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Guidance on the use of renewable energy cooperation mechanisms

Accompanying the document

Communication from the Commission

Delivering the internal electricity market and making the most of public intervention

1. INTRODUCTION

Directive 2009/28/EC on the promotion of the use of energy from renewable sources ("the Directive") establishes a legal framework for the development of renewable energy in Europe to 2020. It contains binding national targets for 2020 and requirements such as to "introduce measures effectively designed to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory" (c.f. Article 3(2)). By 2020, therefore, Europe should have a large scale renewable energy industry covering all Member States, and not just the four or five traditional national markets. However, whilst national measures are needed to improve the regulatory and market environment for renewable energy in each Member State, the growing European dimension of developing renewable energy is also addressed.

The creation of Europe's internal energy market creates great opportunities for developing and supplying energy, including renewable energy, more efficiently and cheaply. The Communication which this staff working document accompanies explains how national government measures can be improved to ensure Europe's energy market can function efficiently, and one part of this process is maximising the benefits from intra-European trade in renewable energy through national cooperation. This is why the Directive created "cooperation mechanisms" to facilitate cross-border support of renewable energy. These mechanisms (statistical transfers, joint projects, and joint support schemes) give Member States flexibility to jointly exploit cheaper renewable energy sources. Whilst nearly all Member States have some low cost domestic renewable energy sources to exploit, there are clearly areas of Europe where resource potential is more plentiful and cheaper than in others.

The economic benefits to be had from exploiting Europe's best resource potentials are undisputed and have been confirmed by a number of studies and modelling efforts[1]. As cooperation across Member States increases, the benefits rise: up to 6% lower support cost, 5% lower generation cost 3% less capital expenditure[2]. Earlier Commission reports[3] noted that purely *national* development of renewable energy resources raised the cost of reaching the 2020 targets by around €2bn p.a. So the earlier use is made of the cooperation mechanisms, the better.

Member States that co-finance renewable energy development in another (an "off-taking country") benefit by reaching its part of the EU's target more cheaply. Member States developing more renewable energy than they need for their own target (a "host country"), benefit from a further income from selling renewable energy, from having the extra energy to consume, and from indirect benefits related to job creation, increased security of supply, a stronger domestic industry, technological innovation etc. Such trade is also a normal part of Europe's ongoing internal market integration,

[1] RES4Less, http://www.res4less.eu/

[2] According to the Green-X Model developed by the Technical University of Vienna as applied in the RE-Shaping study financed by the EU, http://www.reshaping-res-policy.eu/

[3] "Renewable Energy: a major player in the European energy market", COM(2012) 271; Financing Renewable Energy in the European Energy Market, Final Report (which includes cost effects for additional transmission infrastructure), http://ec.europa.eu/energy/renewables/studies/doc/renewables/2011_financing_renewable.pdf

and insulated measures focusing on *national* resources run counter to the goal of creating more efficient Europe-wide markets.

Despite such apparent mutual benefits, and the political commitment to create the internal energy market, almost no cooperation in this regard has occurred. This seems to be partly due to the way the specific benefits for a Member State depend on the type of cooperation mechanism chosen and the details of its design. Following calls from stakeholders and Member States in Council, this guidance has been prepared to identify the obstacles encountered in trying to implement cooperation mechanisms and propose possible approaches and solutions.

2. OVERVIEW OF PERCEIVED BARRIERS

Despite the evident benefits of engaging in cooperation in order to achieve the renewable energy targets jointly, no agreements have evolved except for the joint support scheme between Norway and Sweden[4]. In fact according to Member States' national renewable energy action plans, only Luxembourg and Italy ever intended to draw on the cooperation mechanisms to help achieve their target. This lack of interest is changing, partly as Member states exploit their cheaper domestic renewable energy potential and seek to keep costs low. Examples include the ad-hoc Member State working group on the implementation of an "Article 9" pilot project or the recently signed Memorandum of Understanding between Ireland and the United Kingdom.

Through the Commission's discussions with Member States, studies and workshops such as the Commission's "Concerted Action" project where all Member States meet to discuss issues regarding implementation of the Directive, the reasons for the lack of interest have emerged. They fall into four main categories:

1. **Perceived technical complexity** of designing the most appropriate cooperation model and reluctance to take associated "first mover risk";

2. **Domestic policy considerations** – in particular communicating to the national electorate the benefits of cooperation over reliance on domestic resources (with their various perceived economic benefits);

3. Concerns that cooperation might **interfere** with the effectiveness or efficiency of domestic policy measures and in consequence security of supply and other energy policy goals;

4. **Perceived uncertainty** and complexity of assumptions underlying any appropriate cost and benefit sharing arrangements between Member States.

These are combined with the challenge of planning for large scale deployment only in the medium term (given the "slow start" of Member States' trajectories towards their targets). Moreover growing economic difficulties, whilst in theory an incentive for cost-saving trade, appears more commonly to spur domestic investment strategies.

[4] In operation since January 2012.

As the lengthy discussions between Sweden and Norway illustrates, Member States will only decide to cooperate once the economic and non-economic benefits are perceived to be larger than the associated legal, financial and political costs and risks. Thus the current caution can be expected to diminish as the net benefits become more apparent.

Addressing the four issues above requires consideration of the details of any concrete cooperation arrangement, covering

- a better understanding of the institutional arrangements to administer the cooperation;
- identifying and giving a value to the overall costs and benefits – direct and indirect – of cooperation to be able to assess if cooperation should be pursued and at what price; together with monetary transfers from the off-taking country if not directly benefitting the renewable energy project;
- explicit consideration of the interaction of differing institutional and financial arrangements and scope for convergence;
- the need to explore the legal arrangements including the need for legislation and the question of responsibility for non-compliance with cooperation agreements.

3. THE CHOICE OF COOPERATION MECHANISMS

There are three main cooperation mechanisms. "Statistical transfers", where Member States agree to attribute renewable energy produced in one Member State to another in their statistical accounting for target compliance. There is no specific plant or physical energy involved. "Joint projects", where the renewable energy from a particular project is shared between the parties, with or without a physical flow of the energy produced. Under Article 9 of the Directive join projects *with physical flows* can also be arranged with third countries. The third mechanism is a joint support scheme, where Member States co-finance their new renewable energy production independent of its location (within their territories).

The choice of mechanism depends on the objectives of the parties involved. It is therefore essential that Member States clearly define and communicate their objectives, which can inter alia include:

- Lowering the costs of reaching the 2020 targets;
- Meeting any gap between production and target or interim target;
- Technological development, for either "off taking" and host countries to:
  - Diversify supply
  - Develop technologies and markets
  - Share technology/project risks of less mature technologies
  - accelerate joint technology learning & cost degression

- Build up long-term (multilateral) cooperation on renewable energy deployment (incl. beyond 2020)
- Testing methods of convergence of supporting renewable energy
- Improving integration of renewables in regional markets/grids

> ➢ If the objective is purely lowering costs of target compliance, statistical transfers offer the simplest model.
>
> ➢ Technology development, testing and long term cooperation objectives are more easily achieved with the joint project mechanism
>
> ➢ Well integrated (electricity) markets & similar technologies are probably necessary for joint support schemes to be feasible.

The number of parties to be involved will also influence the choice of mechanism. Statistical transfers generally call for bilateral cooperation; joint projects can be implemented between multiple countries. In an extreme case, a pilot EU-wide common trading platform for specific technologies, as proposed by some stakeholders, would be based on a joint project mechanism. Higher risk and large scale projects (e.g. the Helios PV project) are also more feasible with multiple parties involved. However, bilateral joint projects are a simpler way to gain experience and initiate cooperation. Moreover research has shown that at this early stage, benefits from cooperation are better understood and more evenly spread in bilateral agreements. (With multilateral agreements the scope for resource, institutional, economic and social differences, and consequent distributional impacts is greater.)[5]

For joint projects with third countries ("Article 9 projects"), having multiple parties could be beneficial. Despite the initial coordination issues, multilateral agreements would enable a sharing of risk and the incorporation of related interested parties, notably (given the requirement of physical energy flows) recipient/transit countries.

Finally, it should be noted that the different cooperation mechanisms are not mutually exclusive. Member States are free to combine several in a single agreement and might even overlap in scope, depending on their design. Risks associated with a joint project could be mitigated by a "back up" statistical transfer; joint projects may contain elements of joint support schemes; joint support schemes might cover some technologies or markets and joint projects others[6].

4. STATISTICAL TRANSFERS

Statistical transfers are agreements between Member States to transfer the statistical value of a quantity of renewable energy produced in one Member State to another

[5] In addition to restricting the potential economic benefits to a smaller number of Member States, high geographical concentration of deployment through cooperation might likely also lead to higher overall integration and balancing cost.

[6] e.g. in addition to their joint support scheme with Norway, Sweden is interested in cooperating to develop its offshore wind resources.

Member State for target compliance purposes[7]. The statistical transfer is the simplest form of cooperation amounting to an exercise of statistical accounting, without any link to specific generation units or energy flows or place of consumption[8].

i. Legal requirements for statistical transfers

The Directive sets few legal requirements and thereby gives Member States wide discretion in negotiating a statistical transfer. An agreement is reached for a virtual transfer of a certain volume of renewable energy to be deducted from the selling, "host" Member State's statistical accounts and added to those of the buying, "off taking" Member State. The technology or sector of the energy is irrelevant. Each Member State must notify the Commission of their agreement at the latest three months after the end of each year for which the transfer takes place. Notification requires a letter giving the quantity of energy (in ktoe) and price (per ktoe or MWh), whereupon the Commission services publish the information on the transparency platform[9]. The energy statistics will be transferred ex post between Member States for target compliance purposes only. The national statistics on the share of renewable energy in primary energy as well as final energy consumption are not affected.

Cooperating Member States will have to enter into some form of binding agreement to establish a reliable basis for cooperation and to address price determination, compliance risks and other issues discussed below. The entity responsible for concluding agreements is a question of national jurisdiction. It may be intergovernmental (signed by the governments of both Member States) or interdepartmental (signed by heads of departments).

ii. Practical issues to consider for the implementation of statistical transfer agreements

The agreement can be established on an ad-hoc basis to fill a short-term gap in the off-taking country's domestic production in a specific year or on a longer term basis (e.g. several years up to 2020) as part of the overall strategy of the off-taking country. Member States appear most likely to be interested in a regular inflow that will help them follow their indicative trajectory and to reach their 2020 target. This has the advantage of reducing some uncertainty for both parties: The host Member State has an agreed revenue stream and the off taking Member State has certainty about the given energy contributing to its target.

- Member States should aim for a long-term ex ante agreement, providing a consistent and predictable framework for both parties.

