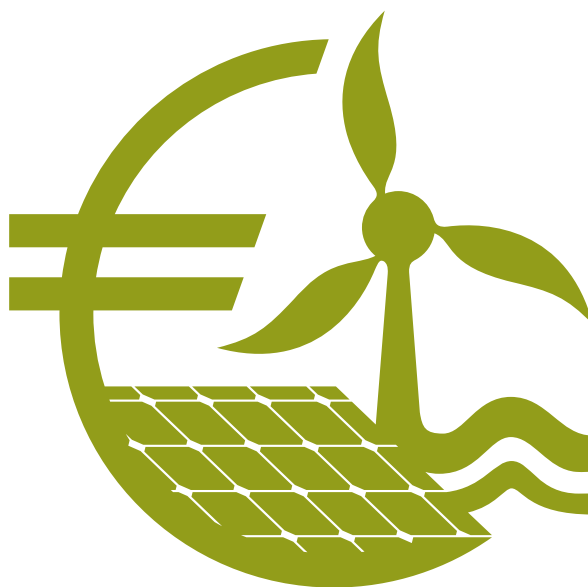


CORE THEME 1

RES Electricity



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Authors

Anne Kimmel, Federal Ministry for Economic Affairs and Energy, Germany

Lara Paetsch, Federal Ministry for Economic Affairs and Energy, Germany

Philipp Pohle, Federal Ministry for Economic Affairs and Energy, Germany

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1 IN A NUTSHELL

Increasingly high shares of renewable energies, the development and market maturity of different technologies and public concerns about the cost-effectiveness of electricity are developments to which electricity markets and support schemes must be able to respond effectively. At the same time, the intensifying European integration of power markets, in particular through increased and enhanced market coupling and grid expansion, requires cooperation in the field of renewables to be stepped up in parallel, while fully maintaining legal certainty for Member States' (MS) support frameworks. Considering these requirements, European MS face numerous challenges when designing effective and efficient support schemes for electricity from renewable energy sources (RES-E) and implementing the Renewable Energy Directive 2009/28/EC (RED I). Therefore, it seems mutually beneficial for MS to exchange views on these issues.

During the third phase of the Concerted Action on the Renewable Energy Sources Directive (CA-RES), Core Theme 1 addressed 19 topics related to support schemes for RES-E, cooperation mechanisms and integration of RES-E in electricity networks. Here Core Theme 1 participants presented and discussed their experiences with cross-border opening and cross-border auctions, renewable energy source (RES) installations approaching the end of their support period and the corresponding framework, citizen participation in terms of self-consumption and energy communities, the implementation of the Guidelines on State aid for Environmental Protection and Energy (EEAG), and several other topics. Overall, the sessions within Core Theme 1 provided a platform for in-depth discussion on the above-mentioned topics and on the implementation of Articles 3, 4, 6-11 and 16 of the RED I.

In addition, two Plenary Meetings in 2019 placed the focus on the provisions of the revised Renewable Energy Directive 2018/2001/EU (RED II), which entered into force only a couple of months before, and its impact on the areas listed above. Furthermore, other provisions of the legislative package “Clean Energy for all Europeans” (Clean Energy Package – CEP) were included in the discussion, especially the revised Directive on common rules for the internal market for electricity (EU) 2019/944 (EMD) and the new Regulation on the internal market for electricity (EU) 2019/943 (EMR) as well as the Governance Regulation (Regulation 2018/1999/EU). In this context, participants discussed topics such as the New Union Renewable Energy Financing Mechanism and how to let it serve the purpose of gap-filling, as well as the RED Enabling Framework. The participants' presentations and discussions were framed by numerous experts' presentations as well as updates by policy officers from the EU Commission.

Beyond that, a taskforce within Core Theme 1 was established on renewable energy cooperation mechanisms. The purpose of this taskforce was to identify and analyse what have been the key factors that explain the success and unused potential in using cooperation mechanisms since 2009, but also for the post 2020 framework. The taskforce finished its work in May 2019.

Another taskforce of Core Theme 1 emerged from the previous Core Theme 2 (RES Heat) taskforce on self-consumption of renewable heat, using its new focus to enhance the overall perspective for the electricity system, in particular the effects on the grid and the flexibility potential of self-consumption combined with heat pumps and storage.

