



Final Executive Summary



Concerted Action on the Renewable Energy Sources Directive 2009/28/EC, Phase 3



This is a public CA-RES 3 report



Authors: Leonardo Barreto Gómez, Austrian Energy Agency
Shruti Athavale, Austrian Energy Agency
Anna Kassai, Austrian Energy Agency

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Welcome

Yet another Concerted Action on Renewable Energy Sources (CA-RES) has come to an end. It is the third phase and coincided with the adoption of a revised Renewable Sources Directive EC 2018/2001 (RED II), which entered into force in December 2018 as part of the Clean Energy Package. It also coincided with a new European Commission that assumed office on the 1 December 2019, having as one of its key priorities to become the first climate neutral continent by 2050.

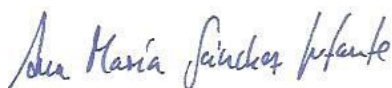
Interesting but also challenging times ahead for Member States. The CA-RES forum has proven so far, also in its third phase, to be a very useful platform for Member State's representatives. During the organized meetings and webinars they have been sharing information and learned from each other's experiences with the final aim of a flawless implementation of the RES directive. This third phase overlapped with the adoption of RED II with final transposition due by 30 June 2021.

Renewables are and will continue to be very high on the agenda of the European Commission. The Political Guidelines put forward by President Ursula von der Leyen have set the foundation of the European Green Deal, a very ambitious initiative to achieve climate neutrality by 2050 and to make the EU a world leader in clean technologies and circular economy.

The decarbonisation of the energy system will be critical for reaching our climate objectives. Energy production and use account for more than 75% of EU's greenhouse gas emissions. Therefore, speeding up clean energy production and the moderation of our energy demand will be essential to the success of long-term decarbonisation.

As far as renewables are concerned, the main piece of legislation is of course RED II. However, there are other important renewable-related provisions in other texts that are relevant for renewables, in particular the Governance Regulation, the Electricity Regulation and Electricity Directive, the Energy Efficiency Directive, or the Energy Performance of Buildings Directive. Regarding the two latter Directives, a dialogue was established between the Concerted Actions for the Energy Performance of Buildings Directive (CA EPBD) and the Energy Efficiency Directive (CA EED). The dialogue has resulted in cross-learning on several topics.

This third phase of CA-RES comes to an end but the CA-RES coordinator, the Austrian Energy Agency, together with the Member States are already starting to plan the next phase, the forth, and its core themes. We are very much looking forward to continuing giving support and learn from Member States inputs and experiences.



Ana Maria Sanchez Infante

Policy Officer, Unit C.1 – Renewables and CCS Policy

DG ENERY, European Commission

Introduction: The Concerted Action

The Renewable Energy Sources Directive 2009/28/EC

The Directive 2009/28/EC on the promotion of the use of energy from renewable sources (in short, the RES Directive), which entered into force in June 2009, established a common framework for the use of renewable energy within the European Union and a wide range of policy options on how to deliver the commitments. It is also one of the pillars of the EU climate and energy package, providing a legislative framework for the European Union's targets for greenhouse gas emission reductions.

The RES Directive sets binding targets for the Member States so that the EU as a whole will reach a 20% share of energy from renewable sources in gross final energy consumption by 2020 and a 10% share of renewable energy specifically in the transport sector. The National Renewable Energy Action Plans (NREAPs) set out the national targets for the share of renewable energy consumed in the electricity, heating and cooling, and transport sectors until 2020.

The recast RES directive EC 2018/2001 entered into force in December 2018 as part of the Clean Energy Package. The recast directive establishes a framework for renewables until 2030 by defining an EU binding target of at least 32% RES share in gross final energy consumption, with a clause for a possible upwards revision by 2023.

Objectives

Building on the results and achievements of the previous two phases of the CA-RES, the third phase focused on solving the remaining implementation challenges with a look to the future. The objectives of the CA-RES3 are directly linked to the RES Directive, so the CA-RES3 is fuelled by the active collaboration of the institutions in charge of the national transposition and implementation of the directive. By means of a structured and confidential dialogue, participants have the opportunity to learn from each other, build up national capacity and explore options for bilateral and multilateral cooperation. Areas for possible future convergence of policy approaches can be identified, and the European Commission can benefit from the valuable informal feedback on the implementation of the RES Directive. After already three years of knowledge and experience exchange in the framework of the CA-RES, numerous aspects of the implementation remain to be addressed.

