

Renewable energy

Cross-border cooperation on renewable energy



As part of its objective to achieve a climate neutral energy system, the EU has been encouraging regional cooperation on renewable energy. This may take the form of joint renewable energy projects, support schemes or statistical transfers. Despite the clear and abundant benefits of such cooperation, few Member States have embarked on cross-border projects. This briefing analyses the barriers holding countries back and makes recommendations to overcome the challenges, based on the experience of three case studies on cooperation between Denmark and Germany, Norway and Sweden, and Ireland and the United Kingdom.

Key messages

- Cross-border cooperation on renewable energy delivers multiple benefits for the participating countries: more efficient and cheaper electricity generation, increased certainty in the market, open access to new resources and opportunities, and facilitation of other international projects.
- Cross-border cooperation can also contribute to the integration of the EU internal energy market, the harmonisation of national legislative and policy approaches across EU Member States and the achievement of EU energy targets.
- Despite its potential benefits and the supportive EU policy framework, few examples of cross-border cooperation on renewable energy exist today.
- The analysis of concrete examples highlights several barriers, such as the complexity of reaching agreements, concerns about conflicts with national measures, uncertainty on the sharing of costs and benefits, and public acceptance.
- Strong political will, mutual trust, good governance, flexibility in negotiations and national legislation, and a coordinated communication strategy emerge as some of the key enablers to overcome the barriers.

This briefing aims to provide practical insights on the main challenges faced by countries in developing cross-border projects and schemes for the deployment of renewable energy sources (RES), and the key enablers to overcome them. It summarises the lessons learnt from the analysis of three specific projects [1]: two implemented joint support schemes (the joint electricity certificate market set up between Norway and Sweden, and the joint auction for ground-mounted solar photovoltaic (PV) energy between Denmark and Germany); and one attempted, but ultimately abandoned scheme (a joint project on wind energy between Ireland and the United Kingdom).

The analysis was based on a literature review and interviews with some of the authorities involved in the projects [2]. A detailed analysis is available in the report [Cross-border regional cooperation for](#)

Energy

deployment of renewable energy sources(ETC/CME, 2020), prepared for the EEA by the European Topic Centre on Climate Change Mitigation and Energy.

Cross-border cooperation reduces costs and creates opportunities

The importance of cross border cooperation on renewable energy — where two or more countries develop a joint RES project or support mechanism — has been emphasised in the energy and climate policy framework for 2030 as well as in the European Green Deal. The recast of the Renewable Energy Directive (Directive (EU) 2018/2001) and the Energy Union Governance Regulation (Regulation (EU) 2018/1999) specifically mention regional cooperation as an important tool for meeting EU climate and energy targets in a cost-effective manner.

Indeed, the economic case for cross-border cooperation is strong. As highlighted by several research projects (Ecofys, 2014; Caldés et al., 2018; Meus et al., 2019), adopting a cooperative approach when meeting national and EU renewable energy targets can reduce overall costs and maximise benefits for European citizens, with an estimated cost saving potential of up to EUR 1.3 billion a year (EC, 2016). Beyond the economic benefits, strong cooperation on RES development can bring about other positive impacts: from promoting long term partnerships to fostering innovation (Kerres et al., 2020).

Embarking on cross-border cooperation brought a series of benefits to the participating countries in the case studies analysed. In the absence of ex-post evaluation studies, the cost reductions achieved by the joint support mechanisms are not known, nor is the value of investments triggered by them, compared to that of national measures. However, early signs support the cost-cutting potential of cooperation described in model-based assessments. For example, the joint auction between Denmark and Germany resulted in bids with historically low electricity prices for solar PV in those countries. As a result, Denmark more than halved the estimated amount of state aid expected to be granted for the project (von Blücher et al., 2019).

Cross-border cooperation in renewable energy reduces costs and creates new opportunities for countries.

Another indication is the very low cost for consumers of the Norwegian-Swedish certificate market, in comparison with support systems in other EU Member States. This, however, is probably influenced both by the common certificate market and by national circumstances, such as availability of locations with good RES potential.