2 TOPIC IN THE SPOTLIGHT

An important topic in the spotlight during Core Theme 1 in this third phase of the CA-RES was cross-border cooperation and the opening of national support schemes. While the RED I already provided for cross-border cooperation as part of the so-called cooperation mechanisms (i.e. statistical transfers, joint projects and joint support schemes), it had not yet specifically mentioned the opening of national support schemes for cross-border auctioning. By contrast, the RED II provides for such cross-border auctioning of renewable energy.

Therefore, in the beginning of the third CA-RES phase, when the RED II had not yet come into force, topics were linked to the above stated cooperation mechanisms. Core Theme 1 provided a platform to present and discuss how cross-border opening of support had been implemented in the MS. It became clear that several MS have created legal frameworks for opening or were in the process of creating them by that time. As a result, a broad overview of legal frameworks for cross-border opening of RES-E support was provided. The legal conditions attached to such opening included a cooperation agreement in all cases, and reciprocity, physical import and limited opening in most cases.

Participants highlighted the importance of public acceptance of cross-border opening. It was agreed that MS may require conditions like physical import, reciprocity and limited opening to gain public acceptance, which is key for opening up support schemes. As for reciprocity, participants highlighted that it was important for creating mutual benefit for partner countries as well as mutual learning. With regard to physical import, participants pointed out that it was important for securing an actual effect on the domestic electricity market.

While opening national support schemes has the potential to achieve cost-efficient RES deployment, e.g. through optimising natural resource availability, maximizing RES market values and minimizing land costs, the discussions during those sessions raised the issue that differences in the cost of RES deployment depend not only on natural and economic conditions, but also on different regulatory conditions (e.g. differences in site restriction, permissions and grid connection, fiscal and tax aspects). Hence, Core Theme 1 aimed to explore and improve the understanding of investors' perspective on cross-border cooperation to support MS in their considerations about opening up support schemes. In a 2018 session, the focus was placed on the question as to which regulatory conditions are most relevant for the cross-border deployment of renewables and how to account for regulatory differences. During the lively discussions, participants concluded that cross-border auctions can lead to a dynamic where MS adapt their regulatory framework to lower the costs, as the regulatory framework has a significant impact on auction results. Being aware of this fact, the opportunity for a "race for good design" should be the focus, and a "race to the bottom" should be avoided.

Under the revised Renewable Energy Directive, inclusion has been made of dedicated provisions for the opening of national support schemes for electricity produced from renewable sources in other Member States. According to Article 5 RED II, Member States may unilaterally open their support schemes by implementing a cross-border auction that allows bidders to participate in another cooperating MS. Moreover, cross-border auctioning continues to be possible as part of the establishment of joint support

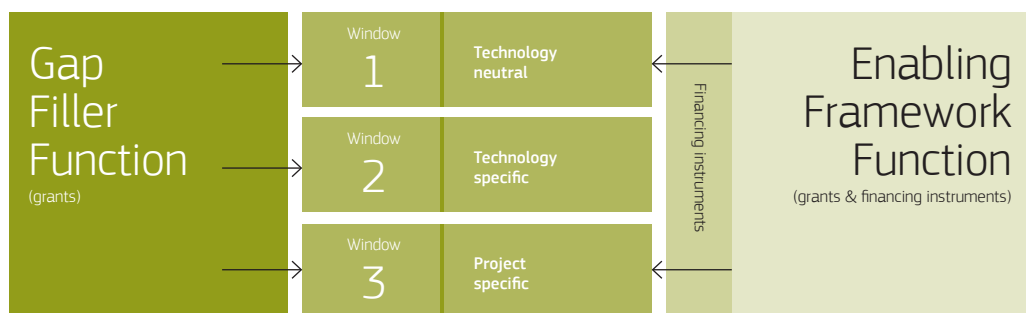
schemes as provided for in Article 13 of the RED II, whereby two or more cooperating MS may set up a joint auction that is open to installations in all participating countries. MS may either join or partly coordinate their support schemes. The EEAG prescribe that “operating aid schemes should in principle be open to other EEA countries and contracting parties of the Energy Community to limit the overall distortive effects” and that the European Commission would view notified schemes that are open to other EEA or Energy Community countries in a favourable light. In the past, the Directorate-General for Competition (DG Competition) of the European Commission has thus approved support schemes in various Member States under the sole condition that they were (partially) open to installations from abroad.