The third phase of the Concerted Action on the Renewable Energy Sources Directive 2009/28/EC (CA-RES3) aimed to:

- Consolidate a structured sharing of information and experiences and promote good practice in activities required of participating countries for the implementation of the RES Directive.
- Facilitate cross learning at the EU level and provide support to an effective implementation of the RES Directive in the participating countries.
- Encourage dialogue between the participating countries on common approaches for the effective implementation of particular parts of the directive.
- Strengthening and expanding the network of experts enabling further cooperation beyond the duration of the CA-RES3.
- Identification of specific areas, where stronger coordination/common approaches would be beneficial.
- Provide further opportunities to explore possibilities for common approaches in specific areas of implementation of the RES Directive.

The structured dialogue and cooperation was realized through a series of seven CA-RES3 meetings and webinars focusing on key requirements of the RES Directive. Specifically, the work of the CA-RES3 was

structured around five Core Themes covering key requirements of the RES Directive as well as specific fields important for and related to the implementation of the directive. The topics considered in these Core Themes were driven by the needs, interests and priorities of the participating Member States as well as the participants of the CA-RES3.

The Core Themes were:

1. RES in Electricity (Art. 3, 4, 6-11, 16)
2. RES Heat (Art. 3, 13, 14, 16)
3. Guarantees of Origin & Disclosure (Art. 15)
4. Biomass Mobilisation and Sustainability (Art. 4, Art. 17(9))
5. RES in Transport (Art. 17-19)

The main Core Theme topics acted as guidance and subtopics were proposed by the Core Theme leaders and the participating countries, and agreed upon by the Management Team in cooperation with the Commission.

Calculation methodologies and administrative procedures were treated as cross-cutting issues over the different Core Themes. Whenever the need arose, related topics were discussed in the context of the relevant Core Theme.

Looking Back, Looking Forward

Building on the work achieved throughout the three phases of the Concerted Actions, participating experts were provided with an overview of policy instruments and measures promoting renewable energy sources (RES) based on ten years of knowledge and experience of the participating countries. It is a solid foundation to build on and continue the work toward the implementation of the recast RES Directive (2018/2001/EU), which also requires Member States to scale up their efforts to achieve the ambitious climate and energy goals of the European Union by 2030. Therefore, facilitating exchanges with other Concerted Actions, namely the Concerted Action on Energy Efficiency (CA EED) and the Concerted Action on the Energy Performance of Buildings (CA EPBD) will continue to be important.

Over the next couple of years and looking ahead to the complexities presented by the revised Renewable Energy Directive, it is expected that the implementation of the RES Directives will continue to be highly relevant for the EU Member States. If the officials in each Member State responsible for implementing the RES Directive continue to work as closely as they have done thus far in the CA-RES, there is no stopping the European Union from achieving its climate and energy goals, increasing the number of renewable energy businesses and continuing to be a global market leader in the energy sector. The Concerted Action will continue paving the way toward the long-term vision for a prosperous, modern, competitive and climate neutral economy by 2050.

CA-RES: An Overview

In order to support Member States with the implementation of the RES Directive, the Concerted Action on the RES Directive (CA-RES) was originally launched by the European Commission through the Intelligent Energy Europe (IEE) (later HORIZON 2020) program. The CA-RES is a confidential forum that enables a structured dialogue on the implementation of the RES Directive among the relevant national authorities. It allows these national authorities or their nominated representatives to enter into a dialogue in order to exchange experiences and knowledge on a variety of topics covered by the RES Directive. Participating countries can thereby profit from each other's experience, develop common approaches and coordinate solutions wherever this is beneficial.

The participants of the CA-RES include representatives from various institutions with the mandate to implement the directive. All three phases of the CA-RES spanning a decade have been coordinated by the team of the Austrian Energy Agency. Over the past ten years, the CA-RES has proven to be an invaluable, structured instrument for confidentially sharing information on challenges and solutions across the EU Member States as well as Norway and Iceland.

As in its first and second phases, the objectives of the third phase of the Concerted Action (CA-RES3) were directly linked to the transposition and implementation of the RES Directive. The CA-RES3 therefore requires the active collaboration of the institutions in charge of the national transposition and implementation of Directive 2009/28/EC.