Energy

Beyond the purely economic benefits, cooperation projects create additional opportunities for countries. By joining with Norway in a common market, Sweden gained access to more hydro power at low cost, as well as to additional wind power. Similarly, Germany gained access to locations with a high number of full load hours in Denmark. This experience also creates good conditions for future international RES projects, with or without state support.

Developing cross-border mechanisms also increases certainty in the market and creates safe trading conditions for investors, as any change in the agreement would have to be discussed with the partnering country. Finally, these projects provide an opportunity for learning and testing for the countries involved and open the door to various types of cooperation in the energy field such as in science, technological innovation, energy policy and more.

In addition to direct benefits for participating countries, cross-border cooperation presents potential benefits for the EU as a whole. It might contribute to a more dynamic, efficient and integrated internal energy market by providing a level playing field among Member States and promoting the harmonisation of national legislative and policy approaches. At the same time, it could promote the more effective achievement of Energy Union targets, while increasing the security and resilience of the energy system.

Political will, flexibility, good governance and communication: keys to overcoming the challenges

At the risk of stating the obvious, the first requisite for the design and development of a cross-border cooperation project is **a strong political will** to reach an agreement. Tackling the technical, political and legal complexities of such an agreement is, by no means, an easy task. That is why political will must be backed with **sufficient time and resources** allocated to the negotiations, allowing for different stakeholders to be involved and ensuring that the specific **legal, economic and political circumstances** of the participating countries are identified and taken into account. As illustrated by the case of Norway and Sweden, it took nearly a decade and several rounds of negotiations before the common certificate market became operational.

The **efficiency of the cooperation mechanism** appears to be a key factor in building political support for the cases analysed. Countries only came to an agreement when the benefits were perceived to be larger than the associated costs and risks, which highlights the importance of identifying and quantifying them as much as possible.

However, countries should keep a **flexible approach** and focus on how cross-border cooperation would help them meet their objectives in a more **cost-efficient** manner compared with acting individually. Both costs and benefits are heavily influenced by national circumstances (e.g. taxes, spatial planning restrictions). Furthermore, some of the benefits might be impossible to quantify or might become evident at different times. While a balanced distribution of costs and benefits between

Energy

participating countries must be pursued, countries should bear in mind that their circumstances are different to those of their counterparts, making a perfectly equal distribution very difficult.

This message, nonetheless, might be difficult to convey to citizens, especially if there is a public perception that costs and benefits are insufficiently aligned. In such cases, public acceptance and political support could be negatively affected. This was observed in the case of Ireland and the United Kingdom, where some stakeholders feared that Ireland would suffer the environmental impacts of having the wind farms installed in their country while receiving few benefits in return.

Good communication plays a fundamental role, ensuring that the benefits of cooperation are sufficiently explained to the public.

In such cases, **good communication** plays a fundamental role, ensuring that the benefits of cooperation are sufficiently explained to the public (Ecofys, 2015). While the two other projects analysed enjoyed a wider acceptance, Norway and Sweden regularly exchanged information on their communication strategies, not only to accurately inform stakeholders, but also to avoid any communication that could influence price expectations on the common certificate market. Denmark and Germany placed the requirement for physical imports of electricity in their individual tenders to ensure there was some visible and tangible effect that could be easily communicated, coupled with a system of statistical transfer.

Flexibility, in a regulatory sense, also featured as a key enabler when designing a cooperation agreement that can be well integrated with existing national frameworks. Countries benefit from having as much **margin of manoeuvre** as possible in the negotiations. Once a country has already passed detailed provisions in national legislation, there is less flexibility in negotiating the agreement, since the partner country also has to agree with most or all of these national provisions.

This is illustrated by the case of Denmark and Germany: according to German national legislation, PV-installations on agricultural land do not qualify for the national support scheme. Denmark chose to respect the way in which Germany wanted to deploy renewables and implemented the same site restrictions in the Danish tender, but only for installations on German soil. Consequently, the site restrictions only applied to the German territory in both the Danish and German pilot tenders. Some stakeholders argue that this was a critical disadvantage for German installations in the cross-border tenders.