In addition, auctions spanning several EU Member States will also be implemented under the renewable energy financing mechanism that will be established according to Article 33 of the Governance Regulation by January 2021. The financing mechanism serves two purposes:

1. covering a gap along the Union RES trajectory to 2030 by tendering support for new RES projects in the Union, and
2. contributing to the RED II enabling framework irrespective of any gap by providing support in the form of low-interest loans, grants, or a mix of both.

The first purpose primarily relies on financial contributions from MS to the financing mechanism. For the second purpose, additional sources, such as European Union funds, private sector contributions or voluntary payments by MS are foreseen. Non-repayable grants, in the form of upfront investment aid or operating aid, may be tendered in three main technology-windows: a technology-neutral window, a technology-specific window and a project-specific window. The following figure illustrates this:

FIGURE 1 Technology Windows in the Financing Mechanism



Source: Navigant Interim Report for the European Commission

Within the following discussion, both purposes of the financing mechanism (gap-filling or enabling framework) were seen as important for Member States. There was generally a strong interest in participating in the financing mechanism as a contributing MS. Many participants expressed the view that the mechanism may be a suitable option to allow for a robust level of ambition in their Integrated National Energy and Climate Plans (NECP), while tapping into low cost RES potential in other MS.

Various Member States also expressed interest in participating as a hosting MS. However, there were also concerns expressed on how the mechanism would interact with national RES auctions and how RES integration into markets and grids would be dealt with. It was reiterated that in principle the hosting Member States are in charge of defining their willingness to participate, including the volumes, technologies and the available sites, so as to maximise the benefits from acting as a hosting MS and limiting the unintended consequences, such as increased costs for redispatch due to increased RES shares.

Furthermore, the financing mechanism foresees EU-wide RES auctions as one instrument to help achieve the binding EU-wide RES target of at least 32% in gross final energy consumption by 2030. In this context, the discussion among participants focused on ways to conduct cross-border auctions based on specific cooperation case studies serving as practical examples for implementing the opening of national support schemes.

3 CHALLENGE MEETS SOLUTION

3.1 Highlights from the Discussions

As stated above, a new framework for EU energy policy was introduced during the third CA-RES phase. Therefore, a couple of topics were covered both before and after the introduction of the CEP. This provided MS with the opportunity to benefit from experiences in implementing RED I when considering the provisions of RED II.

Next to the specific topics, two sessions were set up to provide for a first exchange with representatives of the European Commission and among participants on the interpretation and implementation of new and modified provisions of the RED II with regard to RES-E as well as the provisions of the EMD and the EMR.

Specific topics covered in the discussions during the sessions of Core Theme 1 are described in the following sections.

The Role of Self-Consumption of Renewable Electricity and Energy Communities

Community driven energy projects have been part of the European energy landscape for years. Various types of community projects and initiatives have emerged with the aim of empowering energy consumers by giving them a direct stake in the production and consumption of distributed energy sources. In a 2018 session, participants concluded that the key challenge regarding renewable energy communities will be to find a smart definition that avoids misuse, while eliminating barriers and preventing potential discrimination as well as avoiding market distortions.

The CEP introduces the concepts of citizen energy communities (Art. 16 EMD) and renewable energy communities (Art. 22 RED II) into European legislation. Although the provisions for both community types are similar, they do differ in some important respects: renewable energy communities are about all sources of renewable energy excluding fossil energy, while citizen energy communities are about all sources of electricity but not other forms of energy. Both concepts overlap when an energy community is active in 100% renewable electricity, in which case renewable energy communities become a subset of citizen energy communities.

Just like the concept of energy communities, self-consumption as such is not a new phenomenon. However, its growing importance within the MS has created the need for an overarching European definition for “renewables self-consumers” and “jointly acting renewables self-consumers” in the RED II, and to link those to the concept of “active customers” as defined in the EMD. This was one of the key discussions from earlier sessions before the RED II came into force, where it was noted that most MS encourage self-consumption, mostly for reasons of consumer empowerment and political acceptance. The definition of self-consumption, however, varies between MS. For many MS, the most common

support measure for RES self-consumption was a partial or complete exemption from grid fees and other charges. These incentives may, however, have a strong distributive effect, especially in market environments that are characterised by comparatively high fees and charges on electricity. In some MS, this has led to a “learning curve” where the definition of self-consumption was narrowed down and incentives were reduced. Thus, the attendees concluded that a targeted definition of and support for self-consumption were critical to reap benefits for the overall electricity system.