A more liquid market for ad-hoc ex-post transfers may develop closer to 2020, though prices could well be higher, as the quantity of renewables needed grows as the trajectory gets steeper and because cheaper "low hanging fruit" will have been

[7] See Article 6 of the Directive

[8] This statement limits itself to the definition under the Directive. However, if Member States decide to do so, in practice further conditions could be attached to a specific statistical transfer arrangement for example linking it to a specific technology.

[9] See http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm

exploited. Uncertainty about the need for statistical transfers nearer 2020 is itself creating uncertainty about the need for Member States to produce surpluses for trade, as they had announced in their National Renewable Energy Action Plans.

Determining the degree of flexibility in the contract required by either buyer or seller will also vary according to the time period in question. In the short-term, predictability of surpluses and deficits is rather high so neither party needs as much flexibility; with the buyer having the stronger interest to have some flexibility as to the volume of the statistical transfer. For longer term agreements the uncertainty of predictions increases and so does the interest of flexibility on both the buyer's and seller's side, while the buyer wants to have certainty to be able to receive a certain volume of transfers.

The Nordic Testing Ground study[10] identifies three types of contract that the Member States could use for their statistical transfer:
i. Spot agreements, selling the statistical value of energy *ex-post* (i.e. last minute adjustments and balancing of surpluses and deficits in trajectory or target achievement)
ii. *Ex-ante* spot agreements, to purchase a certain volume *in advance* of its production, at one or several future points in time.
iii. Option contracts to buy at a certain future date. This right (not obligation) to buy reduces risk for an off-taking Member State but does not guarantee the market for the host Member State.

A combination of these options, such as a limited agreement to buy ex ante, combined with options for possible extra take off in the longer term could mitigate risk for both parties.

As above, interests vary depending on timing to 2020 (and production/demand uncertainty), which suggests that agreements could also be separated into different time periods, e.g. up to 2015 and from 2015 to 2020 with different volumes of a minimum transfer volume and options as well as a price adjustment mechanism.

Risk of non-delivery of the agreement is avoided if the agreed transfer is not conditional on the host country's production of a surplus.

The Directive states that "a statistical transfer shall not affect the achievement of the national target of the Member States making the transfer" (Art. 6(1)). The provision affirms that the host Member State[11] is under an obligation to ensure that it remains capable of complying with its obligation to achieve its target in 2020. It will consequently remain solely the responsibility of the host Member State to have sufficient renewable energy amounts to comply with its own target and its statistical transfer commitments[12].

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[10] Green Stream, The Nordic Working Group for Renewable Energy. *Nordic Testing Ground for Co-operation Mechanisms of the RES Directive*, Final Report 13 April 2012, p. 27.
[11] I.e. in the case of a statistical transfer the seller, as defined above in Section 1.
[12] The situation is different for Parties to the Energy Community Treaty, however. According to the Decision of the Ministerial Council of the Energy Community they will only be able to engage in statistical transfers if they

The Directive does not give any indication as to the unit price for a statistical transfer, but leaves it to the market and negotiations between Member States. Current low demand would normally equate to low prices. At the same time, the host Member State would normally require a price at least equal to their costs (e.g. their support scheme rates, but also indirect costs associated with policy, administrative and grid-related (reinforcement/balancing) costs). An off-taking Member State would normally decline to pay more than they pay for developing their domestic resources and would expect acknowledgement of the indirect benefits to the host country in terms of actual energy produced, reduced air pollution, innovation, local economic benefits etc. – the standard broad benefits of developing renewable energy. Reflection of these indirect costs and benefits becomes more important the larger the scale of the transfer agreed[13].

A formula that captures the negotiation aspects for the price, to be used as a starting point for negotiations, could be the following:

Domestic reference renewable energy support price + administrative transaction costs + potential grid enhancement costs – indirect benefits from the increased renewable energy production for the selling state ≈ starting point for price negotiations

Depending on the rationale of the statistical transfer and technology mix, Member States should base negotiations on a set of reference support prices as a starting point to give an indication of an equitable price setting: for instance the support cost of the highest cost technology (e.g. PV), the price of the lowest cost technology (e.g. hydro or wind), the average cost of all renewables technologies, or the price of the most dominant renewable energy technology in the renewable energy mix[14].

Several aspects have the potential to cause problems gaining public acceptance for statistical transfers and it will be crucial for the success of any agreement to address these early on. The net effect of the direct and indirect costs and benefits as discussed above will need to be clearly communicated. For take-off countries, paying for energy "not delivered", the advantages of developing cheaper renewable energy, *EU* displacement of fossil fuels and the possible industrial/export benefits must be clear. For host countries, the benefits of having the extra energy and the fiscal, environmental and broad economic gains from developing renewables above their target need to be made clear. The revenues from any statistical transfer could constitute general government revenue. Alternatively, to link the benefits of the statistical transfer to the energy sector specifically, the revenues could be earmarked for renewable energy development or used to reduce existing renewable energy levies on energy consumers. Such moves might improve public acceptance, but linkages

are on or above their own national trajectory. This also confirms the view that this is not the case under the Directive itself (*argumentum e contrario*).

[13] For small amounts and in particular in case of ad-hoc and ex-post transfers, indirect costs will, however, not be significant factors in negotiations.

[14] Also, once a price discovery mechanism has been agreed, long-term agreement will necessitate a dynamic assessment of support costs as the basis of price determination over time, as technology cost and market conditions evolve.

with support scheme financing would also have to be scrutinised to ensure compliance with state aid rules.

Member States will also need to reach agreement on the following administrative aspects:

- They should appoint a national contact point for the statistical transfer agreement with an operating mandate, for instance their national energy agencies (it might not be necessary to specify this in the agreement between cooperating parties however);

- The agreement will have to contain clauses on the quantity, time periods and measurement unit, the applicable national (or international[15]) laws and a dispute settlement procedure (domestic judicial proceedings or international arbitration).

[15] If it is concluded as an intergovernmental treaty, the Vienna Convention on the Law of Treaties will be its basis of interpretation

iii. Checklist for statistical transfer arrangements

The following steps should be taken by the project parties in preparation of their statistical transfer arrangement:

- ✓ Buying country needs to analyse projected need for target compliance amounts to stay on or above the trajectory according to the Directive according to national energy strategy – selling state needs to do the same as to available surplus
- ✓ Determine volume of RES amounts that shall be transferred (in MWh or ktoe)
- ✓ Fix the time horizon of the cooperation: short-term (at least one year) or longer-term (several years until 2020 or beyond) - *Agreement until 2020 (or beyond) holds benefits for buying and selling state.*
- ✓ Choose a contract type:
  - o *Ex-post* spot agreement
  - o *Ex-ante* spot agreement
  - o Option contracts with minimum amount to be transferred
- ✓ Determine the selling price (matter of negotiation) – *Proposal for calculation formula as starting point to be adapted to individual circumstances*

  Domestic reference RES support cost + administrative transaction costs (should be minimal) + *potential integration and grid enhancement costs – indirect benefits from the increased RES production for the selling state (the latter two only in case of large amounts transferred and additional deployment)* ≈ starting point for price negotiations

  In case of longer term cooperation, the agreement should provide for annually adaptation of negotiated price (e.g. according to development of average support cost in selling country)
- ✓ Appoint national contact points with an operating mandate for statistical transfers
- ✓ Clarify that the selling state bears the responsibility for delivery of the contracted volume of target compliance amounts (i.e. sending the notification to the Commission)
- ✓ Establish a dispute settlement forum:
  - o Domestic judicial proceedings under one party's national law,
  - o International arbitration (strictly limited to legal questions relating to the agreement)

5. Joint Projects between Member States

A co-financed "joint project between Member States" will result in the statistical accounting of renewable energy amounts emanating from specific installations towards the statistics of the off-taking Member State(s)[16]. While it is not a requirement of the Directive, it can additionally involve the physical transmission of the energy produced. Article 7 requires that the electricity or heating and cooling energy installations in question must have become operational after 25 June 2009 (or relate to additional capacity due to refurbishment after this date). In all other respects Member States are free to decide on the concrete design.

To date, most joint project discussions include plans for the physical transmission of the energy in question (to address energy security or public acceptance concerns), and have thus focused on electricity installations rather than heating and cooling plants, where transmission is less likely. Whilst most of the discussion below is based on electricity, the cheaper options for heating and cooling plants could also be considered by Member States.

i. Key drivers for joint project cooperation

Again the crucial driver for engaging in cooperation will be that the overall balance of benefits and costs for all partners is perceived to be positive, which for the off-taking Member State will generally (but not necessarily) mean that it results in cost reductions per unit of energy from renewable energy produced. Determining the sum of costs and benefits will on a case by case basis depend on the partners' respective objectives and interests. In addition to pure cost savings both partners could, for example, be interested in promoting specific renewable energy technologies through cooperation, fostering innovation and capacity building or increasing security of supply ensuring access to production form resources or resource profiles not available domestically.

The crucial first step before conceiving a joint project will therefore be that each party clearly identifies its objectives and interests in the cooperation. Only on this basis they will be able to take the appropriate decisions when designing the scheme. The broad range of possible drivers for Member States (MS) to engage in a joint project is depicted in the table below. They will be addressed in the more detailed discussion of relevant design options later.

	Host MS	**Off-taking MS**
Cost-efficiency	Interested in the positive effect on its renewable energy market and creating additional revenue for the sector. Tapping external support to develop additional renewable energy potential will help drive economies of scale	Ensure an economic advantage through the cooperation. This could be purely linked to achieving its target (and possibly post-2020 objectives in particular in case of physical import), but also to achieving others of the

[16] This link to concrete installations is the feature distinguishing joint projects from pure statistical transfers.

	resulting in lower support cost for production counting towards domestic targets. Additional capacity can also contribute to the host's post-2020 policy objectives.	objectives below more cost-effectively.
Effects on domestic industry and labour market	Benefit from local employment related to construction, operation and maintenance, and the general strengthening of its renewable energy sector.	Interested in creating additional markets for technologies, in which its industry is particularly active (and for which potentially domestic resources could additionally be limited or unavailable in certain cases (e.g. CSP, offshore wind))
Technology development and innovation	Both partners could be interested in triggering economies of scale of a less mature technology by launching joint projects, sharing the cost. In particular the off-taking country could use the cooperation to reduce costs by starting deployment in regions with higher resources or other advantages to pro-actively time domestic deployment (initiating it once costs have been reduced, domestic infrastructure developed etc.).	
Security of Supply	Interested in complementing its renewable energy portfolio to increase security of supply, ease balancing etc. (through inter alia getting help to develop untapped potentials or simply making use of the joint project assets for domestic purposes after the end of the support period)	Interested in importing the physical energy if needed to respond to demand. It could thus secure access to renewable energy sources that are either complementing the production profile of domestic resources or are dispatchable, such as hydro, geothermal or CSP with storage (thus lowering system costs).
Launching long-term cooperation	Both MS might be interested in building the grounds for long-term cooperation in order to achieve long-term policy objectives more cost-efficiently in the future (inter alia gathering experience through limited cooperation in a joint project as part of a strategy towards integration and convergence of the energy markets more broadly and best practice exchange).	

ii. Understanding the costs and benefits of a joint project

The direct costs involved in a joint project are quite straightforward consisting mainly of the necessary support cost. There are different options how to determine the level of support which are analysed in the discussion below on support scheme design.

