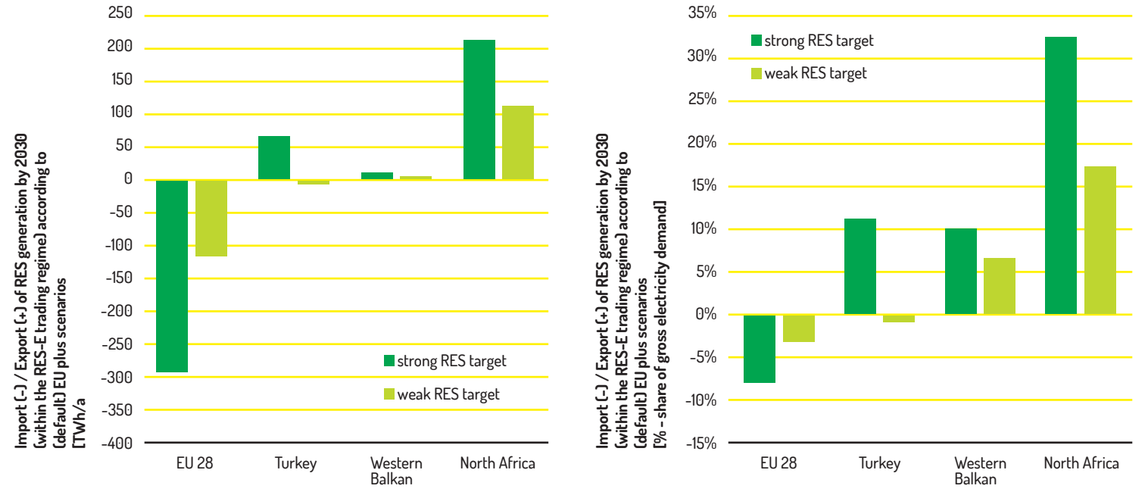
As a result of this extensive work, the BETTER project has contributed to generate and disseminate extensive knowledge to advocate in favour of renewable energies deployment and cooperation across Europe and Neighbouring countries while taking into consideration the views from the various actors at play. More than forty reports covering various relevant topics are available in the project website (http://www.better-project.net/content/results). One of the most relevant outcomes has been a policy package, consisting on one action plans per region, guidelines for project developers as well as a roadmap with concrete policy recommendations for both EU and neighbouring countries on how to foster renewable cooperation within 2020 and beyond.

domestically is applicable throughout the whole assessment period – in other words, West Balkans would act as virtual exporter to the EU28 until 2040. In the case of a weak target, Turkey would become an importer under a full cooperation (EU plus scenario) since domestic RES deployment is then lower compared to the reference case of no cooperation with the EU28 (EU only scenario). Thus, North Africa would act under these circumstances as key host, exporting physically to the EU28 and the Energy Community (presumably including Turkey). Contrarily, assuming a strong RES target for 2030 and beyond and full cooperation (EU plus scenario), Turkey would become a major host for investments in RES, achieving a consistently higher RES share in comparison to the reference case (EU only scenario), that lies roughly two to four percentage points below the ones for the EU plus scenario.

When it comes to the results in terms of the amounts that could be traded, figure 8 shows that for 2030, the EU would import roughly 300 TWh in 2030 under a strong RES target according to full RES cooperation (EU plus) scenarios. Turkey would (virtually) export around 68 TWh in 2030 under a strong target, whereas it would even be a net importer in a weak target scenario. The West Balkan countries exhibit less distinct scenarios in 2030. A strong target leads to the virtual export of around 11 TWh whereas the countries remain (small) exporters under a weak target by 2030. For North Africa a clear trend can be identified: A strong target leads North Africa to in that case physically export quite a substantial amount of renewable electricity: 216 TWh in 2030 as compared to roughly half of that amount (i.e. 115 TWh in 2030) when a weak RES target is assumed.

In a nutshell, the main results from the comprehensive integrated assessment work can be summarized as follows:

1. **There are significant RES-E export opportunities** from the neighbouring regions to the EU and the associated economic benefits for both importer and exporter are large.
2. **In the 2020 timeframe,** there is no real basis for exploiting Article 9 cooperation, because there is no demand for imports from Member State side and the neighbouring regions have no capacities available for exports as (in most cases) their electricity demand is rising too fast.
3. **Post 2020 RES-E** exports to the EU will likely come mainly from North Africa, as the RES-E potential there is by far the largest of all neighbouring regions.
4. **EUs 2030 RES policy framework** as well as post 2030 RES policy framework will play a key role in determining the need for and attractiveness of RES-E exports to the EU. A weak target and/or governance framework may leave the large cost-savings potential of international RES-E cooperation unused.
5. **Robust business opportunities** for RES-E exports/imports will depend on the EU's seriousness on achieving its 2050 decarbonisation goals, on the political willingness to partially base its supply on RES-E imports from neighbouring regions, and on the exporters' willingness to export RES-E to the EU.
6. **Western Balkans** is the region more likely to host the first project of this type because of various reasons including the existing interconnections as well as the geographical and increasing regulatory proximity.