The above paragraph highlights the importance of a **coordinated approach** to energy policy within a well-integrated electricity market; not only between the participating countries, but also at EU level. This also alleviates concerns that cooperation might interfere with the effectiveness or efficiency of domestic policy measures, which is commonly reported as a barrier to regional cooperation (EC,

Energy

2013).

This unwanted interaction between national and cross-border measures was perceived in the joint auction between Denmark and Germany, where the totality of the auctioned capacity was awarded to installations on Danish soil. It has been claimed that the prospects of future auctions in Germany might have had a discouraging effect on German bidders. Conversely, the lack of upcoming auctions in Denmark, might have encouraged Danish companies to bid aggressively in the joint auction. This example also stresses the importance of the timing of cross-border and national measures; as well as the need to carefully consider the interactions between the different institutional, legal and financial arrangements among the participating countries.

Good governance emerged as another crucial element in negotiations. It is a pre-requisite for building trust in the system and among parties, which was repeatedly mentioned as the basis for any agreement. Trust, together with a clear set of rules, minimised uncertainties and raised the stakeholders' confidence of a successful outcome.

Trust, together with a clear set of rules, minimised uncertainties and raised the stakeholders' confidence of a successful outcome.

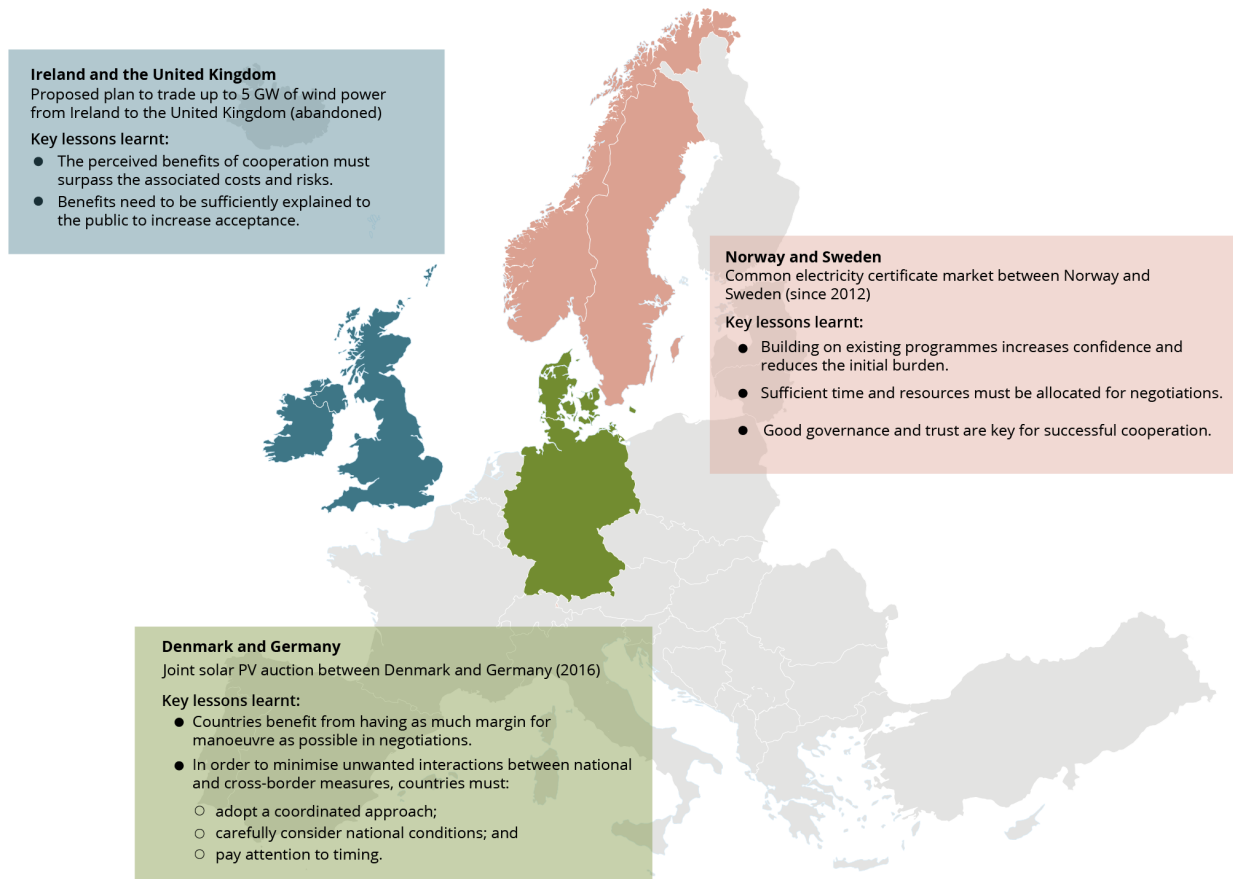
Norway and Sweden, for example, agreed that there would be no additional support granted to renewables besides the joint programme. Denmark and Germany excluded any exit provision from their joint auction and established a data transfer system between the countries based on mutual recognition. These measures increased the confidence of the agreeing parties and, importantly, provided political stability and predictability to investors within the frame of the agreements.