Costs might also arise for grid connection and potentially grid reinforcement necessary to connect the joint project. While grid connection costs will have to be covered in any case – as is the case for any added generation capacity –, grid reinforcement costs will depend on the volume of additional installations, their location and whether production can be used to cover demand in the host country. In case physical transmission of (part of) the electricity to the off-taking country is envisaged (or necessary), the cost for capacity allocation on the interconnector will need to be covered. Cost structures in this regard will inter alia depend on whether trade will be conducted via a regulated interconnector or via a dedicated merchant-line.

Indirect effects such as industrial and technological development, innovation, increased employment and local emission reductions will occur in the host country,

whereas they are indirect costs from the perspective of the off-taking country, which will develop less renewable energy based generation capacity on its own territory. In case of significant volumes of additional electricity from renewable sources in the host country due to joint projects, these affect power markets giving rise to indirect costs for the host country (and possibly benefits for the off-taking country). This will however be highly dependent on the degree of interlinkage (in terms of price settling mechanism, prize zones and network restraints) of the cooperating countries' electricity markets.

Preparing the negotiations on the design of cooperation will necessitate a thorough analysis of these direct and indirect effects according to the concrete parameters of the joint project or joint project framework envisaged. In each the host and off-taking country costs and benefits will then have to be compared. In the optimal case this evaluation will already expose a net benefit for the host country, in which case no further compensation will be needed.

iii. Practical design features and options

The design of the joint project will largely depend on a number of key determining questions, including the following

- Is the cooperation aiming at triggering additional deployment or at co-financing a project already planned independent of the cooperation agreement?
- Are the Member States interested in one specific joint project or in more comprehensive cooperation based on a joint project scheme?
- Is the interest limited to ad-hoc cooperation or aimed at gradually building up long-term cooperation?
- What price is the potential off-taker willing to pay and how will project support be structured?
- Do the cooperating Member States want to share the energy for target compliance purposes or will all renewable energy amounts be transferred to the off-taking Member State?
- Where will the physical electricity be marketed: In the host state or in the off-taking state after physical transmission?
- What are the risks involved for each party, how will they be (re)attributed and by what mechanisms?

Many of the design features and ensuing design options can overlap and will interact. Eventually the joint project framework will therefore have to be evaluated in its entirety as to its adequacy for ensuring coherency and for achieving the identified objectives of the parties.

The Directive requires that Member States notify the Commission of the joint project, and describe *ex ante* the proposed new or refurbished installation and the amount of renewable energy that shall be attributed to the off-taking Member State(s). The description of the installation must include the site, technology used, the installation's capacity and average production volume expected according to the site-specific capacity factor. In case of a refurbishment, an additional description on how these parameters are changed due to the planned refurbishment (see attached notification form) is necessary. The host Member State makes the notification but the clear agreement of the off-taking Member State is also needed, for verification.

Within three months of the end of year, an ex post notification by the host Member State is needed, of the actual energy produced and to be transferred. This can be done via a simple letter of the Member State's competent authority directed to the Commission's Directorate-General for Energy. Once notified, the Commission services will publish the information on its transparency platform.[17]

Project parameters which *could* be defined in the agreement include the technology and sub-technology, exact location(s) down to site(s), as well as the capacity (per installation). Such elements could alternatively be left to investors in a competitive bidding process. These elements may be part of the overall negotiation process between Member States.

Individual Vs multiple project framework

The starting point for designing the project will differ depending on whether cooperation is sought as a response to mid- to long-term strategic considerations or on an *ad hoc* basis to realise one specific project, possibly promoted by a project developer. The first joint project agreements are likely to be concluded on an *ad hoc* basis, limited to one or a small number of specific project (possibly promoted by project developers). Such projects should be chosen for their replicability, i.e. the potential to prepare the ground for longer-term cooperation building on the experience gained.

Once test cases have established the process, Member States should maximise the cost effectiveness of the projects by choosing projects on a competitive basis, whilst specifying, as desired, the technologies, volume, geographical areas/sites and other parameters giving them sufficient control to tailor projects to correspond to their identified objectives.

The (statistical and/or physical) sharing of the energy produced can be allocated as Member States choose, with all or an agreed part of energy being attributed to the take-off country.

Designing the support framework for a joint project

The principles outlined in the Commission services' guidance on support schemes[18] are equally valid when it comes to the design of any joint-project specific support schemes.

Using an existing support framework or creating cooperation specific support

Member States can use their existing national support schemes to finance a joint project on another state's territory, or they could set up a specific support mechanism specifically for joint projects.

Extending (part of) an existing support scheme to cooperation projects has the clear advantage that it already exists and only a few legislative or regulatory amendments have to be made. However, merely giving the same level of support as is provided to equivalent domestic projects in the off-taking country would not result in the cost-

[17] http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm
[18] Reference to the SWD on RES support scheme guidance

savings anticipated by the cooperation mechanisms[19]. Also, in case the host country's support scheme is based on off-budget financing e.g. through a consumer levy, it would not be suitable to be used for supporting joint project as offsetting the extra cost for consumer of the host country via payments of the off-taking country would be difficult to arrange for. Additionally Member States have reiterated their reluctance to follow this approach fearing that it might endanger the integrity of national support schemes.

To kick-start the development of joint projects, the implementation of a cooperation specific support mechanism therefore currently appears to be the solution preferred by Member States[20]. This mechanism including its funding arrangements would be legally separated from the national support scheme. According to the objectives identified by the cooperating partners and depending on whether cooperation is aiming at a single project or a certain volume of capacity independent of the number of projects, the mechanisms should be tailored to correspond to the requirements of the technology and geographic choices made by the parties.

In a first stage though intermediate solutions can be adopted, where cooperation specific support could be integrated into the legal basis of the domestic support scheme of the host or – more likely – the off-taking Member State and administered through the existing arrangements, while the level of support and possibly other parameters could be adjusted. This approach is likely to lower transaction costs, while still allowing for separation of the legal basis within the same legal instrument as well as for setting cooperation specific levels of support etc.

Type of support and setting the level of support[21]

A combination of up-front and production support can combine the steering effects of both instruments. In particular for pilot projects and less-mature technologies such approach seems appropriate to reduce cost and consequently the burden on consumers.

- Up-front support, in the form of grants and concessional financing, is an appropriate form of support to account for high investment costs in particular of pilot projects and to generally mitigate the risk of project financing. As it reduces the cost for capital, it will consequently also reduce the LCOE of the electricity produced and subsequently the level of production support needed. If granted, up-front support should at the same time only cover part of the investment risk, in order to maintain a strong incentive for project operators to operate their installation efficiently.
- Production support gives incentives to the project operator to maximise the cost effectiveness of its renewable energy plant. Payments are directly linked to the project's performance. Production support will, however, involve more complex administrative processes. The off-taking Member States would have to implement

[19] Unless the support scheme of the off-taking Member State differentiates between site qualities.

[20] In case of a quota system, a separation from the domestic scheme would not be possible, as the certificate issued in favour of a joint project would have to be eligible under the domestic quota system.

[21] In general readers are referred also to the guidance document on best practice of support scheme reform [Reference]. It should also be noted that this section is equally relevant to joint projects with third countries. Therefore in the following chapter on third country cooperation only aspects specific to such joint projects will be discussed.

a feed-in premium scheme (or tariff) or issue green certificates compatible with their domestic quota and certificate trading scheme.

In most current circumstances it will be the most efficient option to opt for a premium system which combines an incentive to market the physical electricity reacting to market signals where possible with risk mitigation appropriate for the given technology. The extension of a Member State's quota/green certificate scheme to selected projects could also be the basis for support.

Setting the level of support for either Member State, should follow the guidance outlined in the Staff Working Document on renewables support[22], but given the need to reflect a broader set of costs and benefits between Member States there may be a need for adjustments to take such indirect costs and benefits into account in a manner unnecessary for domestic support schemes.

As a general rule, if the cooperation aims at a limited number of large scale projects, it is advisable to opt for a market mechanism to determine the necessary premium level (tender or auction). If cooperation aims at a large number of small distributed projects a pre-defined premium (or tariff) should be considered. Either one of the Member States, through appropriate authorities, could carry out a tender procedure based on the negotiated specifications. The award according to the criteria jointly determined could be based on an evaluation of the authority carrying out the tender procedure or a joint body as mentioned above could be charged with this task. Such tender procedure designed to determine a competitive level of FiP seems to combine the largest number of advantages in terms of cost-efficiency, effectiveness of support and promotion of market integration of renewables[23].

In case of support on the basis of certificates – rather than determining the level of a premium – the tender could determine the amount of energy produced per certificate issued by the off-taking Member State. The off-taking Member State would then have to make the necessary arrangements for these certificates to be eligible to be sold on its market alongside the certificates issued for domestic production.

Any form of support should be provided for a period that guarantees sufficient stability to be able to finance the capital-intensive investments in renewable energy installations. Reliability reduces the risk premiums included in costs of capital and again helps minimise energy costs for consumers.

In consequence support will therefore generally last beyond 2020 - as is the case for the majority of renewable energy installations built in the framework of domestic support schemes at the moment. While the current legal European framework for the promotion of renewable energy only establishes legally binding targets for 2020, it is clear that to follow the decarbonisation pathway until 2050 as endorsed by the European Union, as well as corresponding strategies on Member State level, substantial efforts will be needed requiring a comprehensive legal framework post-

[22] RES support scheme guidance XXX

[23] As also suggested in joint project case studies 1 and 3 in the Final Report of the Nordic Working Group for Renewable Energy "Nordic Testing Ground for Co-operation Mechanisms of the RES Directive" (p.37 and 43), April 2012; and indicated in the Final report of the RE-Shaping study, February 2012, http://www.reshaping-res-policy.eu/downloads/Final%20report%20RE-Shaping_Druck_D23.pdf

2020. Cooperation will play an increased role with the share of renewable energy in the system rising, as resources to be exploited cost-effectively within specific geographical boundaries will become more scarce and joint exploitation of production resources in the EU (and in neighbouring partner countries) will be inevitable to facilitate the overall balancing of production form different renewable energy sources. The limited timeframe of the current legal framework can therefore not validly be argued to be a barrier to the implementation of cooperation with third countries for policymakers today. Any such cooperation will contribute to the creation of a sustainable and competitive European energy system during future decades within the post-2020 policy framework currently under discussion.