The third phase of the Concerted Action, which started in 2016, was structured around five Core Themes on the topics of renewable electricity, renewable heat, guarantees of origin and disclosure, biomass mobilisation and sustainability, as well as renewable energy in transport. Whenever the need arose, related topics were discussed in joint sessions between two or more Core Themes.

The Concerted Action achieves its objectives through a series of plenary meetings. During each phase of the project, two plenary meetings (one in the spring and one in autumn) are organised, where participating countries choose relevant topics in response to the thematic needs and priorities of the participants, which change with the implementation progress of the RES Directive.

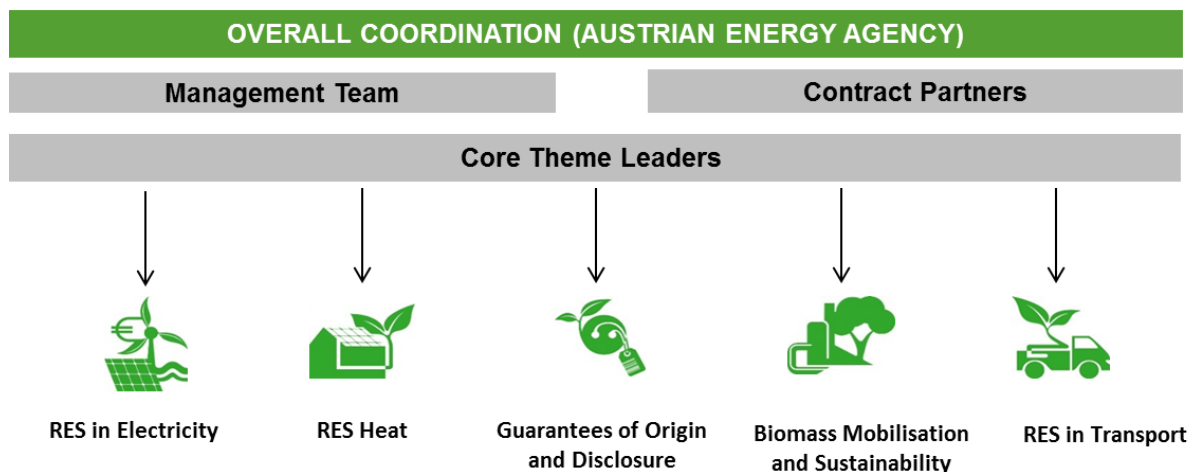
Each plenary meeting - with an attendance of approximately 180 experts at every meeting - provides a valuable forum for structured discussions and cross learning – among experts from EU Member States, Norway and Iceland. This exchange of experiences, approaches and best practice examples in the Core Themes for the CA-RES enhances the implementation of the RES Directive in the participating countries. Participants have continually expressed their satisfaction with the many achievements of the CA-RES. This includes the creation of a platform for discussion and a wide network of European experts, awareness raising on the pitfalls as well as the chances and opportunities that lie in joint approaches.

The CA-RES3 encompassed seven plenary meetings throughout its four year period and these were held as follows:

- PM1, Bratislava 22nd - 23th March 2017
- PM2, Zagreb 22nd - 23th November 2017
- PM3, Warsaw 25th - 26th April 2018
- PM4, Vienna 28th - 29th November 2018
- PM5, Copenhagen 22nd - 23th March 2019
- PM6, Brussels 27th - 28th November 2019
- PM7, virtual, 27th -28th October 2020

In addition, webinar sessions were held in May 2020 on key topics related to the upcoming Energy System Integration Strategy of the European Commission, renewable cooling, the role of bioenergy in NECPs, sustainability governance for biomass and biofuels and standards for voluntary certification schemes as well as updates on transport targets and implementation of the RES Directive.

Knowledge and experience exchange within the Concerted Action on the Renewable Energy Sources Directive is structured around five thematic working groups, so-called Core Themes:



A thematic framework was developed for each Core Theme at the beginning of the third phase of the CA-RES, which was coordinated between the Core Theme leaders - who have extensive expertise and knowledge in their respective Core Themes - , the Coordination Team, the European Commission (DG ENER) and EASME. In addition, representatives of each of the participating countries are always invited to provide their input and offer further suggestions to the topics discussed in the Core Themes.

