



European
University
Institute

ROBERT
SCHUMAN
CENTRE FOR
ADVANCED
STUDIES

WORKING PAPERS

RSCAS 2014/39
Robert Schuman Centre for Advanced Studies
Florence School of Regulation

In Search of a 'Platform' for Mediterranean
Renewables Exchange: 'EU-Style' System vs. a
'Corridor-by-Corridor' Approach

Nicole Ahner and Jean-Michel Glachant

European University Institute
Robert Schuman Centre for Advanced Studies
Florence School of Regulation

**In Search of a ‘Platform’ for Mediterranean Renewables
Exchange:
‘EU-Style’ System vs. a ‘Corridor-by-Corridor’ Approach**

Nicole Ahner and Jean-Michel Glachant

This text may be downloaded only for personal research purposes. Additional reproduction for other purposes, whether in hard copies or electronically, requires the consent of the author(s), editor(s). If cited or quoted, reference should be made to the full name of the author(s), editor(s), the title, the working paper, or other series, the year and the publisher.

ISSN 1028-3625

© Nicole Ahner and Jean-Michel Glachant, 2014

Printed in Italy, April 2014

European University Institute

Badia Fiesolana

I – 50014 San Domenico di Fiesole (FI)

Italy

www.eui.eu/RSCAS/Publications/

www.eui.eu

cadmus.eui.eu

Robert Schuman Centre for Advanced Studies

The Robert Schuman Centre for Advanced Studies (RSCAS), created in 1992 and directed by Brigid Laffan since September 2013, aims to develop inter-disciplinary and comparative research and to promote work on the major issues facing the process of integration and European society.

The Centre is home to a large post-doctoral programme and hosts major research programmes and projects, and a range of working groups and *ad hoc* initiatives. The research agenda is organised around a set of core themes and is continuously evolving, reflecting the changing agenda of European integration and the expanding membership of the European Union.

Details of the research of the Centre can be found on:

<http://www.eui.eu/RSCAS/Research/>

Research publications take the form of Working Papers, Policy Papers, Distinguished Lectures and books. Most of these are also available on the RSCAS website:

<http://www.eui.eu/RSCAS/Publications/>

The EUI and the RSCAS are not responsible for the opinion expressed by the author(s).

Florence School of Regulation

The Florence School of Regulation (FSR) is a partnership between the Robert Schuman Centre for Advanced Studies (RSCAS) at the European University Institute (EUI), the Council of the European Energy Regulators (CEER) and the Independent Regulators Group (IRG). Moreover, as part of the EUI, the FSR works closely with the European Commission.

The objectives of the FSR are to promote informed discussions on key policy issues, through workshops and seminars, to provide state-of-the-art training for practitioners (from European Commission, National Regulators and private companies), to produce analytical and empirical researches about regulated sectors, to network, and to exchange documents and ideas.

At present, its scope is focused on the regulation of Energy (electricity and gas markets), of Communications & Media, and of Transport.

This series of working papers aims at disseminating the work of scholars and practitioners on current regulatory issues.

For further information

Florence School of Regulation

Robert Schuman Centre for Advanced Studies

European University Institute

Via Boccaccio, 151

I-50133 Firenze

Tel.: +39 055 4685 751

Fax: +39 055 4685 755

E-mail: fsr@eui.eu

<http://www.eui.eu/RSCAS/ProfessionalDevelopment/FSR/>

Abstract

Recent years have seen increasing efforts in Europe to win the Southern Mediterranean countries as new suppliers of energy from renewable sources (RES-E). Massive amounts of green electricity that is generated in the Middle East and the North Africa (MENA) regions might someday be consumed in the EU. However, beyond the stark invocation of an Euro-Mediterranean RES-E exchange, less attention has been given to its actual implementation. This article takes stock of the applicable EU regime that governs the transfer of green electricity via Maghreb-EU corridors. In our investigation, centre stage is given to Article 9 of Directive 2009/28/EC (RES Directive), which introduced the opportunity for the EU Member States to receive credit towards their 2020 targets for clean power generated in third countries, provided that it is consumed inside the EU. We will argue that the EU, in practice, is moving towards a 'corridor-by-corridor' approach, rather than towards a fully-fledged 'EU-style' system.

Keywords

Renewables Directive, Cooperation Mechanism, Renewables Exchange, Mediterranean Basin

I. Introduction

This article is in search of a ‘platform’ for Mediterranean RES-E exchanges.¹ A ‘platform’, in this context, is understood as a ready-to-use legal and regulatory framework for the cross-border trade of electricity generated in the MENA region using renewable sources. The point of reference for our investigation will be Article 9 of the RES Directive², as this provision constitutes the central pillar of the EU edifice for RES-E imports from third countries. Introduced by the 2009 RES Directive, it establishes the opportunity for the EU Member States to fulfil their 2020 renewables target by using RES-E produced in third countries that is eligible to count toward the Member States’ target compliance. Such flexibility in meeting the national targets has been considered necessary because the 2009 RES Directive - as opposed to its predecessor³ - sets legally binding targets for the Member States that must be achieved by 2020.⁴ Therefore, in taking due account of the fact that the individual targets are not set on the basis of the domestic resource potential, and that a failure to achieve the binding 2020 target constitutes a breach of EU law, the RES Directive alleviates the burden by offering the flexibility of joint projects.⁵