As a general rule, the incremental cost of supporting the production of energy from a joint project to be accounted towards the off-taking countries target (i.e. the premium in case of a FiP model), should be borne in its entirety by the latter.

Financing the support scheme

Support mechanism used	**FiT or FiP based support scheme of host MS[24]**	**FiT or FiP based support scheme of off-taking MS**	**FiT or FiP based cooperation specific support set up in the off-taking MS**	**FiT or FiP based support by more than one off-taking MS**	**Certificates issued by off-taking Member State**
Financing Option 1	Reimbursement by off-taking MS from state budget	No special reimbursement scheme needed	Financed from state budget	Creation of a joint fund, each MS contributing according to the share of renewable energy amounts to be transferred	Financed through certificate market in off-taking MS
Financing Option 2	Reimbursement via off-taking MS' off-budget	--	Financed off-budget through consumer-levy (included in existing system or through a separate levy[25])	Each MS contributing individual support paid to a project[26]	--

Taking into account other costs and benefits

It has been discussed by Member States whether due to indirect benefits (e.g. local employment, reduced pollution in case of consumption in the host country) in the host country, the latter should also contribute a certain share of support costs. Others have in return asked for additional compensation of the host country to cover system integration cost, which may come along with a higher penetration of certain renewable energy technologies.

Indirect benefits are difficult to quantify (except for savings of greenhouse gas emissions, which are, however, already internalised through the ETS). At the same time they will in most circumstances be to a large extent offset by indirect costs for the host country for reasons such as increased land-use, possible reduction of resources for production to count towards domestic sustainability path, public resistance to increased deployment in certain regions or system integration as

[24] Unlikely if support scheme of host Member State is financed off-budget.
[25] Making costs fully transparent to consumers.
[26] High transaction cost for project operator, increased risk and potentially more difficult to determine overall support on a competitive basis

mentioned above (and which are at least partly just as difficult to monetarily quantify).

Joint projects potentially hold large benefits for both participating Member States and their industries. For a project to be viable the benefits of all partners will – according to their respective priorities – have to be greater than their respective costs, ultimately amounting to net-benefits. As for the indirect and induced benefits and costs, cooperation partners should seek a cooperation model according to which these are perceived to represent a fair balance based on a sound cost-benefit analysis.

Direct costs of grid connection and reinforcements that might be necessary to accommodate the additional generation capacity, will explicitly have to be addressed. For any given project, they can be relatively easily quantified. To attribute such costs, it seems advisable to follow the shallow cost approach[27].

As regards any additional need for infrastructure with cross-border implications, cost sharing arrangements are already dealt with in the Commission's proposal on an Infrastructure Package[28]. These matters will therefore not have to be addressed in the framework of the joint project as there will be a comprehensive framework available, and applicable to any infrastructure needed irrespective of the underlying reasons (cooperation mechanisms or not).

Indirect benefits for the host country / indirect cost for off-taking country	**Proposed response**
Increased economic activity (installation and operation & maintenance), employment, tax revenues, strengthening of the supply chain for future deployment	These are the main economic drivers for the host country to engage in cooperation. Therefore no separate compensation to be envisaged. The trade-off lies between the support cost saved by the off-taker and the indirect benefits of the host.
Technology development effects through increased deployment, economies of scale for domestic deployment	s.a.
Reduced local emissions	At least for GHG emissions these can be quantified under ETS.
Indirect cost for the host country /indirect benefits for the off-taking country	**Proposed response**
Cost of connection to the local grid	Should be borne by the project company
Potential grid reinforcement cost	Covered through network tariffs
System integration cost including effects	For small to medium projects negligible.

[27] See also guidance on best practice and reforms of RES support schemes
[28] Cf. also next chapter on physical transfer

on the system marginal price in the host country	For large-scale cooperation frameworks such effects will have to be determined in a cost-benefit analysis and a distribution mechanism defined.

Providing for the physical transmission of electricity.

Trade of electricity is driven by the market and the price signals it generates. Requiring the physical import of electricity from joint project to the host country in an intergovernmental agreement decouples the flows from the mechanisms of the market. Such clauses should therefore be limited to cases, where there is a clear rationale to do so, such as indeed price differences or security of supply concerns. These are circumstances where linking joint projects to import of the generated electricity to the off-taking country may prove to be in the interest of both partners.

The economic rationale behind the physical import may be that the host Member State may have considerable amounts of domestically produced renewable electricity in its system already, which might render the integration of further volumes of variable electricity sources into its energy market costly. The off-taking Member State might have a load profile that can easily accommodate the electricity to be produced by the project. In addition a number of other viable arguments have been put forward for physical import that relate to broader policy and in particular public acceptance issues: The off-taking and importing Member States may for instance benefit politically from the physical import of the electricity, as it can give tangible proof of its engagement in renewable energy projects having an effect on the domestic energy mix. The off-taking Member State's system would in such case receive the physical electricity as well as its “green characteristics” (the statistical value to count against its target).

There might also be an additional post-2020 rationale to opt for the physical transmission of electricity from the point of view of the off-taking country. The Directive limits the delivery period transferring the benefit of accounting production towards target compliance to the time period until 2020. The rationale of joint project cooperation could thus be based on two pillars: the energy produced would not only contribute to the cost-effective target achievement of the off-taking Member State, but would additionally continue to contribute to the transformation of its energy system as advocated by European and national energy roadmaps beyond 2020. It would ensure that the project would continue to contribute to the Member State's obligation within any future European framework for climate change mitigation and renewable energy promotion based on the EU Energy Roadmap 2050 scenarios, as the electricity would continue to displace fossil-fuel based generation in the off-taking country. Support paid after 2020 would thus under all circumstances remain economically viable and politically valuable from a Member State perspective.

If physical transmission and consequently marketing of the electricity in a Member State other than the host state is part of the overall business model, the investor will have to be able to ensure that the electricity can actually flow to the target market. One risk in this regard is the factual possibility of securing sufficient allocation of interconnector capacity. If Member States need to make special arrangements, will

depend on the regime under which the relevant interconnectors are operated. In the rare occasion that two Member States are within a common control zone (e.g. DE and parts of LUX) there will be no need for securing interconnector capacity at all, as the electricity can simply flow like it would within a Member State. In most cases capacity will be allocated via implicit auctions. Electricity from renewable sources bidding on the target market for close to zero marginal cost will therefore *de facto* also be ensured the necessary capacity.

For arrangements to verify the flow of electricity as agreed by Member States one option is to simply use the rules as laid down in Article 9 and 10 of the Directive (see below).

Infrastructure with cross border impacts that might be (partly) due to increased cooperation is dealt with in the EU Infrastructure Package[29]. In case of a large-scale project also necessitating substantial reinforcement of domestic transmission lines, these should be defined as part of the tendered project with costs shared according to these principles as well. Depending on the volume of the cooperation, a pure shallow cost approach might not be fair to consumers in the host country and costs should therefore be shared according to the benefits they hold to each of the networks involved rather than simply their geographic location.

Involving industry actors

Article 7.1 of the Directive explicitly mentions the possibility for Member States to involve private operators in joint projects. Joint projects exclusively driven by Member States will be a rare exception. Discussions so far have demonstrated that industry actors play a decisive role in identifying potential cooperation projects.

To involve industry, participating Member States could either tender a specific project, requiring the private operator who will be awarded the tender to construct and operate an installation according to the specifications set out. Or they could design a framework in which private operators can proactively develop joint projects to apply for predefined support.

The involvement of a private entity considerably increases the scope for cooperation through joint projects. If economically viable conditions are provided, private actors will provide a steady flow of investments. In addition a private company can be expected to have more detailed first-hand knowledge of the renewable energy sources at its disposal, their relative costs, the nature of the market – both in its home country but conceivably also elsewhere in the EU. Through their involvement in the scheme this knowledge can be exploited to identify and develop new cost-efficient renewable energy projects.

The sharing of risk between the project parties

Distributing the risks for joint projects differs substantially from pure statistical transfers. For one, it will be appropriate that project risks are shared between the

[29] The proposed regulation on guidelines for trans-European energy infrastructure provides for a cost benefit analysis methodology to be developed by ENTSO-E as well as cost-benefit sharing arrangements based on the results. See also COM(2011) 658, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0658:FIN:EN:PDF

participating Member States on the one hand and between them and the private project operator on the other hand.

The basic principle under the Directive is that the risk of non-compliance with a Member State's target in all cases remains with that Member State no matter what the causality, with the sole exception of demonstrated force majeure[30]. The point of departure of risk mitigation arrangements is that this responsibility cannot be transferred under EU law.

The risk of non-compliance caused by failure of a joint project to deliver can be contained by allocating risks related to the implementation of a concrete project to those parties which are in the most favourable position to control them. This should also include economic consequences of failure to comply with obligations that give a clear incentive to comply. Some possibilities are discussed below.

The host state should in general bear the risks associated with grid access and the transmission on its territory. It should, for instance, reimburse the project operator (through compensation payments) as well as the off-taking state (e.g. via guaranteeing an ex-post statistical transfer) for curtailment measures that are necessary for maintaining system security or other grid related failures other than force majeure.

The off-taking state will be responsible for the provision of the financial support over the agreed time period. Failure to do so should give the project operator the right to compensation by the off-taking party. In case the host country decides to pay support in the off-taking country's stead to secure the economic viability of the installation on its territory, it should have the right to compensation by the off-taking Member States, while the off-taker loses its right for accounting the ensuing production towards its renewables target.

The project operator that constructs and operates the installation should equally bear certain responsibilities. First, sanctions should be attached to the call for tender in order to avoid that selected projects are eventually not implemented. This could, for instance, be achieved by issuing bid bonds[31] to all the applicants for the tender. A bid bond could guarantee that a project operator that is awarded the project bears part of the costs in case it cannot fulfill the tender requirements as promised. A bid bond could make the applicant pay the difference between its own and the next closest tender price. Another way would be to define a general penalty of ten percent of the bidder's tender price in case of non-delivery.

Second, the project operator should assume responsibility for the (range of) volume of energy generated. As for other projects, this responsibility is allocated through the simple principle that (operating) support will only be paid for energy delivered – as is the case for projects under the domestic schemes. In case the off-taking country would like to put this burden more comprehensively on the shoulders of the operators of a joint project, the definition of a "delivery corridor" could be envisaged, defining a minimum quantity of energy that must be transferred (and possibly a maximum quantity of electricity that will be supported). In case the project delivers less than the

[30] Article 5 paragraph 2 of the Directive.