The CA-RES – What It Covers

The CA-RES covers the EU renewable energy policy landscape, while also touching upon interlinkages between related regulations including the Energy Efficiency Directive, the Governance Regulation and the Directive on the Energy Performance of Buildings.

Core Theme 1: RES Electricity (Art. 3, 4, 6-11, 16)

Core Theme 1 on RES Electricity (RES-E) combined the topics of support schemes for RES electricity, cooperation mechanisms and electricity networks during the third phase of CA-RES. Building on the work in the previous phases, participating experts discussed a variety of crucial issues throughout the course of seven Plenary Meetings, such as RES-E support scheme design, cooperation mechanisms and system integration of RES electricity. Using the successfully established elements for coordination of the second phase of the CA-RES, efforts were continued to identify, present and exchange experience of best practices on support schemes for RES-E, in particular with regards to design options and experience with tendering schemes, including technology-neutral auctions and cross-border auctions and also on how to introduce these solutions in a cost efficient manner. In addition, the experience of MS with the Guidelines on State Aid for Environmental Protection and Energy 2014-2020 (EEAG) with regard to renewable electricity was examined. These sessions focused on the role played by the EEAG on the legal design of national RES support schemes and interactions between Art. 4 of the recast RES directive and the EEAG. Participants had the opportunity to share their experiences and provide input for the revision of the guidelines in 2022.

Participants further explored the option of the implementation of cooperation mechanism and ways how to incentives voluntary cooperation. RES system integration, including the contribution of sector coupling, as well as various designs for support systems formed two main areas of the Core Theme, while topics such as system responsibilities, priority dispatch and curtailment rules were also discussed at length. Furthermore, CT1 explored aspects of self-consumption and methods to enhance citizen participation in the energy transition. In addition, a joint session with Core Theme 2 titled ‘Self-Consumption Combined with Heat Pumps and Storage’ examined options for flexibility and system integration of renewables. Various types of community-driven projects and initiatives have emerged with the aim of empowering energy consumers. The Clean Energy Package introduced the concepts of citizen energy communities (CEC) (under the Internal Electricity Market Directive) and renewable energy communities (REC) (under the recast RES directive) into EU legislation for the first time. Participating experts discussed experiences with the new provisions, while shedding light on possible approaches to the implementation of the provisions on energy communities.

During the 7th plenary meeting, participants discussed the challenges and solutions for setting up contact points that should guide applications through and facilitate the entire administrative process for authorisation procedures, according to article 16 of the RES directive. This session facilitated a best practice exchange and demonstrated how Member States put Article 16 paragraph 1 RED II into practice. Furthermore, it provided an overview of challenges Member States need to tackle in order to implement the provision. Some Member States have introduced simplified procedures for interventions on existing and new RES plants and also for the connected storage systems, based on the proportionality principle, and are striving for a greater uniformity in order to speed up and facilitate the authorisation procedures.

Representatives of Member States also shared their experiences on issues faced when trying to achieve local acceptance and on possible solutions how to overcome them. Raising public acceptance may be achieved, among others, by granting financial benefits for the local level. In this regard, a broad range of potential actions is possible. Project developers may e.g. support local projects or provide financial incentive to municipalities in whose territory the plant is located. Additional efforts are

required to engage with local communities and communicate project details and benefits to communities in an open and transparent manner.

Core Theme 2: RES Heat (Art. 3, 13, 14, 16)

Core Theme 2 covered on site generation of heating or cooling as well as renewable district heating and cooling in buildings, while also discussing policies to address financial barriers, non-financial barriers and regulation. With regard to Article 3 of the RES Directive, support schemes for RES, this Core Theme only dealt with support schemes for RES heating and cooling.

Over the course of the project, sessions were dedicated to sharing experiences on information, awareness raising and advice campaigns for consumers. Smart financing for renewable heating and cooling and self-production and consumption of renewable energy in residential buildings were also topics of discussion. Challenges and solutions for recognising the contribution of cooling towards the achievement of the RES Directive targets were also explored. Facilitating the deployment of renewable energy sources in the district heating sector was additionally addressed. The integration of RES district heating and cooling (DHC) into the heat planning of regions and municipalities is the key to design an optimal heating and cooling supply that works for local conditions. The Core Theme also discussed renewable energy communities, which can be an effective tool to increase public acceptance of new projects, mobilise private capital for the energy transition and increase flexibility in the market. Renewable self-consumers and jointly acting self-consumers were also addressed. Moreover, the Energy Systems Integration Strategy of the Commission was discussed.