In contrast to cases of bi- or multilateral RES-E projects set up only between Member States where the physical import of the green electricity from one to the other Member State is not absolutely necessary, third country involvement requires the actual physical transfer. In other words, the consumption of the green electricity inside the EU is mandatory in order to count towards the Member States’ targets.⁶ The distinctive feature represented by this physical transfer requirement of Article 9 of the RES Directive creates the need for an adequate regulatory and legal setting. The actual implementation of the Article 9 mechanism requires a platform in order to enable the trade of green electricity across the Mediterranean. Closer scrutiny of the EU framework that is in place discloses that, to date, there is no clear, ready-to-use EU framework. Member States have implemented the provisions into their national laws in very different ways – if at all. On the MENA side, the picture is even more divergent. There are several persistent legal and regulatory gaps that need to be complemented by case-sensitive RES-E-specific trade arrangements. At first sight, several issues are visible that have not been tackled, such as, for instance, the indispensable traceability of the green energy to be transferred, the RES-E nature certification requirements, the measurement of RES volume being RES-E for the downstream support scheme, the adaption of the downstream RES support scheme and the particular cost profile of the upstream RES generation. Moreover, when it comes to transit inside the EU, it is not clear how the RES-immanent priority access within the EU can be ensured for third country RES-E that is only transferred to a given Member State. On the Southern shore, problems arise with regard to green facility certification, the measurement of green generation output and green injections into the grid, congestion management, dispatch priority, balancing rules,

¹ See the companion Policy Brief issued by the Florence School of Regulation: Glachant, Jean-Michel and Nicole Ahner, ‘In Search of an EU Energy Policy for Mediterranean Renewables Exchange: EU-Wide System vs. “Corridor by Corridor” Approach’, 2013/06, October 2013.

² Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, 05.06.2009, OJ L 140/16.

³ Directive 2001/77/EC of 27 on the promotion of electricity produced from renewable energy sources in the internal electricity market, 27.10.2001, OJ L 283/33.

⁴ Note that the interim steps towards the final 2020 target, the so-called trajectories, are not legally binding, but provide an indication of whether the countries are on track and, in case they are not, enable the Commission to ask for adaptations of the countries’ RES-E policies.

⁵ The targets refer instead to the countries’ gross domestic product.

⁶ Note, however, that Art. 9(3) provides an exemption to physical import. Considering the lack of current development, it is not likely that significant amounts of RES electricity will actually be imported into the EU by 2020; however, because of the long lead time required to construct an HVDC link, the RES Directive provides that Member States may receive credit for RES consumed in a third country during the construction of an interconnector that is commenced on or before 31 December 2016 and under certain limited conditions.

and access to the interconnection, just to name a few. In fact, the European Commission (EC) in November 2013 finally reacted, aiming, with its “Guidance on the use of renewable energy cooperation mechanism“ to offer some further insight into how these RES-E exchanges - embedded in the Article 9 mechanism - may work.⁷ However, still, the actual implementation remains far from clear.

In this contribution, which seeks a platform for Mediterranean RES-E exchanges, it will be asserted that the EU, in practice, is moving, and must move, towards a limited energy exchange platform, a bottom-up ‘corridor-by-corridor’ approach, rather than towards a fully-fledged EU-style internal system. In the following discussion, when we speak about a ‘corridor’, we refer to an interface between the third countries and the Member States that are involved. A corridor, in our understanding, comprehends all of the infrastructure, regulation and agreements applicable to RES-E that is generated on one side of the Mediterranean Sea and consumed on the other side. Drawing from the hypothetical case of RES-E imports from Morocco via Spain to France, i.e., the so-called Western Corridor, we will – based on the actual implementation of Art. 9 – try to illustrate what, to date, regulates Mediterranean energy exchanges and what could hamper its realization.

Our findings suggest that non-binding guidance at EU level could be the tool of choice in the short term, i.e., a ‘corridor-by-corridor’ approach that permits the organic development of an EU-MENA energy trade that is much like the development of regional markets within the EU. The EU may rely upon the various regional institutions and organisations involved in EU-MED energy cooperation to first reach regulatory convergence at the regional level, to encourage supranational rule development and to enable Mediterranean RES-E trade initiatives at a later stage. In the long term, a top-down EU-28 approach seems more appropriate. In fact, taking stock of the relevant EC Communications and declarations, one finds that, if the EU institutionalised energy relations with the three North African countries or with any other country, it would rely upon an extension of the existing Energy Community, or on a new ‘MENA/ North African Energy Community’. Whether such an extension of the EU energy *acquis* to the MENA countries will create a utopia may remain a matter of debate.

Now, following this introduction, the context is set out in the next part, which provides a brief overview of the EU energy strategy in the Southern Mediterranean from which our definition of corridors is derived. The subsequent part covers the actual application and/or implementation of Article 9 of the RES Directive in the context of the Western corridor. The analysis of the legal and regulatory framework is not meant to be exhaustive. Instead, it is meant to be illustrative and is limited to the prominent features of joint projects with third country involvement; it provides the reader with a sense of the key issues and themes that will emerge in the near future. The final part presents the key conclusions.

II. ‘Closing of the ring’ vs. corridors

In order to accommodate the additional RES-E generated by projects currently under development in MENA countries, electricity transport capacity between the EU and MENA must be expanded on a vast scale. One multi-facility project alone, the Mediterranean Solar Plan (MSP), is expected to produce 20 GW of new generation capacity.⁸ According to the MEDRING Update published by the Euro-Mediterranean Energy Market Integration Project (MED-EMIP) in April 2010, possible solutions to resolve the current infrastructure disconnect between the EU and the MENA include:

⁷ European Commission, Staff Working Document „Guidance on the use of renewable energy cooperation mechanism”, 5.11.2013, SWD(2013) 440 final, p. 24 ff.