To complete the picture regarding the electricity system as a whole, there was a joint session with Core Theme 2 (RES Heat) on effects on the grid and the flexibility potential of self-consumption combined with heat pumps and storage in 2018. Its main conclusion was that the potential of using power-to-heat (PtH) to increase self-consumption strongly depends on the region and the prerequisites found there (e.g. low building insulation standards) and hence on the interaction between residual power generation and potential demand for power-to-heat. Balancing the conflict of interests between decarbonization using efficient but less flexible heat pumps presented its challenges. This was also true of flexibility options using electrical boilers and other technologies to decarbonise the heat sector like renewable gas.

RES Installations without Financial Support

In two sessions, participants discussed the EU legal framework and potential for installations that have outlived or will soon outlive their period of support.

A significant number of Europe’s renewable energy installations will reach the end of financial support periods between 2020 and 2030. In this event, RES operators are confronted with a whole range of different technical, economic and legal questions on which the decision to continue, repower or dismantle their operations depends. These include the physical lifetime of the installation (i.e. for how many more years it can be operated without major investments), the future income opportunities – which, in turn, depend on the installed capacity, market access (and related costs) and the available market arrangements (e.g. power purchasing agreements) –, and, more generally, the legal framework in place. While the RED I has not specifically accounted for repowering or lifetime extension, the RED II and the EMR are shaping the relevant legal framework, together with the choices made nationally to encourage repowering or to keeping installations running as long as possible.

During the discussions it was pointed out that in many cases, repowering might be more attractive than lifetime extension of existing plants – in particular to increase site efficiency and deal with increasing public opposition to new greenfield projects. Lifetime extension might, however, be interesting as a preparatory/intermediate step to the repowering of a specific site or where repowering might not be possible (e.g. height restrictions). Nevertheless, many MS stated that they have not made any legal changes to accommodate RES installations without support. Some MS saw the need to set up an enabling framework, however, such as a framework for involving municipalities to support RES projects as well as a structured framework for power purchase agreements. In many MS, only in future will we see whether RES installations falling outside their support scheme will keep running.

Grid Congestion Management

The objective of the first session on this topic, which was held right at the beginning of the third CA-RES phase in 2016, was to gain a common understanding of redispatch as a tool to prevent grid congestion.

Network constraints restrict the amount of electric power that can be transported in the grid. In many parts of the European grid, congestion management is becoming more important, in particular where the shares of variable renewables increase while the flexibility on the markets has not yet been sufficiently developed and grid expansion is not keeping up. Where the traded electricity cannot be transmitted safely on the existing grid, redispatch is needed.

Generally, the Transmission System Operator (TSO) is responsible for managing grid congestions. After market clearing and, if necessary, the TSOs undertake the required actions to avoid congestion. While some redispatch will always be necessary in a system with a zonal pricing design like the European one, the quantity of necessary redispatch should decrease in the longer run through investment in grid reinforcements to solve structural grid congestions. This will and should remain the key measure for enhancing the overall transmission capacity of the grid. The session, however, aimed to explore short-term measures, i.e. for redispatch, to remedy grid constraints which arise.

In the discussions, participants concluded that the pricing mechanism for redispatch depends very much on the role of redispatch on the market. If its role is minor, it can be linked to an existing pricing mechanism, such as the balancing market. This is particularly the case where the volume of redispatch needed is only a fraction of the volume of balancing energy. With higher volumes of redispatch and smaller balancing markets e.g. due to strong balancing responsibilities, the risk of distortions between the markets grow significantly. This is also true for distortions with regular short-term markets (intraday and day-ahead). As redispatch markets create locational price signals, installations would optimize themselves according to their geographical location vis-à-vis specific congestions. They would thus adjust their bidding behavior on the zonal markets accordingly, often increasing congestion first before earning high rents after being regulated up or down. In these circumstances a regulated system needs to be put in place, so that the actual lead markets for electricity trade are not distorted.