Interlinkages with the Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD) in the area of heating and cooling, e.g. synergies between measures and target achievement and coordinated implementation, are growing in importance and have been examined by this Core Theme in cooperation with the other Concerted Actions (CA EED and the CA EPBD).

During the 7th plenary meeting, participants discussed, among others, the district approach to implementing policies to support the uptake of Renewable Energy Communities. A district scale RES approach allows for the optimisation of a wider area than an individual building approach. Therefore, members of the CA EPBD Core Themes on Zero Energy Buildings, Building Codes and Renovation Strategies of the CA EPBD also participated in the session in order to provide a holistic zero energy buildings/district viewpoint into the assessment of the contribution of renewable energies. In addition, the key principles of the Renovation Wave and the EU funding instruments allocated for the new strategy were presented.

Core Theme 3: Guarantees of Origin and Disclosure (Art. 15)

During the previous phases, participating countries focused on working towards a full harmonisation of Guarantees of Origin (GOs) and Disclosure. The third phase provided the Core Theme participants with the opportunity to discuss remaining challenges regarding the implementation of Article 15. Among others, participants discussed the status of GOs and Disclosure implementation, GOs for renewable electricity, the risk of double counting as well as double selling, current financing methods, cross-sectoral usage (e.g. transport), and the consumer perspective.

CT3 participants examined ways of improving energy disclosure nationally by working together and identified opportunities for better coordination through existing frameworks like the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) or the Association of Issuing Bodies (AIB).

Advantages and disadvantages of labelling electricity as well as diverging national practices were also assessed during the discussions. Energy labels are becoming more relevant, therefore a common definition could help to provide more clarity and certainty around their usage. Participants discussed how energy labels, possibly based on GOs or on energy disclosure, can enhance energy markets. Plenary sessions also focused on an exchange of experiences in order to identify both similarities and differences to tackle the issue of non-electricity GOs, while trying to determine potential pitfalls when designing an integrated system of GOs for energy. Furthermore, participants widened their perspective on consumer information, i.e. reaching out to consumers with information on how renewable their energy consumption is, in a better and more coherent way and how to make information as to whether energy is renewable available at the point of consumption in a easy-to-understand manner.

During the 7th plenary meeting, participants discussed standardisation of GOs. According to RED II, there will need to be an updated official EN standard for GOs. Work on this issue is being done through national standardisation bodies. MS implementation of GOs has to be brought in line with the EN-standard (see Article 19 of the RES Directive 2018/2001). In addition, the need to develop a set of generic rules that take into account energy losses when handling GOs (e.g. withdrawing and (re)issuing when converting biogas to heat) and calculating residual mix (e.g. lump reduction for heat losses in H/C network) was debated.

Core Theme 4: Biomass Mobilisation and Sustainability (Art. 4, 17(9))

The Core Theme tackling biomass issues in this phase focused on specific topics requiring a better exchange of information or experience between participating countries to help achieve a more efficient and increased use, production and trade of sustainable bioenergy sources. Therefore, discussions around remaining barriers and challenges, and good practices and implementation of policies were a crucial part of the plenary sessions in the third phase of the CA-RES.

Participants analysed methods to improve competitiveness of their priority bioenergy sectors, biomass waste mobilization strategies related to the circular economy, as well as ways to improve the mobilisation of domestic biomass. CT4 participants explored the concept of biomass exchange platforms and whether its development could lead to more efficient local biomass markets and biomass trade inside the EU.

Sustainability of the sourcing of biomass is a requirement for the current acceptance of bioenergy and as such, participants also addressed concerns related to this topic. Specifically, new criteria applied to biomass fuels produced from agricultural and forest feedstocks (including LULUCF criteria), as well as criteria on greenhouse gas emissions saving from the use of biomass fuels were discussed. Moreover, methodologies and tools to demonstrate compliance with the sustainability criteria, the compatibility of current (national/voluntary) sustainability schemes for solid, liquid and gaseous biomass and possibilities for harmonised sustainability verification systems and the impacts of new legislation on existing bioenergy installations were addressed.