⁸ The MSP is one of the main efforts set forth in the founding declaration of the Union for the Mediterranean (UM), whose membership includes the EU-27, MENA, the League of Arab States and the eastern European countries.

1. 'Closing the ring' by means of further development of interconnector capacity concentrated in the east (Gibraltar) and the west (the Bosphorus), which would permit the transport of power between MENA and the EU;
2. A 'corridor approach' involving the construction of direct North-South (MENA-EU) submarine HVDC cables grouped into 'corridors' capable of accommodating several GW each; or
3. A combination of 1 and 2.⁹

Today, closing the ring is still complex due to the poor condition of the grids in several MENA countries and the consequent challenges in effectively interconnecting these grids. As a first step, South-South interconnections need to be enhanced, both in terms of 'hardware' (infrastructures) and in terms of 'software' (energy exchanges based on clear cross-border trading rules and flows integration) in order to develop mutually beneficial commercial transactions that then lead to a more integrated regional platform. South-South interconnections must develop a South-South market, probably as a prerequisite to North-South interconnection projects. Many of the major markets in the Northern Mediterranean have a national or regional power exchange. Similarly, some Southern Mediterranean countries might move closer to the creation of a sub-regional market that can be integrated with the Northern markets at a later stage. To successfully integrate Northern and Southern markets, sub-regional integration and cooperation needs to be deepened. However, today, most of the Southern electricity systems are still vertically integrated and/or state-owned monopolies. As a result, foreign players or national newcomers are discouraged from participating in those systems.

Unfortunately, there is additional complexity on the EU side. Until 2020, there is no real driver to accelerate the large-scale deployment and importation of green energy from the South to the EU. This may prove useful in meeting the new 2030 RES-E targets (aimed at making RES-E less expensive for EU consumers). Only at the horizon of 2050, where many national roadmaps and the EU look for RES-E penetration of at least 80%, the vision of a truly integrated EU-MED energy market could play a major role in RES-E imports to Europe.

However, unlike the closing of the ring, the corridor approach¹⁰ appears to be attainable in the near future. 'Corridor approach' might be understood to be an energy system that includes all of the necessary qualified generation facilities, grid upgrades and regulatory modifications. Each corridor is an interface between one or a few third countries and one or a few EU Member States that are directly involved.

A corridor has three components:¹¹ One is an infrastructure component that includes ample transmission grid capacity in producer countries, consumer countries and, if applicable, transit countries. In contrast to a simple point-to-point interconnection, a corridor links two or more countries or regions using a system of connection that includes transport from the RES-E generation facility to the consumption country. The infrastructure needed to accomplish such transport may include one or more interconnectors, the directly linked transmission grids of the producer country and the consumer country, the indirectly linked transmission grids of any transit country, and any necessary AC/DC transformer stations.

A key feature of a corridor approach to the trading of RES-E between the EU and MENA is a modular regulatory platform:¹² For each corridor, this modular regulatory platform may include from

⁹ MEDRING Update - Volume II, 'Analysis and Proposals of Solutions for the Closure of the Ring and North-South Electrical Corridors', MED-EMIP (Final Draft, April 2010), at p. 88.

¹⁰ The three electricity 'corridors' are the 'Western corridor' from Morocco (and possibly Algeria) to Spain, and further, to France, Portugal and other EU countries, the 'Central corridor' from Tunisia (and possibly Algeria) to Italy and other EU countries, and finally, the 'Eastern corridor' from Turkey to Greece and to other Member States.

¹¹ Michael Cuomo, 'The three components of a corridor', Presentation, Florence School of Regulation, December 2012.

¹² Michael Cuomo, 'The three components of a corridor', Presentation, Florence School of Regulation, December 2012.

one to three components: (1) select provisions of EU energy regulation, (2) national energy regulation and (3) bi-lateral or multi-lateral agreements (contractual framework). Thus, the platform is a flexible regulatory framework that is adaptable to each corridor, according to the exigencies of the relevant countries, depending upon the compatibility of the regulatory frameworks and the market conditions of the relevant countries. Where inconsistencies or gaps exist among the regulations of two or more countries, project-tailored intergovernmental agreements are used to create a platform for effective RES-E trade. For example, in the event that the rules for access to interconnector capacity in a MENA country do not agree with the EU regulatory framework, agreements between the interested parties can be executed to provide access rules that are agreeable to both parties.

Because of this flexibility, corridors that are regulated, to a great degree, by intergovernmental agreements would not require a high degree of harmonisation of the laws of each country.¹³ A full harmonisation of electricity legislation among EU and MENA countries, would require a level of regulatory accord that does not even exist in the EU nearly two decades after liberalisation. The timely achievement of the 2020 targets demands regulation that is adaptable by the limited number of affected parties, i.e., producer countries, consumer countries (and possibly transit countries (if any)) and private entities, such as project sponsors and their lenders. Further, the full harmonisation of national energy regulatory frameworks also would risk the loss of the flexibility that is needed to adjust to what works and what does not work as each corridor matures.

III. Joint projects between Member States and third countries under Art. 9 of the RES Directive

Article 9 of the RES Directive does permit one or more Member States to cooperate with third countries and private operators in developing and operating RES-E generation projects located in third countries. RES-E produced via this ‘joint cooperation’ mechanism will count towards the national targets of the Member States, provided that the projects adhere to the requirements of Article 9 of the RES Directive. To qualify for inclusion in the national target amount, the RES-E must be produced in an installation constructed, or refurbished, after 25 June 2009, as a joint project and it must be ‘consumed’ in the Member State that claims it as part of its total consumption.¹⁴ In addition, other than investment aid granted to the installation, the RES-E amount must not have benefited from the support scheme of a third country.