[31] A bid bond is a form of guarantee by a bank or insurance company to the tendering agency against a tenderer's failure to implement a project in accordance with the terms of the tender.

minimum energy agreed upon, a sanction equalling the price of corresponding statistical transfers to make up for it, would become due. The sanctions for non-compliance of the project operator would be part of the terms of the support scheme. Sanctions could thus allow the off-taking state to pass some of its own non-compliance risk with its renewable energy targets economically on to the private operator. However, this would also increase the level of support necessary to compensate for this additional risk which is not normally borne in the framework of national schemes. It therefore seems advisable for the off-taking country to opt for such hedging strategy where the cooperation is key to its target achievement and it would not compromise the cost efficiencies sought via the cooperation.

Trust in the good faith of the cooperating Member States is a crucial prerequisite to successfully conclude a cooperation agreement. Nonetheless, such agreement should also provide for a simple and conclusive form of dispute settlement. Either the states could agree on one of their jurisdictions to deal with the matters or they could opt for a mediation and/or arbitration arrangement.

Public acceptance for joint projects

It will be key for the participating Member States to ensure transparent and visible communication of the benefits of the envisaged joint projects to the public as identified by the cost-benefit analysis, including but not limited to the argument of savings potential for the off-taker. It will be decisive to make cooperation a consistent part of an overall strategy that credibly aims at developing the domestic potential as well. The host state should stress the creation of jobs and local business, environmental benefits, and increased energy security if (part of) the energy is consumed domestically etc.[32]

As has been discussed earlier, combining a joint project with the physical import of electricity into the off-taking Member State might be a way of responding to the possible arguments of critics predominantly concerned with the energy mix within national boundaries. In some Member States supporters of a sustainable transformation of energy systems have argued that the support for energy from renewable sources produced and consumed in another Member State does not contribute to replacing fossil-fuel based production in the off-taking Member State, therefore delaying the transformation of its own energy sector. Where the electricity is physically imported, the off-taking state can present a tangible benefit to its consumers ("green electricity" in its national grid displacing conventional generation). This should, however, not be the sole reason of opting for physical transmission, as such pre-defined cross-border flows can lead to a limitation to the functioning of the internal electricity market and does not necessarily make economic sense (as electricity flows in such case are not determined by supply and demand).

[32] For a more in-depth analysis see inter alia the IEA RETD scoping study "Communication Best Practices in Renewable Energy", published in April 2013; http://iea-retd.org/wp-content/uploads/2013/04/IEA-RETD-RE-COMMUNICATE-Report_Final_20130403.pdf.

iv. Checklist for joint project parties

The following issues should be addressed in a joint project agreement:

- Clearly define the objectives to be achieved – *savings of compliance cost, jobs and tax revenues, security/diversity of supply, technology development etc.)?*
- Determine number of participating Member States – *bilateral or multilateral?*
- Determine and agree upon project parameters according to the identified objectives
  - Determine RES amounts that are to be attributed to the off-taking country's target
  - Determine if there is a case for physical import of the electricity
  - Determine delivery time period
  - Ad hoc, project by project or a larger joint project framework?
  - Make a technology choice, and choice of location(s) or geographical area,
  - Determine the range for acceptable level support payments according to the cost benefit analysis conducted from the off-taking country's perspective
- Determine implications for infrastructure/interconnectors
- Conduct a feasibility study including a cost-benefit analysis
- Make arrangements for risk sharing between the project parties
  - Host state bears transmission, grid access risks on its territory
  - Off-taking state responsible for financial support over the agreed time period.
  - Project operator bears the construction and general operation risk
- Address cost sharing of grid access and potential grid reinforcements (shallow cost approach recommended, in case of physical export of large volumes a sharing mechanism taking into account benefits of the reinforcement for both networks needs to be conceived)
- Design of support for a joint project
  - Time horizon of support arrangement?
  - Up-front or/and production finance?
  - Tender procedure or design a pre-defined framework
  - Setting financing arrangements (payments directly from off-taking country, through host-country or through a joint fund, certificate market etc.)
  - Make arrangements for measuring and verification of energy production
- Publish in an appropriate and accessible way the benefits of joint project as inter alia identified in the feasibility study and conceive an active communication strategy
  - Determine a dispute settlement forum (*Jurisdiction clause vs. arbitration clause*)
- Define procedures for the annual notification to the Commission - *Notification requires that a letter is sent from the Member State government explaining the quantity and price of renewable energy that is to be virtually transferred.*
- Make the initial notification of the project to the Commission

6. Joint projects with third countries

The concept of a "joint project with third countries" under Art.9 of the Directive allows for one or several Member States to cooperate with a third country, supporting a renewable energy project outside of EU Member States' territory, resulting in (part of) the energy produced accounted towards Member States' 2020 targets. The central additional condition compared with intra-EU cooperation is that only electricity projects are eligible and that physical import of the electricity into the EU is mandatory. The Directive requires consumption in the EU.

The mechanism provides another flexibility instrument to Member States to increase cost-effectiveness of meeting their targets, while avoiding that such cooperation with third countries may dilute the EU target for the renewable energy share in final energy consumption. Third countries may in turn benefit inter alia from strengthening their renewable energy sector through financial support from Member States, from capacity and technological development as well as indirect economic benefits.

i. Key drivers for joint projects with third countries

As for other cooperation schemes it is crucial for each partner to clearly define their respective objectives to make the necessary choices when it comes to the concrete framework for implementation.

For the participating Member State(s) the crucial driver will be the import of electricity from renewable sources at lower (support) costs. In case of strategic cooperation these cost savings might, however, only be realised in the mid-term, i.e. in the run-up to 2020 and possibly even beyond - as technology development and innovation potential may also be important factors in Member State's energy policy strategy. In particular demonstration projects with less mature technologies will therefore realistically be pursued to unlock cost-savings potentials at a later point in time. Additionally there will often be a development component[33] to joint projects with third countries, aiming to support partner countries through investments that help to boost their energy sector. In particular as regards the Southern Mediterranean, cooperation might additionally be motivated by the wider objective of supporting the creation of stable economic and political relations through cooperation in the field of renewable energy.

Benefits for project partners

	Off-taking MS	**Third country**
Cost savings (direct effects)	The renewable energy resources in some third countries at the periphery of the EU are better than within the EU. In consequence production cost can be lower. Especially joint solar projects in North Africa have the potential for generating electricity more cost-	Contribution to the development of a critical mass of renewable energy installations to kick-start the development of a local market, without burdening the public budget or local consumers with support costs.

[33] Such as access to energy, and creating the basis for increased economic activity.

	effectively than the same technology within the EU.	
Effects on domestic industry and labour market	Off-taking MS might be interested in creating markets for technologies, in which its industry is leading, but for which domestic resources are not or only scarcely available (e.g. CSP, CPV). In any case there may be business opportunities for the MS' industries as regards planning and construction (and possibly even operation) of the joint project.	The third country will usually benefit from local employment for construction, operation and maintenance. Economic activity will be created and the domestic renewable energy industry strengthened. Local industry benefits from knowledge transfer and ensuing capacity building.
Technology development and innovation	The off-taking MS might be interested in triggering economies of scale for technologies, in which its industry is leading, but for which resources are not sufficiently available in the EU (e.g. CSP, CPV).	Partner countries will profit from knowledge transfer, innovation and technology development through foreign investment, helping to develop and strengthen (specific part of) their renewable energy sector (for which otherwise support might not be readily available).
Security of Supply	By importing the generated electricity into the EU, the consuming MS will diversify its energy supply and reduce dependence on conventional energy imports.	Third countries might gain energy security due to additional renewable energy production on their territory (and being able to use the already depreciated generation assets for low-cost domestic supply after the initial support phase).
Launching long-term cooperation	Both partners might be interested in building the grounds for cooperation in order to achieve long-term policy objectives (more cost-effectively) in the future. For Art.9 cooperation this will generally also include non-energy policy areas like development and foreign policy objectives.	Both partners might be interested in building the ground in order to achieve long-term policy objectives more cost-effectively in the future. For Art.9 cooperation this will generally also include non-energy policy areas like development and foreign policy objectives.

ii. Understanding costs and benefits of joint projects with third countries

As for any joint project a sound cost-benefit analysis will have to be conducted. The only significant difference in analysing the costs and benefits of a joint project with third countries in comparison within an intra-EU joint project are the cost of additional transmission infrastructure that might be necessary to enable the physical flow of the electricity into the EU. In cases where sufficient interconnector capacity exists, the overall cost-benefit-analysis will only differ from that of another joint project as regards the (largely non-quantifiable) contribution to the achievement of policy objectives in particular in the fields of development policy and broader foreign policy.

As regards the cost of constructing an additional interconnector between the third country and the EU territory, it will be in most cases the most economical solution to invest in an interconnector that does not exclusively serve the export from the joint project, but will accommodate any flows demanded by the market. A separate

feasibility study examining the economic case for such interconnection would therefore have to be conducted[34].

iii. Design features and options

Consumption in the EU and notification procedure

As for intra-EU joint projects, to be eligible an installation has to have become operational after 25 June 2009 or the energy must emanate from additional capacity resulting from the refurbishment of an existing installation which took place after that date. The major difference is that only projects in the electricity sector may participate and that the produced electricity shall be consumed in the EU to be eligible for accounting towards Member States' target achievement.

Consumption in the EU

The Directive requires that the equivalent of the agreed amount of electricity is "firmly nominated to the allocated interconnection capacity" by the transmission system operators of the host country and the Member State through which the electricity enters the EU (and potentially any non EU transit country). The equivalent of the agreed electricity volume will need to be "firmly registered in the schedule of balance" by the transmission system operator in the Member State which serves as entry point. Further, both must "refer to the same period of time" for electricity transfers. The compliance with these aspects – as well as the simple fact that the electricity is produced from renewable sources – needs to be examined by an independent certifier[35].

Once imported into the EU according to the requirement of Article 9(2)(a) of the Directive the electricity may be consumed in any EU Member State regardless of whether it is identical with the off-taking Member State (for the electricity to be accounted against the renewable energy target). Where the electricity is marketed once import has taken place, is of no legal relevance to the Directive at all.

Notification requirements

Similar notification requirements for joint projects with third countries are required as for joint projects between Member States. Two steps of notification to the Commission are required by the *off-taking Member State*, sending it to both the Commission and the third country.[36]

[34] In an initial phase the business case for additional interconnectors would also have to take into account electricity exported from the EU to third countries before renewable energy exports to the EU can be gradually increased.

[35] A limited exception to the requirement of physical import of electricity is included in Article 9.3 of the Directive. This provision allows for the statistical transfer of amounts of electricity produced, if interconnector capacity will be built, its construction started until the end of 2016, cannot be finished until 2020 but is operational at the end of 2022 and is at this point used to export electricity from renewable energy sources to the EU. This exception takes into account that some joint projects with third countries, for instance projects under the Mediterranean Solar Plan, may require an extended lead-time before being fully interconnected to the territory of a Member State.