Reporting obligations on biomass supply are a crucial part of the Renewable Energy Directive and the Governance Regulation. Member States recognized the need for improving the reliability and quality of these reports by an exchange of methods to report biomass data in a harmonised way and with statistically reliable data. This Core Theme also discussed sustainability criteria for agricultural and forest biomass, in particular the Commission guidance document for the implementation of new sustainability criteria for, including methodologies and tools to assess and demonstrate compliance with the sustainability criteria.

A CT4 and CT5 joint session consequently explored different aspects of the use of biomethane in the transport sector, including cross-sectoral and cross-border challenges that arise in particular from the use of gas grids for the transport of the biomethane.

During the 7th plenary meeting, participants were provided with an overview of the planned and required key actions toward 2030 in the context of the Energy Systems Integration Strategy. The Biodiversity Strategy recognizes that sustainable bioenergy is a priority solution in climate change mitigation, along with wind and solar. The implementation of the RED II sustainability criteria is key to achieve mitigation targets. In addition to the EU Forest Strategy, the Commission will develop guidelines on closer-to-nature forestry practices.

Core Theme 5: RES in Transport (Art. 17-19)

In the Core Theme 5, issues for implementing and achieving the transport goals within the Renewable Energy Directive 2009/28/EC were addressed taking into account that, among others, interactions between the RES Directive and the Fuel Quality Directive (FQD) have a significant impact on the RES in transport. CT5 continued to focus on the implementation of the Directive 2015/17 (Indirect Land Use Changes, ILUC) and the RES Directive 10% target.

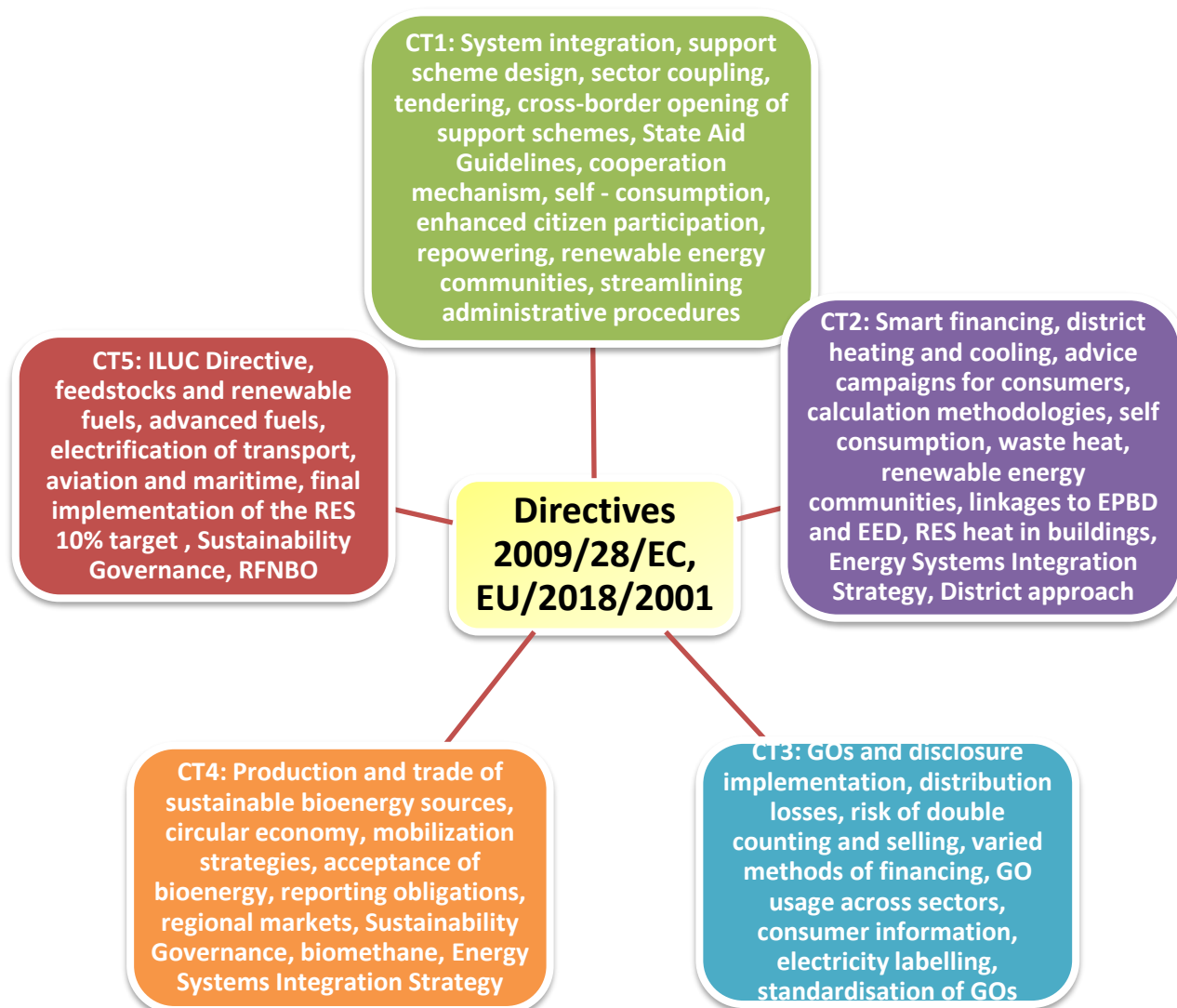
The CT5 sessions included a variety of topics related to the subject of 2020 implementation of the RES and the ILUC Directive. Participants discussed the specific challenges that Member States encountered and as well as the resulting solutions that were developed to implement the Directives. Alternative perspectives on addressing Indirect Land Use Changes to address indirect risks were also elaborated on. CT5 participants discussed the progress Member States have made in reaching the 2020 target for 10% RES in transport as well as feedstocks and renewable fuels currently in use in the Member States as well as main policies.