Rather than engage in the impossible task of tracing the actual RES-E from generation to consumption, Article 9 uses the following fiction: In order for a specific amount of RES-E generated in a third country to count towards a Member States’ national target, an amount equal to that specific amount must be accounted for at every step of its transport to the consumer country, as follows:

- An amount of electricity that is equal to the claimed RES-E must be firmly nominated to the allocated interconnection capacity by all of the responsible Transmission System Operators (TSOs) in the producer third country, the destination or so-called off-taking country and, if applicable, each transit country;
- An amount of electricity equal to the claimed RES-E must be firmly registered in the schedule of balance by the *responsible* TSO on the EU side of the interconnector; and
- The RES-E production and the nominated interconnection capacity refer to the same period of time.

Statistical transfers allow a Member State to get credit for projects when it invests in the development of an RES-E project located in another Member State, even though all such RES-E is consumed by the

¹³ Similar EC, note 7 above, p. 29 on the content of such framework intergovernmental agreements.

¹⁴ RES Directive, Article 9, Subsections 2(a) and (b).

producer Member State without any cross-border transfer of electricity. Similarly, statistical transfers are available under limited conditions for interconnectors that have a lengthy development period. Member States that are engaged in a qualified project may count RES-E that is produced and consumed in a third country towards their national targets, if:

- Construction must begin by 31 December 2016;
- The interconnector will be operational on or after 1 January 2021, at the earliest;
- Once operational, the interconnector will be used for the export of RES-E for the purpose of achieving the national RES-E targets of the relevant MSs; and
- The quantity of RES-E credited via statistical transfer must not exceed the quantity that will be exported once the interconnector becomes operational.

Notice and other procedural requirements that are included in the Article 9 joint cooperation mechanisms are detailed in the table below.

Table 1:
Outline of the notice and procedural requirements for joint projects with third countries

Joint Projects EU-Third Country <i>Procedural Requirements</i>	
<p>MS = off-taking Member State TC = Third Country</p>	
<p>Notice Requirements <i>ex ante</i> and <i>ex post</i></p>	<p>Notices must be sent <i>ex ante</i> and <i>ex post</i> to the EC: First, a one-time ‘Initial Notice’ and, second, an ongoing ‘Annual Notice,’.</p> <p><u>Initial Notice.</u> Each MS who will count green electricity from a TC installation towards its national target must submit to the EC an Initial Notice containing the following:</p> <ol style="list-style-type: none"> a. a description of the proposed installation (for refurbished installations, it is enough to simply identify the plant); b. the percentage or amount of RES-E that will be credited to the MS’s national target; c. financial arrangements between the MS and the TC (subject to confidentiality requirements); d. duration, in whole calendar years, of the arrangement; and e. the written acknowledgement of points b-d above, as well as the percentage or amount of the installation’s generation capacity that will be reserved for domestic consumption. <p><u>Annual Notice.</u> Within three months of the end of each year, i.e. each March, each MS must notify the EC and the TC of the following regarding the project’s previous year:</p> <ol style="list-style-type: none"> a. the total amount of RES-E produced by the subject installation; b. the amount of RES-E to count towards the national target of the MS; and c. proof of compliance with the ‘Conditions’ discussed below.
<p>Duration</p>	<p>RES-E credits may apply to an MS’s national target only through 2020. The project may then continue, but without benefit to the MS’s national target.</p>
<p>Conditions</p>	<p>To qualify the RES-E as ‘consumed’ in the MS, the following conditions must be met:</p> <ol style="list-style-type: none"> (i) an amount of electricity equal to the RES-E amount is <u>firmly nominated</u> to the allocated interconnection capacity by all <u>responsible</u> TSO’s in: <ol style="list-style-type: none"> a. the TC b. the off-taking MS c. (if applicable) each transit country; (ii) this same amount is ‘<u>firmly registered</u>’ in the ‘<u>schedule of balance</u>’ by the <u>responsible</u> TSO on the EU side of the interconnector; and (iii) capacity nomination date and production date refer to the ‘<u>same period</u>’.

1. Different transpositions of Article 9 in the different Member States

As a Directive, the RES-E Directive requires the transposition of its provisions into national law by the Member States. As in any other case of transposition, this naturally leads to heterogeneity and fragmentation. With respect to Article 9, a transposition also depends upon the decisions of the Member States to provide for joint projects with third countries to import RES-E. Following the initial 27 National Renewable Energy Action Plans not all of the Member countries intend to use extraterritorial RES-E to achieve their targets. In fact, almost all of the 27 Member States intend to fulfil their targets using their domestic RES-E potential at least till 2020. In looking at those countries that are predestined to set up joint projects under Article 9 due to their location, i.e., the Southern European countries, one finds that, from the very beginning, Italy and Spain, in particular, have set the legislative groundwork in motion to enable Mediterranean RES-E exchange.¹⁵

2. Case or 'corridor' study – the Western Corridor in the context of Art. 9

Having said that, we will now turn to the Western Corridor. For reasons of simplicity, the investigation will follow the electricity flow, i.e., we will start with the Moroccan electricity market. We will then point out the problems that derive from the physical import requirement in Article 9, from the moment of generation in Morocco, via the interconnector up into the French grid and involving passage through Spain as a transit-only country. Again, our exercise is aimed at putting Article 9 to the test to illustrate its short-comings and is not meant to be exhaustive.