[36] This can be deducted from Article 10(2) of the Directive.

In addition to the information required in case of joint projects between Member States, the *ex-ante* notification needs to contain the financial arrangements of the project (subject to legitimate confidentiality requirements), which should include the agreed operational support per unit of electricity exported, as well as agreed investment aids granted to the project by Member States. Finally, the envisaged amount of electricity to be transferred (and, if any, the amount of electricity planned to be consumed domestically), the description of financial arrangements and the time-frame of cooperation need to be acknowledged by the third country hosting the project.

The *ex-post* notification differs from that of other joint projects in that it additionally requires the proof of fulfilment of the conditions of Art.9 (2) of the Directive (relating to consumption in the EU) as described above. In order to be able to do so, the electricity fed into the grid needs to be measured at the installation (via a real-time load profile power meter, most likely by the Transmission System Operator (TSO) in the host country, possibly with data access of the TSO on the Member State side of the interconnector). The schedule of balance will be available from the TSO on the EU side of the interconnector. Nomination schedules of interconnector capacity are available from the companies administering the interconnector, which will in many cases also be one or more TSOs.

In practical terms the following arrangements are an example of what would be considered to be in line with the requirements of Article 9.2:

(a) The electricity is metered at the installation's feed-in point to the grid of the third country with a certified metering system and real-time data is submitted to the involved TSOs on both sides of the interconnector (as well as the certifier either directly or via one of the TSOs).

(b) Nomination at the interconnector will regularly take place at the time an offer is accepted, after having been placed at the spot market or market pool of the Member State of physical import. The nomination is then acknowledged by the TSO(s) operating the interconnector.

(c) The TSO of the Member State of entry acknowledges the registration of the electricity in its schedule of balance on an hourly basis.

(d) The TSOs submit the above data to the certifier which will review the time consistency between the electricity fed into the grid and the nomination on the interconnector as well as the consistency of the amount nominated and the volume registered in the schedule of balance of the importing Member State's TSO.

(e) This certification is then submitted to the Commission together with the annual notification of the electricity generated to count towards Member States' targets to fulfil the requirement of Art.10.1(c) of the Directive.

To this end, the cooperating parties will have to designate a certifying body to verify the information contained in these documents, the fact that the electricity is produced from renewable energy sources, as well as time consistency of production and transmission. Time consistency will be deemed to exist if the power fed into the grid

is equivalent to the quantities nominated to the interconnector and registered in the schedule of balance on the EU side within a period of one month. To keep administrative and transaction cost as low as possible, it would be advisable to identify a body that has a similar role in the framework of the domestic support schemes like an independent regulating authority, but it could also be a certified private entity.

For notification purposes it would then suffice to attach the certification issued to the notification. The corresponding documents issued by the TSOs or other relevant bodies would only need to be submitted, if the Commission explicitly requests to do so, in order to clarify open questions, which might remain after examination of the notification and the certifier's statement.

This *ex post* notification must be submitted within three months of the end of each calendar year, i.e. until the end of March. As for any notification in the context of cooperation mechanisms, there is no prescribed format other than the information the notification must contain. Once notified, the Commission services will publish the information on the transparency platform[37].

Additional support outside the framework of Article 9

According to the Directive the project must not receive "support from a support scheme of a third country other than investment aid"[38]. This implies that any operational support – i.e. calculated per unit of electricity exported to the EU – needs to be coming exclusively from the participating Member States. Investment aid in form of grants or concessional financing by a third country is permitted.

Another issue as regards support outside the scope of Article 9 of the Directive, and which is not addressed by the Directive, is the question if Article 9 support can be combined with revenue from the Clean Development Mechanism (CDM) under Kyoto Protocol provisions. Such combination will not be possible as for electricity exported to the EU the criterion of additionality under the CDM will not be fulfilled as no emissions will be avoided in the third country, i.e. the Non-Annex I party under the Kyoto Protocol – at least as regards the electricity exported to the EU. Certificates of Emission Reductions (CERs) issued for the project to be marketed in the EU Emissions Trading System (ETS) would thus lead to double counting and eventually to increased overall emissions, as they would allow emissions within the EU to increase without any additional reductions in the third country. But even for the part of the electricity from the project that might be consumed in the host country, CDM will not be an option to further incentivise the investment from an EU perspective as the ETS limits the use of CERs registered in 2013 or later to those emanating from projects in LDCs[39].

Contractual framework

[37] See http://ec.europa.eu/energy/renewables/transparency_platform/transparency_platform_en.htm
[38] Article 9 paragraph 2(a)(c) of Directive 2008/28/EC
[39] According to Article 11a paragraph 4 of Directive 2003/87/EC as last amended by Directive 2009/29/EC, as no sectoral bilateral agreements with third countries to this effect according to Article 11a paragraph 5 of the same Directive have been concluded (which also would allow for CERs form projects to be used in the ETS).

Two different types of legal relationships will in most circumstances have to be established, to create the necessary enabling framework for a joint project with a third country.

As for any cooperation mechanisms, an **intergovernmental agreement (IGA) will have to be concluded between the off-taking Member State(s) and the third country** (and possibly other transit countries), defining the overall framework – rights and obligations of the participating partner countries – providing the legal basis of an economically viable project for the project developer. Such an agreement could have an abstract character and define a framework for several joint projects, or it could be tailored to one specific joint project in a third country. Project-tailored intergovernmental agreements seem more likely to be concluded for Article 9 projects at this stage as they allow for low risk engagement. Member States should, however, seriously consider agreeing upon a framework that can be easily extended to further project, as a single project approach substantially increases the administrative burden. If an additional IGA will be necessary for every additional installations to be eligible as a joint project this might easily overburden in particular the administrative structures of less developed third countries.

Even if initial implementation is limited to a single installation, the IGA framework should be designed to serve as basis for extended cooperation, if this is desired at a later point in time.

The respective agreement can specify details of the project (technology, size, construction period, ownership, possibly site etc.) and the corresponding tender specifications, spell out the quantity of electricity to be transferred from the third country to the EU, contain arrangements as regards the sale of the electricity in the EU, and spell out the responsibilities to bear project related risks by either partner as well as the financial arrangements including production support. It will determine the responsibilities as regards notification of the Commission on the joint project and the collection of necessary information. For a more open-ended framework agreement not all of these parameters would necessarily have to be defined, depending on the objectives partners are pursuing.

Second, legal arrangements need to be in place between the partner countries and the project operator. These will determine the terms of operation, including rights and obligations as regards the support framework and ensuing risk sharing arrangements. Ownership arrangements will play an important role as well, due to market arrangements in the third country that might significantly differ from those in the EU internal market[40]. Either, the project operator takes over full operation and ownership of the plant (BOO model[41]), or it builds the plant and operates it for a certain time period and transfers it to the state after a certain time period (BOT model[42]). Further

[40] It seems advisable to task an independent power producer (IPP) with the operation of a joint project in the third country, as this creates competition in an often strongly state-controlled market and thereby allows for higher cost-efficiency and innovation.

[41] "Build-own-operate", i.e. residual value of the installation after the support period remains with the investor.

[42] "Build-operate-transfer", i.e. ownership of the installation is transferred to the host country after the support period.

conditions for grid access, a potential construction of merchant lines, and the possibility to export electricity might need to be specified, if not sufficiently guaranteed under domestic legislation. In case of a tender procedure these arrangements will be laid down in the tender specifications based on the agreement reached between the cooperating countries.

Risk sharing between the project parties

The legal arrangements agreed upon need to accommodate mechanisms ensuring an economically viable distribution of risks between the project participants. Risks should be borne by those actors that can (most directly) influence its realisation and are economically capable of bearing it.

- The third country should bear those risks associated with grid access (conditional on the payment of cost by the project operator in case of the shallow cost approach) as well as transmission within its territory, including potentially necessary gird upgrades. It should guarantee grid access and ensure guaranteed or priority dispatch, enabling export of the electricity. The host country should accordingly be under an obligation to cover any damages that might occur to the project operator due to the failure to provide these rights, in particular curtailments but also any other infrastructure failure preventing the electricity from being dispatched and/or exported (if not the result of *force majeure*). The same obligations should apply towards the off-taking Member State e.g. through covering the cost for substituting the renewable energy from the joint project by purchasing statistical transfers in the EU. In any case curtailment should be strictly limited to situations that constitute a threat to the system security.
- The off-taking Member State should be responsible for the due provision of the financial support as agreed and for an enabling market access for the electricity to be sold in the EU. Either guaranteed or priority grid access as well as guaranteed transmission and distribution on Member States' territory is prescribed by the Directive no matter what the origin of the electricity produced from renewable sources[43]. The off-taking Member State should also ensure the equivalent of priority dispatch of the imported electricity in the EU and arrange for balancing obligations borne in the EU.
- For the project operator, incentives and/or sanctions should be attached to the awarded contract to avoid that selected projects are eventually not implemented. Further, the project operator should assume responsibility for the generation of the volume of energy agreed to be exported. A corridor with a minimum quantity of electricity to be transferred, and a maximum quantity that the off-taking Member State pays support for, could be defined. In case the project delivers less than the minimum electricity agreed upon to the EU, the project operator could under such circumstances for example be held liable to pay for the purchase of statistical transfers on the EU market equivalent to the agreed minimum quantity, thus compensating for target compliance purposes of the off-taking Member State.

Together the host country and the country of point of entry will need to make arrangements guaranteeing sufficient **capacity allocation on the interconnector**. In

[43] Art.16 paragraph 2 subparagraph (a) and (b) of Directive 2009/28/EC

some cases where the project operator will bid on a pool market in the Member State of physical entry at (close to) zero marginal cost, corresponding capacity allocation will not be an issue: Any bid accepted to the pool will automatically be guaranteed the necessary capacity allocated on the interconnector. In case the project will be connected via a dedicated merchant line as part of the overall investment, the risk of not being granted the necessary capacity does not exist either and thus no mitigating arrangements is necessary. In other cases, e.g. for regulated new interconnection lines to be built in the Mediterranean that do not operate under conditions described above, the Member State of physical entry and the third country will have to allow for the priority treatment of the electricity according to the rules governing the interconnector.

Design of production support for a joint project[44]

As regards support for joint projects with third countries the only legal requirement of the Directive is that such project may not receive any support from a third country other than investment support (which may include investment grants and concessional loans for example). In consequence in particular performance-based or production support by the third country must not be granted for electricity to be eligible to be accounted towards Member States' targets under Article 9 of the Directive. In every other respect the Directive leaves a wide margin of flexibility to the off-taking Member State(s) as regards the design of its/their support to joint projects.