Sessions were dedicated to advanced biofuels in particular to feedstock availability and updates on technology developments and the promotion of Annex IX Part A (feedstocks) to encourage the development of such fuels. CT5 sessions also explored whether and how mechanisms to promote biofuels can effectively support the electrification of transport. In addition, sessions also discussed methodological options and challenges to calculate the greenhouse gas emissions of renewable fuels of non-biological origin (RFNBO) and recycled carbon fuels, which are still in an early stage of development. Longer-term strategic considerations for biofuels policy beyond 2030 were also part of the discussions, since they shape the investment climate.

CT5 further focused on updated sustainability requirements for transport fuels under the recast directive and the requirement for Member States to monitor certifying bodies. Sessions shed light into some of the implications and challenges that voluntary schemes face as part of the transition to the new provisions as well as proposals to address fraud challenges.

During the 7th plenary meeting, RED II implementation across EU Member States, progress towards existing targets were looked at and a policy update from the European Commission (DG ENER) was given. Results showed that in many participating countries share of renewable fuels in transport is increasing and most countries are confident they will meet the 2020 target. Participating countries also discussed COVID-19 impact on fuel demand and the renewable fuel and transport sector.

Key Topics and Issues addressed in the Core Themes



Our Impact Success Stories

Achievements of the CA-RES

seven successful CA-RES3 Plenary Meetings (Bratislava, Zagreb, Warsaw, Vienna, Copenhagen, Brussels and a virtual meeting due to the COVID-19 pandemic)

Five so-called “**Task Forces**” were formed in order to deal with certain topics that required a more in-depth analysis:

1. **Task Force on Cooperation Mechanisms (CT1):** This Task Force analysed drivers and barriers to the use of **cooperation mechanisms** under the RES Directive and provide an outlook on the post 2020 framework. The main objective of the Task Force was to further analyse and figure out specific critical issues linked to cooperation initiatives.
2. **Task Force on Renewable Heat (CT2):** The discussions within this Task Force focused on addressing the key subject of the role of solar PV in producing heat and cool with respect to the concept of prosumers.
3. **Task Force on Self-Consumption (CT1 + CT2):** This Task Force was established as an extension of the already existing CT2 task force on Renewable Heat and became an independent Task Force dedicated to the issue of self-consumption. This Task Force extended the scope to the effects of self-consumption combined with heat pumps and storage on the overall electricity system, in particular flexibility potential and possible system integration benefits.
4. **Task Force on Labelling (CT3):** The Task Force carried out research in order to provide / reach a common understanding of energy labels. In addition, the Task Force created an inventory on the types of labels that exist in Europe (quality labels, commercial labels, commercial brands and independent ranking), while adding guidance as to how to improve the information provided in each individual label.
5. **Task Force on Biomass Reporting Issues (CT4):** This Task Force explored biomass reporting obligations in various countries and supported countries with the reporting on biomass availability as required by the RED through an exchange of experiences. It also aimed to provide recommendations to the European Commission and EUROSTAT for future reporting on sustainable biomass as a feedstock for energy towards a bio-based economy.