a. The Moroccan electricity market

The EU internal market has been under construction for 20 years, with its achievement foreseen for 2014/15. At the southern shore of the Mediterranean, there is no similar internal market, but there is a growing appetite for RES-E to be used as a 'gold mine'. In looking at the special case of Morocco, we find that the Office National de l'Electricité (ONE) has been responsible for the generation and transmission of electricity since 1963. It operates as a single buyer and owns the transmission and most of the distribution grid. A Moroccan energy regulator does not yet exist, but will be established by 2014. Morocco is in the process of opening its energy market. However, although this policy decision was made in 2001, little effort has been made to realise it. One measure in 2008 allowed Independent Power Producers (IPPS) to operate power plants of up to 50 MW installed capacity instead of the previous threshold of 10 MW. However, IPPs still heavily depend upon ONE's cooperation, due to the lack of a regulating authority. The other non-ONE producers are restrained by long-term procurement contracts as well. To date, dealing with ONE in its role as a single buyer and operator of the transmission network is still compulsory. Although the Moroccan electricity market will be divided into two parts, an open market segment and a regulated one, ONE holds a monopoly of the transmission, the distribution and the sale of electricity.

¹⁵ For Italy see Decreto Legislativo – 03/03/2011, n. 28 – Gazzetta Uff. 28/03/2011, n. 71, Art. 36. The Italian legislation, for instance, provides further detail regarding the actual implementation of joint projects with third countries to produce and import RES-E as follows: In Italy, joint projects developed for the purpose of achieving the national RES-E targets must be initiated by energy sector stakeholders. The terms of a third country joint project are controlled by an international agreement executed with the third country from which the RES-E will be imported. In order to qualify, the international agreement must contain several specific stipulations. First, the support scheme benefiting foreign RES-E should be of a comparable duration, but with lower amounts than the support scheme benefiting domestic RES-E produced from the same sources by the same types of plants. Deviations from this requirement are possible if a more expensive support scheme is justifiable as a way of avoiding the economic effects of not achieving the national target. Second, the RES-E must be imported in a way that ensures its contribution to the achievement of Italy's national target. Third, the method established in the agreement to measure the amount of imported RES-E must conform to the standards provided in Art. 40 of the decree.

The Moroccan law regarding renewable energies¹⁶ provides regulation that will enable an opportunity for competition in the production of electricity from RES-E, through access to the medium voltage, high voltage and very high voltage national electricity grid to any power producer from RES-E, the possibility of exporting RES-E using the national electricity grid and its interconnections, and the possibility for any developer to build a direct transport line if the national electricity grid or transport interconnection does not suffice. It is noteworthy that allowing energy to be exported while domestic needs are unsatisfied is not the norm.

b. Challenge No 1 deriving from the physical import requirement: traceability

Now, how can RES-E be exchanged between the two different universes comprised of the North and South shores? What are the problems that may hinder such exchanges?

As discussed above, a demonstration of a temporal correspondence is required, i.e., an amount of electricity equal to the RES-E amount must be firmly nominated to the allocated interconnection capacity by all responsible TSO's, in our case in:

- a) Morocco
- b) France
- c) Spain as a transit country.

This means that the nominations of the RES-E that is injected into the Moroccan grid of ONE and the nominations of the injections into the interconnector must *correlate*. This will only work if it is possible to precisely trace the RES-E in Morocco. In fact, insufficient traceability of flows and of the 'greenness' is the first issue that could prevent future RES-E transfers under Article 9. The RES-E needs to be traced at the injections and withdrawals on the basis of nominations (traceability of flows). Moreover, there must be traceability of the quality of the RES-E that is produced and exported, i.e., of its 'being green' (traceability of 'greenness').¹⁷ In order to be suitable for the EU RES-E regime, third countries must provide certification tools and institutions that are adequate and acknowledged by the EU. Starting with the initial step of the production of RES-E in Morocco, we would need to have a certification of the single Moroccan production facility and, in addition, of the RES-E that is produced by this plant. According to the authors' knowledge, thus far, there is no certain tracking mechanism or competent authority in place.

c. Challenge No 2: access

Moroccan grid How can the Moroccan grid be accessed? As outlined in the beginning of this discussion, Moroccan law allows the export of RES-E by both independent producers and by ONE.¹⁸ Grid access is limited to Moroccan exports of RES-E generation, but is not available for the export of conventional fuels. There are open issues or questions that arise in this context that are related to hybrid plants: How can the RES-E and the non-RES-E portions be determined? Also, how can it be proven *ex ante* that the exported energy is derived from renewable sources? Another issue concerns congestion management in the Moroccan grid: So far there is no priority access for RES-E implemented in Morocco such as that in the EU.

Interconnector Morocco-Spain With regard to access to the interconnector Morocco-Spain, similar hurdles must be faced. Again, RES-E priority is at issue; in addition, the certification of greenness, but also, tariffs, taxes, nominations and the measurement must be addressed. Although energy transfers

¹⁶ Law n° 13-09 published in the Official Gazette of March 18, 2010, page 58: Available at <http://www.sgg.gov.ma/>.

¹⁷ Another issue may evolve when there are hybrid plants that produce both RES-E and conventional energy. It is unclear how to determine the proportion of electricity that is produced from renewable sources.