At least in the pilot project phase, participating Member State(s) would most likely opt to create a tailored support mechanism for cooperation with third countries, initially minimising repercussions on domestic support schemes. Such a mechanism would thus function separately from domestic support systems and would, according to the objectives pursued, target a specified technology or a set of technologies, possibly geographic area, or even a specific site to build on. The level of support to be paid to a project will be determined by the LCOE[45] to be expected under the tender requirements as regards type of technology, the size of the envisaged plant, the financing conditions and the potentially required transmission lines.

Arrangements for marketing the electricity

Whether opting for a feed-in-premium or a certificate scheme, the electricity would have to be marketed by the producer (or alternatively a third country company, e.g. the third country TSO, who buys the electricity from producers[46]) on an EU market. The choice of the market and the marketing instrument will also have repercussions on the setting of support.

[44] Only Article 9 specific aspects are touched upon here. Otherwise please refer to the respective considerations for joint projects in general above.

[45] Levelised cost of electricity.

[46] In case of a feed-in tariff scheme, the electricity would also have to be introduced on the European market, albeit not by the producer himself, who would receive a fixed remuneration for every amount of electricity produced. The electricity would either be bought for example by the TSO of the third country or the TSO of the Member State of first import, who would then be charged with marketing the electricity. Either one would then be reimbursed for the difference between the feed-in-tariff paid and the market price received from the support mechanism conceived for this purpose by the off-taking Member State(s).

Again different options exist for selling the electricity in the EU: Electricity could either be sold at the spot market or pool in the Member State of first import or via a power purchase agreement in one of the Member States. The producers themselves marketing the electricity on the spot market or pool of the Member State of first import would have the greatest impact in terms of market integration, encouraging producers directly to adapt production to market signals. This would in particular be an option in case the cooperation aims at utility scale installations where operators are likely to have the institutional capacity to efficiently act on a European power exchange or other pool market. Both, entering in long-term power purchase agreements instead or selling the electricity at guaranteed prices to the third country TSO for example, would have the result of hedging against the market risks for the producer. This would potentially lower the cost of capital for investments and enable small scale investments to take place within a joint project framework, but it would reduce the pressure on producers to adapt their behaviour to demand at the targeted market. Design choices again will depend on the objectives of the cooperation framework: In case of large-scale installations, in particular if the cooperation is to be scaled up over time, it would be preferable to have a direct exposure of producers to price signals in order to minimise overall integration cost in the EU. If the cooperation is targeted at a single project or is to target also participation of small-scale installations, hedging against high market risks are essential for these investments to be viable.

Sources and administration of support

Support could be funded from the state budget or via an allocation mechanism on consumer bills. While a consumer financed support scheme is generally less likely to entail applicability of state aid rules[47] (as it does not entail a transfer of state resources), and is also independent of the potential volatility resulting from budget constraints (and thus potentially more conducive to create strong investor confidence), a scheme funded from public budgets will be easier to implement at a first stage. Direct funding from the state budget does not require the establishment of a settlement mechanism with possible involvement of TSO and retailers and – depending on the legal system in the Member State – is also less likely to require a specific law to be passed other than the decision on the dedicated budget line. Such approach for financing pilot projects would also be in line with cautiousness of (first-mover) Member States to keep interferences of cooperation with third countries with their domestic support scheme as small as possible in the early phase of development of Article 9 projects.

Payments from the support mechanisms to eligible projects should be made by an institution designated or set up by the off-taking Member State(s). Possible solutions are the entities charged with administering the national support scheme of the off-taking Member State, a financial institution like development banks or the TSO or other institution in the third country. In case of cooperation between one Member State and a third country, it might be the most efficient option to designate the

[47] Aid granted outside the EU can also constitute state aid as it can potentially affect trade between MS. For further information on state aid for renewable energy in general consult the Community guidelines on state aid for environmental protection (2008/C 82/01) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:082:0001:0033:EN:PDF

national entity that is administering the national support scheme, as it already possesses the necessary knowledge and capacities.

In case several Member States agree to implement a joint project with a third country, their financial support will need to be pooled[48]. The pooling of support, and the subsequent distribution of generated electricity and renewable energy amounts, could allow for risk sharing among the Member States. A common fund would need to be established into which the participating Member States pay their contributions according to the share of statistical value of electricity from renewable sources they are to receive.

The fund could be managed by one of the involved TSOs or market system operators as is done for the administration of respective accounts for domestic support in Member States. Other options for the administering body include development banks, another designated public institution of the off-taking Member States, or a newly established joint body with participation of different Member States. It is advisable to charge a body which is already experienced with the administration of a national renewable energy support account or with similar exercises. The managing institution would arrange for payments to the project operator according to the electricity delivered at the interconnector into the EU. The rules on account management could be laid down in an implementing agreement between the partner countries as represented by the responsible national authorities and the designated body in charge of administering the account.

Tender design

A tender procedure will in most cases be the most suitable approach to select a private operator to realise a joint project, and to determine the level of required support under the best conditions available on the market. The tender process could be organised by the competent authorities in the third country, in a Member State or issued jointly by the participating countries, depending on the legal regimes in place. Irrespective of the authority launching the tender, tender specifications should have been defined jointly by all partner countries in the cooperation agreement.

The participating states could decide to issue a relatively open tender, e.g. specifying a volume of electricity to be generated for export to the EU, or a project tender, describing a specific project from which electricity will be imported. Either option has a number of variations according to the level of detail that is prescribed or left to be decided through the tender process itself (i.e. technology, capacity, location, etc.).

- A volume tender shifts a higher share of the risks to the project operator. At the same time, it reduces the influence of the Member State(s) on the technology used and the project site, while potentially securing the most favourable economic conditions. For first (demonstration) projects, the tender will, however, most likely be project-specific in order to reduce legal complexity by predefining the majority of parameters. In the longer term, volume tenders may increase

[48] Theoretically it could also be envisaged that a project receives different forms of support from different Member States for a certain share of its exported electricity production. However, such set-up would place a disproportionate administrative burden and a substantially increased risk on the project operator, which should and can be avoided.

flexibility, possible deployment volumes and cost saving potential, and may therefore become the option of choice at a later stage.

- In the case of a project tender, the partner countries would determine technology choices and parameters, specific project sites in addition to the electricity to be generated for export (and possibly domestic consumption).

Enforcement / Dispute settlement

Cooperation agreements should clearly define the procedural steps that involved parties can take to ensure that their project partners adhere to the agreement. They should inter alia include an effective dispute settlement mechanism as an instrument of last resort. Either the participating countries agree on jurisdiction of one of the parties' legal systems, or they opt for international arbitration (possibly under UNCITRAL[49] or similar rules). In any case the clause will need to clearly limit the jurisdiction of such settlement mechanism to matters governed by the intergovernmental agreement and exclude competence as regards any interpretation or finding on matters of EU law, which are subject to the exclusive competence of the ECJ. Such delimitation of jurisdiction is also needed as a safeguard for Member States avoiding potentially contradicting legal obligations under an international arbitral award and under EU law.

The agreed support will evidently also need to be enforceable for the project operator itself. The ability and applicable path to do so will depend on project operator's legal relationship with the off-taking Member State(s) (or the designated authority responsible for administering the support scheme). If for example they (or depending entities of them) act as tendering authority, the obligation to pay the support will be inherent in the award decision, which will be enforceable under the jurisdiction of the awarding authority.

Public acceptance for joint projects with third countries

Whatever the form and source of support, policy makers will have to ensure public acceptance of cooperation with third countries. Like in any other policy area this can be best achieved by very clearly communicating the benefits of joint projects with third countries to stakeholders and the wider public. As discussed, for off-taking Member States, benefits are the physical import of electricity from renewable sources substituting electricity from fossil fuel sources, increased energy security through diversification of energy imports, creation of additional markets for the European renewable energy industry, and potential development benefits for the third country's renewable energy industry.

The third country will potentially benefit from direct foreign investment through the project which entails a number of co-benefits such as the creation of jobs and potentially additional businesses along the value chain. In case of partial domestic

[49] Arbitration Rules of the United Nations Commission on International Trade Law, http://www.uncitral.org/uncitral/en/uncitral_texts/arbitration/2010Arbitration_rules.html

consumption the project will also generate environmental benefits and a contribution to increased energy security.

iv. Checklist for joint projects with third countries

The following steps should be taken in preparation of a joint project arrangement:

- ✓ Clearly define the objectives of the cooperation
- ✓ Identify cooperation partner taking into account resources, interconnector capacity or cost for building it, political stability, grid operation, etc.
- ✓ Determine number of participating Member States
- ✓ Agreement on project details
  - o Determine delivery period
  - o Determine amounts that shall be transferred to what Member State(s),
  - o Define which party will bear what risk and associated cost
    - ▪ *The third country bears grid access and transmission risks*
    - ▪ *The off-taking Member State provides financial support for the agreed period and bears interconnection, transmission and balancing risks*
    - ▪ *Sanctions should be attached to the tender to avoid that selected projects are not implemented. Further, the project operator should assume responsibility for the (range of) volume of energy generated and exported vis-à-vis the off-taking Member State(s).*
- ✓ Determine price range for support based on expected LCOE/tender procedure.
- ✓ Coordinate nomination of allocated interconnection capacity and registration of RES in schedule of balance with project partner(s). Determine an independent institution to verify the conditions under which consumption in the EU is deemed to be met according to the Directive. Create a framework where the necessary proof can be submitted alongside annual notifications including that the electricity delivered is derived from renewable energy sources.
- ✓ Design support for a joint project
  - o Decide on type of support, how the electricity will be sold in the EU
  - o Time horizon, volume or project tender?
  - o Contributions of off-taking Member State(s)*?* Potentially design of a joint fund?
  - o Up-front or/and production finance?
- ✓ Designate a dispute settlement mechanism, (domestic/international arbitration)
- ✓ Define common procedures for the annual notification to the Commission
- ✓ Notification of the project to the European Commission (see model form)
- ✓ Accompany the project with a clear communication strategy addressing the expected co-benefits for partners

7. Joint support schemes

The third form of cooperation between Member States as provided by the Directive 2009/28/EC is the establishment of joint support schemes (e.g. a common feed-in tariff, feed-in premium or quota and certificate trading regime), where financial burden as well as the value for target compliance purposes under the Directive is shared between Member States. The rationale is that the efficiency of national support schemes can be enhanced, because the cost of overall production support for renewable energy can be reduced when exploiting a wider base of resources over a larger area. Joint Support schemes would in principle provide the same type and level of financial incentives to renewable energy projects in the participating Member States. They thus ensure that projects are built at the most cost-efficient sites providing that markets and grids are fully integrated. The support framework for renewable energy can be joined for both the electricity and the heating and cooling sector, for certain sectors or sub-sectors only, or even limited to specific technologies or geographic areas.