The introduction of the CEP came along with new provisions on priority dispatch for RES-E, curtailment of RES electricity in case of redispatch, balancing responsibility for RES-E, rules on energy communities and active customers. In order to facilitate initial discussions on the interpretation and implementation of those new and modified provisions, a discussion on best practices surrounding priority dispatch and curtailment in case of redispatch was added to the agenda of Core Theme 1 in 2019.

According to Article 16 of the former RED I, Member States were supposed to ensure priority dispatch for RES electricity. Moreover, Article 16 RED I provided that curtailment of RES-E in case of redispatch should be minimised. Due to the legal nature of the Directive and the lack of more detailed provisions, implementation of these provisions on priority dispatch and curtailment of RES has been rather uneven across Member States.

With the CEP, the provisions on priority dispatch and curtailment of RES have been moved to the revised Electricity Market Regulation (EMR), where they have been considerably revised and set out in more detail. Priority dispatch under the RED I was mostly understood as a rule on final curtailment of RES installations. The revised EMR has introduced a clear distinction between priority rules for RES with regard to dispatching (“priority dispatch”, Art. 12 EMR) and rules on curtailment in case of redispatch (Art. 13 EMR).

On the one hand, the new provisions are far more detailed than the provisions contained in the RED I. On the other hand, contrary to RED I, the EMR, as a regulation, does not need to be implemented by the Member States and the new provision thus apply directly from 1 January 2020 (Art. 71 para. 2 EMR), which means that all system operators must act according to the new rules.

During the discussions, participants concluded that the concept of priority dispatch under RED I is implemented unevenly across the MS. At that time, most MS were still analysing which changes are necessary in the legal framework due to the modified provisions on priority dispatch in Art. 12 EMR. Some MS might have to reduce the scope of priority dispatch granted under their national legal framework, whereas other Member States might have to extend the scope of priority dispatch.

Sector Coupling and its Contribution to System Integration of Renewables

A joint and integrated consideration of all three energy sectors (“sector coupling”) becomes increasingly important for the transition to a low carbon energy system. While the share of renewables has strongly developed in the electricity sector, the heating and cooling sector as well as the transport sector are still characterised by a high share of fossil fuels. Using renewables-based electricity in applications in other energy sectors, such as heat pumps in the heating and cooling sector or electric mobility in the transport sector, sector coupling can help to achieve ambitious climate targets. In addition, sector coupling can help to increase power system flexibility in systems with a high share of variable renewables.

During the relevant session that was held in 2018, a business game was played, which focused on the implications of regulatory price components on the profitability of various sector coupling technologies. At the end of the session, participants concluded that sector coupling is an important topic that is already being discussed intensely in many MS and will become more and more important with rising shares of renewables in the electricity sector. In some countries, the coupling of the heat and electricity sector is already highly developed and measures to encourage sector coupling have been established.

National Planning for the RES Targets

Under the RED I, National Renewable Energy Action Plans (NREAPs) were used as a tool for the integrated planning of renewables deployment in line with the 2020 RES targets in each MS. The Governance Regulation’s proposal introduced the concept of NECPs as one of its central elements. These plans will cover the period from 2021 to 2030 and will include chapters on targets as well as policies and measures for renewable energy deployment in different sectors. In the relevant session, participants discussed the experiences had and lessons learned, involving national planning for the 2020 RES targets in the electricity sector with the NREAPs. Consultation has also occurred in recent years to allow the effective preparation of the new NECPs. Among other topics, participants discussed

the advantages and disadvantages of multilateral and bilateral consultations. They concluded that multilateral consultations need fewer resources regarding time and personnel and serve to establish the viewpoints of several neighbours at the same time. Bilateral consultations, on the other hand, make it possible to go deeper into specific subjects, but need considerably more time and effort. Participants concluded that depending on the specific situation, it might make sense to combine both approaches, e.g. by conducting a broad multilateral consultation with all neighbours and additionally consulting issues that are of specific interest for one neighbour in a bilateral manner. Obviously, the number of neighbouring MS also influences the choice between multilateral and bilateral consultations.

The Guidelines on State Aid for Environmental Protection and Energy

The Guidelines on State Aid for Environmental Protection and Energy (EEAG) were published by the European Commission in 2014. In the meantime, a large number of MS endeavoured to align their RES-E support mechanism with new requirements. With the new RED II, provisions have been introduced for the first time on the legal design of renewable energy support schemes. Most of them relate to RES-E, and while they leave certain discretion to the MS as regards their implementation into national law, they are more concrete than under the previous regime of the RED I.