Building on existing programmes can contribute to reassuring stakeholders. Norway and Sweden, for example, have a long history of cooperation in the energy field under the auspices of the Nordic Council and as members of a common electricity market. Most importantly, Sweden had been operating a green certificate market prior to its agreement with Norway. As a result, the common certificate market benefitted from the know-how accumulated by 9 years of Swedish experience. This significantly reduced 'first mover risks' and the technical challenge of setting up the scheme.

Finally, other factors that supported the establishment of cross-border cooperation projects were the geographical proximity between participating countries, existing electricity interconnections, aligned environmental objectives and similar potential for renewable electricity production.

Energy

Figure 1 - Main recommendations drawn from case studies



Footnotes

[1] Another example is the statistical transfer of certain amounts of renewable energy from both Estonia and Lithuania to Luxembourg. These were not included in this assessment as they were entirely based on statistical transfers, without any common project or support scheme.

[2] Danish Energy Agency, Norwegian Water Resources and Energy Directorate, Swedish Energy Agency and responsible authorities in Germany.

Energy

References

- Caldés N., et al., 2018, Renewable Energy Cooperation in Europe: What Next? Drivers and Barriers to the Use of Cooperation Mechanisms, MDPI Open Access Journal 12(1), pp. 1-22
- EC, 2013, Commission Staff Working Document - Guidance on the use of renewable energy cooperation mechanism, SWD(2013) 440 final
- EC, 2016, Commission Staff Working Document - Impact Assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (recast), SWD/2016/0418 final
- Ecofys, 2014, Cooperation between EU Member States under the RES Directive, Ecofys Netherlands B.V.
- Ecofys, 2015, Driving regional cooperation forward in the 2030 renewable energy framework, Ecofys Netherlands B.V.
- ETC/CME, 2020, Cross-border regional cooperation for deployment of renewable energy sources, European Topic Centre on Climate Change Mitigation and Energy
- Interviews with representatives of the Swedish Energy Agency, Norwegian Water Resources and Energy Directorate, Danish Energy Agency and responsible authorities in Germany.
- Kerres, P., et al., Renewables cross-border cooperation in the Energy Community, Aures II & Energy Communities
- Meus J., et al., 2019, On International Renewable Cooperation Mechanisms: the Impact of National RES-E Support Schemes, Energy Economics 81, pp. 859-873
- Von Blücher, F., et al., 2019, Design options for cross-border auctions, Navigant, Fraunhofer ISI, DTU, Aures II

Identifiers

Briefing no. 23/2020

Title: **Cross-border cooperation on renewable energy**

HTML - TH-AM-20-023-EN-Q - ISBN 978-92-9480-307-8 - ISSN 2467-3196 - doi: 10.2800/88331

PDF - TH-AM-20-023-EN-N - ISBN 978-92-9480-306-1 - ISSN 2467-3196 - doi: 10.2800/532440