¹⁸ Dahir 1963 and Act 13-09.

are currently occurring through interconnector lines and are increasing more and more due to attractive prices in Spain (oversupply)¹⁹, clear answers are not provided in the applicable laws.²⁰ The current capacity of the interconnector at issue is 2700MW (including safety margins). A second one has been built and a third interconnector is planned with an additional capacity of 700MW. To date, the only actor is ONE. In case there is eventually more than one actor, the relevant law includes rules for capacity allocation.²¹

d. Challenge No 3: preferential access for non-EU RES-E inside the EU

Within the Union, renewable energy systems are entitled by law to preferential access everywhere as dispatch (i.e., pushed into the system and to the consumers), access to the grids (connection and congestion) and indirectly, i.e., access to the interconnections (preceding voluntary exchange through market coupling). Preferential access must be granted to RES-E according to Art. 16 of the RES Directive. The Member States are required to ensure that generators of electricity from RES-E can get access to the grid for electricity produced when the source is available. They must ensure that the law obliges the transmission system operator to give priority access to RES-E. In general, there are two ways for the Member States to implement Art 16 (2) (b): to provide either 'priority access' or 'guaranteed access'. Priority access applies where the regulatory regime is one in which the system operator is obliged to buy, at a fixed price, all the RES-E that is produced. This obligation can be seen as *per se* ensuring the access of this electricity to the grid. Guaranteed access applies where a country's regulatory regime is one in which RES-E is sold in the ordinary electricity market. The Member State must ensure that electricity that is contracted and sold in the market has access to the grid.

In Spain, as soon as RES-E is sold and contracted on the Spanish market, the electricity needs to have guaranteed access to the grid. This works when the energy is produced and consumed in Spain. However, if the energy comes from outside of the EU through an interconnector to Spain, as in our case study, in which Spain is only a transit country towards the final destination, which is France, the TSO must provide access to its lines only for transit through Spain, so that the energy can be contracted and sold in France. In such constellation the Spanish TSO will have no interest in giving priority. Following the RES Directive, either guaranteed or priority access as well as guaranteed transmission on Member States territory is prescribed no matter what the origin of the RES-E, thus, the third country origin of the RES-E does not relieve the Spanish TSO from the obligation to grant it. In consulting Spanish law, we find that it addresses only Spanish RES-E. The relevant provisions require that RES-E must be fed in and dispatched with priority, i.e., prior to electricity from conventional sources of energy. However, this priority ceases for system operators that are not in compliance with the conditions laid down by the contract on the technical relations between a plant operator and the grid operator (Art. 17e, Annex XI no.4 RD 661/2007). The plant operators are statutorily entitled, as against the grid operator, to priority export and dispatch of RES-E (Art. 17 RD

¹⁹ In 1999, the Moroccan Office National de l'Electricité (ONE) integrated the Spanish market as an external player. At first, ONE imported electricity through direct negotiations, but since 2003, energy purchases and sales have been conducted on the Spanish exchange market, MIBEL (Mercado Iberico de Electricidad.)

²⁰ Operating in passive mode (i.e., the actual flows cannot be reduced to the minimum in real time). Imbalances are assured in real time by Red Electrica de España and usually are compensated two weeks later by ONE, which either acquires what is lacking or sells the surplus in the Spanish market, based on a profile equivalent (ONE holds the necessary Spanish authorisations). **Technically ES:** In case of congestion, available capacity is allocated among the offers on the market OMEL and bilateral contracts (pro rata to the volumes overall off). Then, the available capacity for offers on the market is allocated to offers in order of merit. Available capacity for bilateral contracts is allocated to them by auction. **Spain contractual frame:** Contract ONE, as seller, and GDF, as buyer. GDF must obtain the 'technical certification', following the Royal Decree 08.19.2010 (authorisation Minister). GDF must conclude contracts for the Spanish grid. Secure transit capacity on the network of REE.

²¹ Decree OF 30/12/2005 ITC/4112/2005.

661/2007). However, plant operators and grid operators are obligated to conclude an agreement that regulates the qualitative and quantitative conditions for the electricity to be exported to the grid.²²

With regard to interconnectors, the Spanish law makes reference to third country/international interconnectors: The 54/1997 Electricity Act states that an international interconnection, regardless of the characteristics it may have, is part of the transmission system (Article 35). In addition, the TSO is defined as the single Spanish transmission owner and system operator.²³ Then, it follows that international interconnections must be built, owned and operated by the Spanish TSO (Red Eléctrica) as long as this asset is built upon Spanish territory. In practice, there is always a close cooperation with the corresponding neighbour TSO, during both the construction and operation phases.

With regard to connection, the Spanish law states that the TSO is obliged to provide access to the transmission network to any market player from any EU or non-EU country (the latter by explicit authorisation of the Ministry of Industry, Commerce and Tourism). This access can be denied only in cases of insufficient capacity. However, the cases in which the TSO may refer to an ‘insufficient’ capacity are questionable; it could easily do so in cases in which the RES-S is only in transit towards another EU country. In exchange for this access, market players must pay the corresponding access tariff (Arts. 38 and 13). We argue that priority must not only be given to domestic RES-E in the EU, but also to that imported from other Member States and from third countries. The Union established that RES-E should arrive to any European consumer in a preferential way. This regulation must be respected by the Member States. It may be said that a teleological interpretation of the applicable legal EU regime requires preferential access for any RES-E. It also is noteworthy that, with respect to preferential access, we face again the qualification problem: How can the greenness of imported energy be proven *ex ante*?

e. Challenge No 4: inter-TSO compensation

In looking at the EU framework, we find the compensation mechanism for cross-border flows (ITC-mechanism) in Regulation 714/2009²⁴, according to which TSOs are to be compensated for all of the costs incurred as a result of hosting cross-border flows of electricity on their networks, by the TSOs from whose systems the cross-border flows originate or where they end. The costs must be established ‘on the basis of the forward-looking long-run average incremental costs, taking into account losses, investment in new infrastructure, and an appropriate proportion of the cost of existing infrastructure [...]’. The concrete methodology is stipulated in Regulation 838/2010.²⁵ As Morocco or any other Southern Mediterranean country does not apply EU law, it will be necessary that the intergovernmental agreement to be concluded contains rules to enable all parties to be compensated for the costs of hosting cross-border flows.²⁶ The current state of affairs is that, as long as there is no agreement, the third country TSO must pay a transmission system use fee (case study: 4,56 Euro/MWh by the energy exported).²⁷

²² The Spanish law can be accessed at http://www.boe.es/boe_catalan/dias/2007/06/01/pdfs/A02567-02605.pdf.