During the corresponding Core Theme 1 sessions at the beginning of the third CA-RES phase, several MS gave insights into their national reforms of the RES support schemes and the implementation of the EEAG. In the context of the EEAG, Core Theme 1 also addressed technology neutral auctions. The EEAG suggest a technology neutral approach, meaning that all renewables technologies compete against each other to determine those projects with the lowest generation costs. However, most countries have a tradition of technology specific RES support. This has sparked an ongoing debate on whether to conduct technology neutral or technology specific auctions. Participants discussed whether specific auction designs can address concerns related to technology diversification, grid stability and system integration. They concluded that integrating objectives other than cost-efficiency in the auction design of technology-neutral auctions is challenging. Finally, participants found that comparing results of technology-neutral auctions across Member States remains complex, since each MS uses different types of auction designs.

The later sessions towards the end of the third CA-RES phase set the focus on the role played by the EEAG on the legal design of national RES support schemes and its interactions with the requirements of RED II. In this context, participants had the opportunity to share their experiences and to have an input in revising the Guidelines in 2021. In addition, policy officers from DG Competition gave a presentation. Regarding the new provisions under the RED II, the Commission representatives stated that they did not see any big issues between those provisions and the EEAG. Rather, it was indicated that the EEAG regime may have contributed to the rules on RES support schemes in Art. 4 RED II and that the assessments done under the EEAG will remain valid. With regard to the Green Deal, it was stressed that the new Guidelines are supposed to accompany the new initiatives, which may result in a shift in the scope of the EEAG. In the following discussion, DG Competition was asked to provide more clarity on the interpretation of the term “technology neutrality”. As they explained it, they understand the related provisions not as signifying that all technologies are equal and thus having to compete in one auction, but rather that the auctions should be “open, competitive, non-discriminatory and transparent”.

3.2 Good Practices

In the Plenary Meetings of Core Theme 1, several good practice examples from MS were shared among those present during the third CA-RES phase. One worth highlighting is the Danish-German opened pilot tenders for solar photovoltaics (PV) in 2016. Another one is the first statistical transfer agreement between Luxemburg and the Baltic states of Lithuania and Estonia dating back to 2009.

Danish-German opened Pilot Tenders for Solar PV

The submitted Danish opened pilot tender for solar PV took place in the 4th quarter of 2016 in the framework of a Danish-German cooperation agreement. Germany and Denmark signed the agreement – the first of its kind – in summer 2016. Denmark agreed to open 2.4 MW of a 20 MW PV tender for installations located in Germany, while Germany in turn agreed to open a PV tender with a 50 MW capacity for installations located in Denmark. During the negotiations, the distinction between tender conditions and location-specific requirements proved especially important.

Whereas the tender conditions were mainly set by the country conducting the tender (e.g. fixed or sliding premium, pre-existing qualifications, pricing rules), for location specific requirements, however, it was agreed that the rules of the country in which the installation is located would apply (e.g. site restrictions, grid connection, curtailment).

The result of the Danish PV tender was surprisingly low: the winning tenders were awarded a fixed premium of 12.89 Danish ore/kWh for 20 years (approx. 1.7 ct/kWh). There were no bids from installations located in Germany.

Subsequently, participants were given an overview of the German opened pilot tender for PV and its results. It was explained that according to the German legal basis for the opening, the three conditions of cooperation agreement, reciprocity and physical import are required. In order to implement the principle of reciprocity, the legal basis foresees different models of cooperation, namely mutually opened and joint auctions.

In the German opened pilot auction, a sliding market premium based on local technology-specific market value was auctioned. 5 bids of 10 MW each were awarded at 5.38 ct/kWh, all of them located in Denmark. The result was significantly below the average level of national PV auctions at that time (August 2016: 7.25 ct/kWh; December 2016: 6.9 ct/kWh). The level of competition was very high: 43 bids with a volume of 297 MW had taken part in the tender, with about half the bid volume located in Germany and half in Denmark. On average, projects located in Denmark submitted considerably lower bids than projects located in Germany.