8 (VIRTUAL OR PHYSICAL) EXCHANGE OF RES VOLUMES BY 2030
in absolute terms (TWh) and in relative terms (% - share of domestic gross electricity demand) according to EU plus (full cooperation) scenarios following a strong or weak RES target

POLICY RECOMMENDATIONS TO ENHANCE RES-E COOPERATION BEYOND 2020

For mutually beneficial cooperation projects to materialize in the future, a set of general policy recommendations for the EU and neighbouring regions have been identified[4].

In the time frame until 2020, Europe should provide more clarity on the 2030 energy and climate framework. In this respect, we believe that Europe should show its determination and ambition in the next COP by aiming for more stringent climate targets. Additionally, Europe must quickly define its post 2020 governance structure to reduce uncertainties that currently prevent MS from clearly defining its strategy on how to meet the post 2020 RES targets. Finally, Europe must speed up efforts to reach the 10% interconnection target within the EU as this is currently jeopardizing many member states from developing joint projects with physical transfer within Europe as well as with neighbouring countries. Similarly, EU should consider developing and implementing an EU-wide framework to conduct pre-feasibility studies for appraisal of realistic RES-E cooperation that not only take into account the techno-economic feasibility of the project but also its environmental, social en economic impacts for both Europe and neighbouring countries at the national and local level.

While working towards building the EU'S internal energy market, more efforts should be devoted to raise awareness among national and regional policy makers as well as civil society about the wider benefits and drivers for RES-E cooperation in order to create support and willingness for such cooperation. Simultaneously, the EU should continue to foster and enhance not only dialogue but the various forms of cooperation around renewable energies.

Neighbouring regions should keep advancing on improving the legal and regulatory framework for RES-E expansion as well as their national, regional and interconnection grid infrastructure with the EU (through ENSO-E). Simultaneously, neighbouring countries should advance on the assessment of the potential co-effects of RES-E deployment as well as to identify and implement the required measures and policies to maximize the full economic, social and environmental potential effects.

In the time frame post 2020, EU should consider RES-E imports from neighbouring regions as a way to meet its ambitious decarbonisation objectives by 2030 and 2050, contribute to improve EU energy security, contribute to Europe's international cooperation efforts in neighbouring regions (as a way to create jobs, income opportunities, contribute to build a sustainable energy mix, etc.). In this sense, the EU should develop an appropriate, clear and appealing legal framework to foster RES-E imports. Simultaneously, based on the results from comprehensive pre-feasibility studies and together with the relevant neighbouring countries stakeholders, jointly develop new RES-E projects for exports in North Africa, Turkey and Western Balkans. In order to avoid undesirable outcomes, the EU should develop environmental and social safeguard standards for RES-E imports in order to ensure that the RES-E projects lead to positive socio-economic and environmental effects in exporting countries, at national, regional and local levels.

In neighbouring regions, 2020 RES targets should be defined and pursued to provide certainty signals to investors and to avoid higher fuel shares as a result of RES-E exports. Together with Europe, more interconnections should be planned and developed. In order to attract investment, de-risking measures should be implemented (such as PPA). Additionally, civil society should be engaged, participate and benefit from the development of RES-E projects at all levels ●

[1] The present article summarises the work conducted throughout the entire project duration, carried out by the entire BETTER consortium. It is based on several deliverables, particularly the Integrated Assessment, and the final Roadmap. The authors gratefully acknowledge the contribution of all BETTER consortium partners involved in the project

[2] The realisable (technical) potential represents the maximal achievable fraction of the overall technical potential assuming that all existing barriers can be overcome and all driving forces are active. Thereby, general parameters as e.g. market growth rates, planning constraints are taken into account. It is important to mention that this potential term must be seen in a dynamic context – i.e. the realisable potential has to refer to a certain year (e.g. 2050 as discussed here)

[3] For a more detailed description, see Resch et al. (2015): *BETTER – Integrative assessment of RES cooperation with third countries* (D6.4), see: http://www.better-project.net/content/results

[4] Region-specific recommendations have been developed in the regional action plans, available from the project website: http://www.better-project.net/content/results

Communications

Houda Ben Jannet Allal
OPENING
OME and UNDP high-level policy discussion on renewable energy cooperation, BETTER project
3 March 2015, Brussels, Belgium

Sohbet Karbuz
PRESENTATION
TUROGE – Turkish Oil and Gas Conference on East Mediterranean Gas
18 March 2015, Ankara, Turkey

Houda Ben Jannet Allal
PRESENTATION
High-level ministerial panel at the Arab launch of the United Nations Decade of Sustainable Energy for All
24 March 2015, Amman, Jordan

Bruno Lescoeur
KEYNOTE
Offshore Mediterranean Conference
25 March 2015, Ravenna, Italy

Sohbet Karbuz
PRESENTATION
International Strategic Studies Institute on East Mediterranean gas developments
4 April 2015, Ankara, Turkey

Sohbet Karbuz
PRESENTATION
FLAME 2015 Conference on East Mediterranean gas
15 April 2015, Amsterdam, Netherlands