²³ There may be some exceptions to this rule, but they are related to potential transmission assets that actually carry out distribution functions. (there may be some exceptions to this rule, but they are related to potential transmission assets that actually carry out distribution functions.

²⁴ Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003.

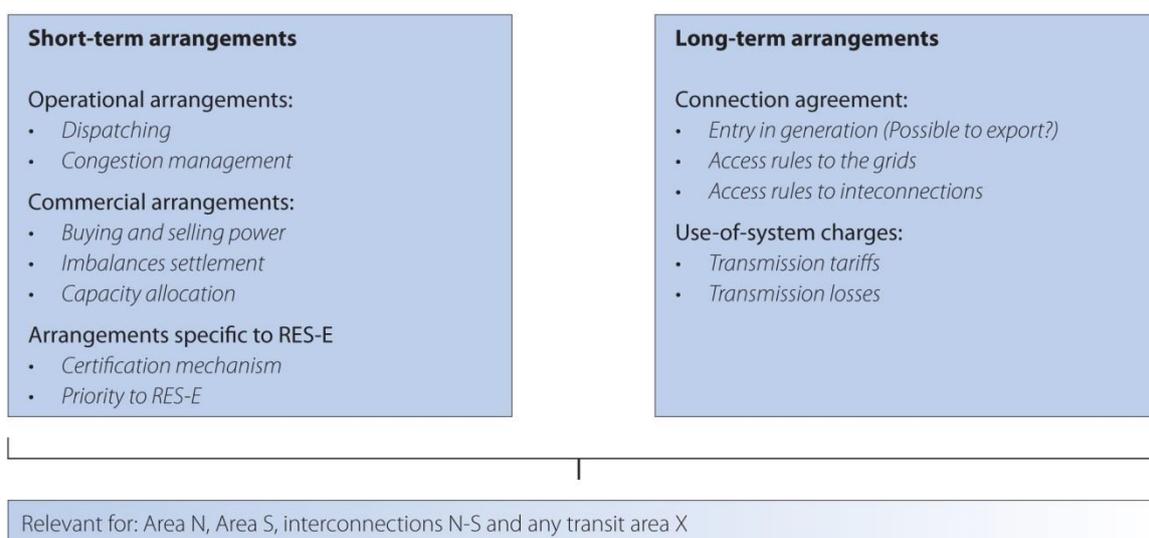
²⁵ Commission Regulation (EU) No 838/2010 of 23 September 2010 on laying down guidelines relating to the inter-transmission system operator compensation mechanism and a common regulatory approach to transmission charging.

²⁶ Also, there possibly could be a reciprocity agreement with the TSO requiring it to apply EU law, and thus, to join the ITC-mechanism.

²⁷ Medreg case study.

f. Minimum set of trade arrangements required

Based on the factors discussed above, certain challenges to Mediterranean RES-E exchange are already apparent. The minimum set of trade arrangements required is:



Source: Arthur Henriot, Florence School of Regulation, December 2012.

IV. What level of involvement is necessary at the EU level?²⁸

The EC already provided broader guidance regarding those terms to be included in the intergovernmental agreements that control the development and operation of the corridors. Non-binding guidance is preferable, not least, because the enactment of binding legislation would entail a multi-year process that would effectively overshoot the core timeline of the EU-Med development process (2020). Moreover, although these joint projects are about third countries getting access to the European energy market, they may get closer to realization by means of a truly multilateral approach rather than an imposition of the EU legal and regulatory framework from above.

A bottom-up approach could avoid harm to the internal energy market by encouraging step-by-step harmonisation with the EU regulatory framework. The degree of EU involvement requires some nuances in order to avoid hindering the progress of an EU-MENA integration that is negotiated among individual Member States and third countries and private entities that are not subject to EU law. A top-

²⁸ Section 2.3 of the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS, On security of energy supply and international cooperation – ‘The EU Energy Policy: Engaging with Partners beyond Our Borders’, COM(2011) 539 final: ‘The EU should continue to include key principles for trade and investment such as non- discrimination and market access and make them enforceable through effective dispute settlement procedures both in bilateral agreements as well as in multilateral legal frameworks. These rules should be negotiated to suit the specific energy relations and interests of individual countries, or groups of countries. These principles have to be complemented with rules concerning reciprocal and equivalent access to energy resources and networks in these countries, as well as investment protection, and regulatory convergence regarding pricing policies, sustainability criteria and crisis prevention mechanisms. Significant efforts are being made to address energy specific concerns in EU trade and investment agreements, including the Energy Charter Treaty and within the WTO. Work urgently needs to be stepped up on a comprehensive and coherent legal environment for EU energy relations with key suppliers and transit countries. This is crucial for further regulatory convergence with EU neighbors. Under the Energy Charter process, work needs to be refocused on the core areas of its mandate – trade, transit and investment protection. Moreover, to maintain its relevance, the Energy Charter Treaty should seek to extend membership towards North Africa and [the] Far East. The EU considers [that] it would be mutually beneficial if Russia plays a full role in this multilateral framework.’

down approach also could impede investors' abilities to obtain financing by increasing a project's level of regulatory risk. Therefore, binding rules are not advisable during the incipient phase of EU-MENA integration, which is a process whose success hinges on infrastructure investment.