The presentation of the project discussed potential factors that may have led to this difference in bid level. It was pointed out that Danish sites on average have a higher natural potential for PV than German sites, which meant installations located in Denmark carried a significant cost advantage. Different site restrictions in both countries might have been another factor: whereas in Germany PV installations may not be built on agricultural land, no such restriction existed in Denmark, which lowered the costs. Moreover, it was remarked that corporate taxes and rules for depreciation were slightly more advantageous in Denmark than in Germany. Finally, there were

no alternative opportunities in Denmark to receive funding for PV installations apart from the German and Danish opened PV tenders, whereas Germany conducts frequent national auctions. This might have increased the pressure on Danish bidders.

Statistical Transfer Agreement between Luxemburg, Lithuania and Estonia

The experiences from the first statistical transfer agreements between Luxemburg and the Baltic states of Lithuania and Estonia are another noteworthy example of good practice shared by participants of Core Theme 1. Back in 2009, Luxemburg opted for a statistical transfer and started an early search for partners to achieve 2% of its RES goal via cooperation mechanisms. In both contracts, Luxemburg obtained a call option to take more quantities up to 2020. The agreements went beyond the requirements of a statistical transfer as they incorporate payments for the sole and specific purpose of further RES deployment. In the case of Luxemburg, a parliamentary ratification was necessary. The payment was made from state budget to state budget.

4 MAIN FINDINGS AND ACHIEVEMENTS

The experiences and knowledge which MS gained by implementing RED I provided useful inputs for its revision. In addition to the general exchange of best practices and to ensure the flow of information regarding current experiences in MS, this Core Theme aimed to inform policy makers in Member States and at EU level about possible further areas of alignment with regard to the design of support schemes and with regard to concise and agreed options to implement cooperation mechanisms, notably through the cross-border opening of tenders and joint tender schemes.

The input presentations from several Core Theme 1 participants provided a sound basis for discussion among MS, thus laying the ground for a joint learning process. The work in Core Theme 1 was supposed to help identify key issues that a number of MS have been struggling with and which will thus most likely merit a closer look and more thorough discussions in future CA-RES meetings.

One of the main questions throughout this third phase was how to deal with different support schemes among various MS. As far as support schemes for RES-E are concerned, the provisions of the revised RED II are more detailed than those of the RED I and provide for a sort of “Common Rulebook”. In general, support schemes for RES-E shall be designed in such a way as to maximise the integration of RES-E in the electricity market. Yet the discussions have shown that so far there is no single answer, but rather multiple approaches on how to deal with the different types of support schemes applicable across MS. One of them is cross-border cooperation and the opening of national support schemes for cross-border auctioning or the statistical transfer of RES-E production as covered in Chapter 3 of this report.

5 ABBREVIATIONS

Participating countries are referred to according to their two-letter country codes as defined by ISO 3166-1 alpha-2 standard (AT – Austria, BE – Belgium, etc.).

Abbreviation	Full Name
CA-RES	Concerted Action on the Renewable Energy Sources Directive
CEP	Clean Energy Package (“Clean Energy for all Europeans”)
DG Competition	Directorate-General for Competition
DG Energy	Directorate-General for Energy
EEAG	Guidelines on State Aid for Environmental Protection and Energy
EMD	Directive on Common Rules for the Internal Market for Electricity (EU) 2019/944
EMR	Regulation on the Internal Market for Electricity (EU) 2019/943
EU	European Union
MS	Member States
NECP	Integrated National Energy and Climate Plan
NREAP	National Renewable Energy Action Plan
RED I	Renewable Energy Directive 2009/28/EC
RED II	Renewable Energy Directive 2018/2001/EC
PtH	Power-to-heat
RES	Renewable Energy Sources
RES-E	Electricity from Renewable Energy Sources
TSO	Transmission System Operator

This is a public CA-RES3 report

For more information please send an email to:

Leonardo.Barreto-Gomez@energyagency.at,

Shruti.Athavale@energyagency.at,

Anna.Kassai@energyagency.at

The first phase of the Concerted Action to support the implementation of the RES Directive 2009/28/EC (CA-RES) was launched with the participation of the responsible authorities from 30 EU countries and supported by Intelligent Energy Europe (IEE) in July 2010 to provide a structured and confidential dialogue on how to address the cost-effective implementation of the RES Directive 2009/28/EC.

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For further information please visit **www.ca-res.eu**

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