Bruno Lescoeur
KEYNOTE
Res4Med Conference on Delivering renewable energy investments in Egypt: challenges and opportunities
20 April 2015, Ankara, Turkey

Houda Ben Jannet Allal
KEYNOTE
Mediterranean Energy Trends, MEDGRID dissemination
21 April 2015, Brussels, Belgium

Houda Ben Jannet Allal
PRESENTATION
Energy Perspectives in the Mediterranean region: OME vision and news, MEDELEC 23rd Annual Meeting
5 May 2015, Brussels, Belgium

Houda Ben Jannet Allal
PRESENTATION
Launch of the three Euro-Med. Platforms organized by the Moroccan ministry of Energy, Mines, Water and Environment
6 May 2015, Rabat, Morocco
In partnership with the co-presidencies of Union or the Mediterranean (UfM) and the European Union

Sohbet Karbuz
PRESENTATION
World Energy Regulators Conference on Fuel Mix Change in the Mediterranean Region
27 May 2015, Istanbul, Turkey

Bruno Lescoeur
KEYNOTE
Aspen Energy Forum
6 June 2015, Rome, Italy

Emanuela Menichetti
PRESENTATION
Mediterranean Energy Perspectives, at the International Conference on Unlocking the renewable energy investment opportunities in the Mediterranean: a Regional perspective
11 June 2015, Milan, Italy
Organized by RES4Med and MaGER/ Bocconi University

Bruno Lescoeur
KEYNOTE
Launching of the UfM Platform on Gas
11 June 2015, Brussels, Belgium

Bruno Lescoeur
OPENING / KEYNOTE / CLOSING
EC-OME Conference: Euro-Med. Natural Gas Market: Prospects, challenges and opportunities
11 June 2015, Brussels, Belgium

Houda Ben Jannet Allal
PRESENTATION
EC-OME Conference: Euro-Med. Natural Gas Market: Prospects, challenges and opportunities
11 June 2015, Brussels, Belgium

Sohbet Karbuz
PRESENTATION
Euro-Med. Oil and Gas Exploration and Prod. Summit
8-9 October 2015, Malta

Houda Ben Jannet Allal
INTERVIEW
Euro-Med. Energy Cooperation and the Newly Established Platform for Gas
13 October 2015
Interview by the Greek Energy Forum, published in European Energy Review Journal @ http://www.europeanenergyreview.eu/euro-mediterranean-energy-cooperation-and-the-newly-established-platform-for-gas/

Sohbet Karbuz
PARTICIPATION
Moderated a panel on the role of Turkey in regional gas trade and hub developments, Turkey Energy Summit
12-13 October 2015, Konya, Turkey

Houda Ben Jannet Allal
KEYNOTE
Panel Session on The Euro-Med. platforms, AEIT annual Conference – 2015, A sustainable development in the Mediterranean Area
14-16 October, 2015, Naples, Italy

Bruno Lescoeur
KEYNOTE
Mediterranean Region and the Challenge of Climate Change Conference
15 October 2015, Milan, Italy
Organized by Edison in cooperation with OME, WEC, IAI and OCP

Houda Ben Jannet Allal
PRESENTATION / CLOSING
What should we expect: energy and climate scenarios and perspectives, Mediterranean Region and the Challenge of Climate Change Conference
15 October 2015, Milan, Italy
Organized by Edison in cooperation with OME, WEC, IAI and OCP

Houda Ben Jannet Allal
OPENING / CO-MODERATION
Final session of the workshop From Tunis to Paris: Fostering the transition to a low-carbon energy future in North Africa
20 October 2015, Tunis, Tunisia
Organized by OME's Renewable Energy Committee in cooperation with STEG and ANME

Emanuela Menichetti
PRESENTATION / CO-MODERATION
Main energy and emission trends in the South East Mediterranean: a scenario analysis, workshop From Tunis to Paris: Fostering the transition to a low-carbon energy future in North Africa
20 October 2015, Tunis, Tunisia
Organized by OME's Renewable Energy Committee in cooperation with STEG and ANME

Houda Ben Jannet Allal
KEYNOTE
Energy Perspectives in the Mediterranean & the UfM Platform on Gas at the 13th Tunisian Petroleum Exploration and Production Conference
26 October 2015, Tunis, Tunisia

How to reach OME office

LES GRANDS MAGASINS

LA MADELEINE

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ACCESS BY METRO LINES
M 7 9 Chaussée d'Antin - La Fayette
For both metros, take **Sortie 4**, the exist is almost in front of the office building

ACCESS FROM AIRPORT

BY TRAIN
OME Office can be accessed from both airports Charles de Gaulle Roissy or Orly as following and takes about one hour:

- From **Charles de Gaulle Roissy** or **Orly**, take **RER B**
  > stop at Châtelet station
- Connect by taking **RER A**
  > stop at Auber
  Exit 3 Rue des Mathurin
  5-minute walk to reach OME

BY BUS (Roissybus)

- From/to **Charles de Gaulle Roissy**
  > direction to Opéra, Paris.
  Stop rue Scribe.
  5-minute walk to the office.

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