The indispensable terms that must be included in the contractual framework that control the development and operation of the corridors are those which reflect the provisions of the EU regulatory framework; those provisions, in turn, are essential to protect the integrity of the EU's internal energy market. The following is a non-exclusive list of areas that must be included in each corridor's respective intergovernmental agreement:²⁹

- Actions by the applicable MENA government(s):
 - put the Grid Code in place/ adapt it;
 - authorise production for export and fix criteria for access to international markets;
 - define access rules to interconnector capacity and congestion management rules;
 - identify an independent body to certify renewable sources power plants;
 - define procedures for tracking production and import of renewable sources (certificate of origin).

- Actions by the applicable EU Member State government(s):
 - define criteria for the acknowledgement of Member States incentives to the 'green' energy from third countries (following the EC most likely the countries will opt for creating a tailored support mechanism for cooperation with non-EU countries, that functions separately from domestic support schemes);
 - set up procedures to monitor energy imports that are aimed at achieving the Italian target for renewable sources.

- Actions by both parties to be included in the 'corridor agreement':
 - capacity allocation and congestion management procedures;
 - inter-TSO compensation (ITC) mechanisms,
 - arrangements for marketing the RES-E in the EU market;
 - risk sharing arrangements.

V. Conclusion

Euro-Mediterranean RES-E exchange is plausibly feasible in the future. A full harmonisation of electricity legislation among EU and MENA countries would require a level of regulatory accord that still does not exist in the EU. However, a timely achievement of the EU 2020 targets only demands a minimum of regulation that is adaptable by a limited number of voluntarily affected parties, i.e., a few producer countries, a few consumer countries, a few transit countries (if any) and some private entities, such as the project entrepreneurs and their lenders. Non-binding guidance at the EU level could, therefore, be the tool of choice in the short term. This would lead to a built-in timeline mechanism that is aimed at achieving more market integration in the longer term. In our opinion, non-binding guidance is preferable because it (a) permits the interested parties to negotiate an agreement with the flexibility that is necessary to respond to fluid economic or regulatory conditions and (b) it mitigates the risk that investors will be retroactively subject to changes in the regulatory framework without having the ability to modify the project's controlling agreement. Binding rules that are issued by the Commission too early would presumably increase capital costs (perhaps prohibitively) by

²⁹ See EC, note 7 above, p. 28 ff, and Michael Cuomo, note 11 above.

causing an investment's regulatory misalignment among the players. Moreover, the enactment of such binding legislation could entail a multi-year process that would effectively overshoot the core timeline of the EU-Med development process (2020).

Our search for a platform thus has led us to the following recommendation for an EU energy policy regarding Mediterranean renewables exchange: In the short-term, that is, by 2020, a bottom-up 'corridor-by-corridor' approach should be followed, as it will permit the organic development of the EU-MENA energy trade, much like the development of regional markets within the EU. Such corridor-oriented development should be guided by the needs of voluntary participants from the MENA region. The EU should rely on the various regional institutions and organisations involved in EU-MED energy cooperation – for example, MedReg³⁰, which is the institution for Mediterranean Energy Regulators, the industrial stakeholders, which are grouped in initiatives such as the Desertec Industry Initiative (Dii) and the MEDGRID industrial initiative³¹, the Observatoire Méditerranéen de l'Énergie (OME), MEDELEC³², RES4MED³³, which is the sister organisation to the European Network of Transmission System Operators for Electricity (ENTSO-E), the newly established Association of the Mediterranean Transmission System Operators (TSOs), i.e., the so-called 'Med-TSO', just to name a few – to reach regulatory convergence at the regional level, to encourage supranational rule development and to enable Mediterranean RES-E trade initiatives. The European Commission should issue non-binding guidance regarding the actual implementation of EU-MENA RES exchanges as done already.

Finally, although there is a case for RES-E imports for reasons of source and supplier diversification, it could be worth to consider the possibility of statistical transfers between Member States and third countries as an alternative to the import requirement as it is foreseen for joint projects between Member States only.

In the long-term (2050), a top-down EU-28 approach may be advisable.

³⁰ For further information, visit: http://www.medreg-regulators.org/portal/page/portal/MEDREG_HOME

³¹ A consortium of 21 companies (TSOs, generators, manufacturers, financing institutions, investors) from both shores of the Mediterranean Sea. See <http://www.medgrid-psm.com/en/>

³² For further information, visit: <http://www.medelec.org/Content/Default.asp?>.

³³ For further information, visit: <http://www.res4med.org/site/index>.

Author contacts:

Nicole Ahner

Florence School of Regulation and Loyola de Palacio Chair

European University Institute, RSCAS

Convento

Via delle Fontanelle, 19

I-50014 San Domenico di Fiesole (FI)

Email: nicole.ahner@eui.eu

Jean-Michel Glachant

Director of the Florence School of Regulation and holder of the “Loyola de Palacio” Chair

RSCAS, European University Institute

Convento, Via delle Fontanelle, 19

50014 San Domenico di Fiesole (FI)

Italy

Email: jean-michel.glachant@eui.eu