Between Sweden and Norway a joint certificate trading scheme is in place since 2012, providing the first example of a joint support scheme in practice[50].

i. Legal requirements for joint support schemes

The relevant provision in Article 11 of the Directive again leaves flexibility to the Member States on how to implement joint support schemes. It states that "two or more Member States may decide, on a voluntary basis, to join or partly coordinate their national support schemes". Further Article 11 gives a choice of two modalities of implementation, (a) via (individual) statistical transfers or (b) according to a pre-defined distribution rule for the allocation of renewable energy amounts towards the target achievement of the participating Member States. It can be expected that a distribution rule will be agreed, as the future distribution towards the national targets is a central pillar of the overall arrangement.

Accordingly the energy generated with the support of the common scheme would then be counted towards the cooperating Member States' targets irrespective of the actual geographic location of the generators. The setting up of a distribution rule will need to be notified to the Commission "no later than three months after the end of the first year in which (they take) effect". At the same occasion, as well as every year thereafter, the participating Member States shall also notify the amount of energy form renewable sources produced within the scope of the joint scheme, and which is thus subject to the agreed distribution rule.

The crucial piece of information to be notified to the Commission will be the statistical allocation of the produced and consumed energy towards the cooperating Member States' targets as agreed by them. It will therefore suffice, if the notification sets out the principles agreed for distribution, it quantifies the energy produced and

[50] Norway adopted the EU Directive in the framework of the European Economic Area accepting a binding target for 2020. Both countries have individual targets to fulfil.

consumed within the scope of the common scheme and quantifies the shares of this energy to be counted towards each Member State's target.

ii. Design of a joint support scheme

The details of the design of a joint support scheme will largely depend on the type of support scheme to be implemented. Most of the questions in this regard are identical to the ones arising in the context of conceiving a respective scheme on the national level, simply taking into account the joint resources potential of cooperating Member States. For these questions Member States can therefore be referred to the Commission services' guidance on the reform of support schemes[51] published alongside this document.

However, some aspects specific to the cross-border nature of a joint support scheme remain to be addressed, including distributional effects regarding costs and benefits. The distribution of costs and benefits is an important issue for all cooperation mechanisms, however, they become more pertinent the broader the scope of cooperation. Thus for joint support schemes this becomes one of the central issues to be resolved.

Potentially cooperating partners will need to analyse their marginal technology options and associated cost to reach the target without cooperation and how this would change through a joint support scheme. Depending on the similarity or complementarity of resource and cost structures in the cooperation Member States redistribution of deployment and support cost will vary. In this regard there cannot be a standardised solution, but the further negotiations have to be based on individual circumstances.

Some lessons can already be deducted from the experience already gathered in the implementation of the joint certificate trading scheme between Norway and Sweden, even if this scheme admittedly operates under specific circumstances in the Nordic countries which cannot necessarily be replicated in other European regions. If a joint support scheme is set up between Member States with very similar resource potentials, as in the case between Sweden and Norway, effects of distributional imbalances are minimised. However, the overall savings will be greatest where resource structures differ and cheaper resources can be deployed first. In any case the negotiations and design of a joint support scheme needs to be preceded by a thorough analysis of the distributional effects based on modelling of the development of deployment under a joint scheme.

Scope of a joint support scheme

A joint support scheme could be applicable to all renewable energy projects on the territory of the participating Member States. The Swedish-Norwegian scheme foresees the same certificate price for all renewable energy technologies in all areas of their territory. Within this set-up, all sites and technologies in the participating Member States are competing with each other equally. Alternatively, the Member States could also choose a partial integration of their support mechanisms and limit

[51] Reference to the SWD on RES support guidance

them to certain technologies and/or areas (and opt for a technology specific support scheme, see below).

Level of support from the scheme

Projects should receive the same level of support in all participating Member States. If necessary differentiation between different technologies in different regions could be agreed on to create locational signals. Generic criteria, such as the duration of support and the technology coverage, should in any case be harmonised.

The agreement on the joint scheme will clearly have to prohibit any additional national support for installations that fall under the scheme to avoid any distorted competition between sites in the cooperating Member States.

Type of support scheme

The type of support framework should be chosen to maximise cost-optimisation of the envisaged renewable energy deployment according to NREAPS. The final choice will largely depend on the available resources and in particular their variety (does the resource potential only allow for a very limited number of technologies, e.g. wind and hydro, or are many resources with significantly varying cost structures available) as well as policy objectives. Where only few resource types with similar cost structures are available, a certificate trading scheme can deliver cost-effective results – at least with regard to large scale installations. Even in such scenario effective deployment of small scale distributed generation will – at least in those cases where the technology is not yet competitive on its own account – need a support framework adapted to the limited ability of small scale investors like private households to take market risk (i.e. feed in premiums or tariffs). Where resource and respective cost structures vary, a technology-neutral certificate scheme is likely to create over-subsidisation of low-cost renewable energy technologies, reducing the cost-effectiveness of the scheme. In such case a feed-in premium scheme would be preferable to maximise cost-efficiency. In this regard the issues are identical to any other support scheme and Member States should draw on the principles set out in the guidance on support scheme best practice and reform[52].

When looking for cost-optimisation for realising the renewable energy deployment strategy, it will also be crucial that such analysis does not restrict itself to support cost savings (possibly per technology in a differentiated support scheme) but also takes into due account the effects on overall system costs. While the deployment of a relatively cheap technology in areas with the highest corresponding resources will lower support cost per unit of electricity produced the geographical redistribution of generation will often result in higher cost for balancing and transmitting the power to load centres.

Such cross-border **distributional effects**, i.e. geographical shifting of deployed installations, as well as the shifting of support (and possibly system) costs compared to a non-cooperation scenario. The country with lower cost resources will experience more deployment with all its indirect benefits, while the overall support cost per MW deployed might be somewhat higher. Correspondingly, in Member States with more

[52] Reference to the SWD on RES support guidance

cost-intensive resources support cost will be decreased, but also deployment. These effects will vary depending on resource structures and their interaction with the different types of support schemes, and they will need to be thoroughly analysed. A cost-optimised joint support scheme will usually imply relatively high distributional effects[53]. In such cases a mechanism might have to be found to share the overall cost savings adequately among cooperating Member States.

Cost and benefit sharing

The individual cost and benefit sharing mechanism will be based on the above described analysis of distributional effects and tailored to the type of support chosen.

Where resource and cost structures between cooperating Member States are very similar, like is the case in Norway and Sweden, distributional effects will be relatively small. The cost savings for the Member State with the slightly higher support costs can in this case be deemed to offset the loss of increased commercial activity through the deployment of additional installations now taking place in the other Member State. Vice versa the slightly higher overall support cost for the Member State with the cheaper resources will be counterbalanced by the additional investment on its territory and the corresponding benefits. Therefore in the case of Norway and Sweden it was decided that a mechanism to redistribute such effects was not necessary.

Where support is financed off-budget the default situation would be that cost would be split evenly across each unit of electricity consumed (in a certificate trading scheme just as in a feed-in premium or tariff system). This would however only be acceptable if the amount of renewable energy needed for target compliance by each Member State would be approximately proportionate to the energy (produced within the scope of the scheme) actually consumed[54].

If this is not the case, the solution in a certificate trading system is simply to require suppliers in the participating Member States to submit different amounts of certificates per unit of energy sold to end-consumers, corresponding to the respective Member States' demand for target compliance purposes. In a feed-in premium system this distribution would have to be built into the formula to calculate the consumer levy financing the scheme, attributing cost according to the share of renewable energy accounted to the specific targets (see discussion of statistical allocation below) rather than the amount of energy consumed on each territory. Each solution could in addition allow for the incorporation of correcting factors for the above described distributional effects, if need be.

The risk with regard to target compliance will automatically be shared by the cooperating Member States proportionally in line with the agreed distribution rule as regards the statistical accounting of the energy produced under the joint scheme. To create a level playing field within the joint scheme, it would thus be advisable to align legislation and regulation on licensing procedures, grid access and attribution of connection and other grid costs in participating member States. Additionally rules

[53] As cost savings are realised through tapping low-cost resources first.

[54] This is because irrespective of the implementation of the joint support scheme, target compliance under the Directive remains a national obligation and the national targets under the Directive are not merged to a combined target for the "joint support scheme area" even if the joint scheme would be comprehensive covering all energy sectors.

should be established with regard to entering into further cooperation agreements with other Member States or third countries.

Allocation of energy to the target achievement of the participating Member States

Article 11 of the Directive gives Member States two options to allocate the renewable energy produced within the scope of the joint support scheme for the purpose of national target achievement. Either they initiate a statistical transfer of a specified amount of energy produced on the respective Member States' territories, or they initially set up a general distribution rule to automatically allocate the statistical value of the renewable energy generated under the joint scheme. Eventually there is little difference between those two alternatives, as any statistical transfer will need to be based on an (ideally pre-defined) allocation mechanisms and the allocation via a distribution rule will *de facto* involve a statistical transfer.

Norway and Sweden established a distribution rule that foresees that all renewable energy production after 2012 subject to the certificate system will be evenly shared between them, regardless of the location of production. As they have set up a joint support scheme, it will however depend on what institution buys the certificates from the renewable energy project in question.

Continued coordination

The participating Member States should provide for an institutional setting (a joint committee) to coordinate and jointly monitor the implementation and the functioning of the joint support scheme. A number of matters will require regular exchange of information and common decisions. Such a committee would, in addition to guaranteeing exchange of information in particular on deployment progress, also discuss the design and implementation of the regulatory frameworks and the possible need for further development to be subsequently implemented by the participating parties.

iii. Broad checklist for joint support schemes

For joint support schemes Member States need to address the following issues

- ✓ Determine number of participating Member States
- ✓ Conduct a comprehensive cost-benefit analysis based on individual resource potentials and expected target compliance cost to assess cost savings potential as well as redistributional effects
- ✓ Based on that analysis decide on an optimal joint support scheme taking into account the Commission services' guidance on support scheme best practice and reform, including
  - o Scope of the joint support scheme (limiting sectors, technologies or geographic coverage, bearing in mind that cost benefits will be maximised the broader the scope)
  - o Type of support scheme
  - o Level(s) of support
  - o Technology and/or geographical differentiation
  - o Time-limits of support
  - o …
- ✓ Determine mechanisms to ensure equitable attribution of costs and benefits (for consumers)
- ✓ Establish a dispute settlement forum:
  - o Domestic judicial proceedings under one party's national law,
  - o International arbitration (strictly limited to disputes relating to the agreement)
- ✓ Establish a platform for regular coordination meetings of the participating Member States
- ✓ Fix a common procedure and designate competent authorities for the annual notifications to the European Commission

Model notification letters and model agreements are made available on the Commission Directorate general for Energy's website:

http://ec.europa.eu/energy/xxxxxxxxxxxxxxxx