Study Visits

District Heating and Cooling Facility Vienna Spittelau

The first study tour of the 3rd phase of the CA-RES3 took place on 27th November 2018 in Vienna. Participants were given the chance to visit the District Heating and Cooling Facility Vienna Spittelau of Vienna’s biggest energy supplier, namely Vienna Energy (“Wien Energie”), to take a peek into a waste incineration plant, and to learn more about environmental and climate protection measures. The Spittelau waste incineration plant, that currently supplies electricity to half of all homes in Vienna, was redesigned and given its present structure by eco-architect Friedensreich Hundertwasser following a major fire in 1989. On a tour of the plant, visitors got an insight into Vienna's extensive waste, recycling and disposal system, as well as the environmentally-friendly generation of thermal heat and hot water.

Amager Ressource Center (ARC) and EnergyLab Nordhavn

In the framework of the second study tour, which took place in Copenhagen on the 21st of May 2019, participants were given an overview of Copenhagen's Sustainable Climate Plan 2025. Furthermore, representatives presented solutions and working methods of the Amager Ressource Center (ARC) and EnergyLab Nordhavn with the guidance of the former Major of Copenhagen, Mr. Bo Asmus Kjeldgaard. Amager Ressource Center maximises waste management and provides recycled materials, electricity and district heating back to the residents and the city of Copenhagen. ARC receives and processes waste from approximately 550,000 residents and 45,000 businesses and supplies electricity and district heating to approximately 150,000 households. Participants also got the chance to visit the construction site of Amager Bakke, a multi-functional, social and cultural activity center on top of the waste-to-energy plant, emphasising sustainability in all its forms.

Participants of the study tour also visited the EnergyLab Nordhavn, a large public private partnership aimed at spearheading the development of sustainable and cost-efficient integrated energy solutions for Nordhavn and the city at large, through real life demonstrations in the area.

Biowanze SA Bioethanol Plant

The third study tour took place near Brussels on 26th November 2019 at the Biowanze SA Bioethanol Plant operated by CropEnergies, the leading European manufacturer of sustainably produced ethanol. With its highly efficient production facilities, the bioethanol plant reduces CO₂ emissions by more than 70% on average across the whole value-added chain compared to fossil fuel. In addition to fuel alcohol, CropEnergies also produces neutral alcohol which is used in the beverage, cosmetics, and pharmaceutical industry or for technical applications in other sectors. At the same time, CropEnergies is an important producer of food and animal feed products. Through its advanced technology, it contributes to ensure sustainable mobility from renewable sources today and in the future through its main product ethanol.

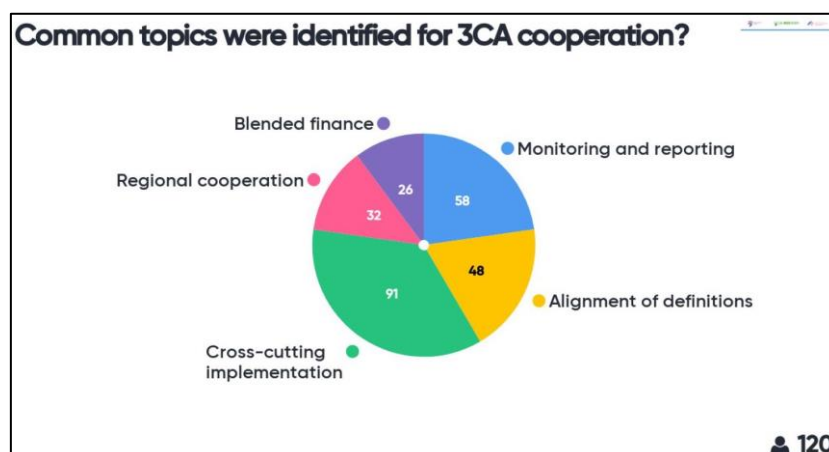
Joint Workshop with the CA EED and the CA EPBD

Not only has the CA-RES helped create a network of experts and filter relevant information to participants in order to prioritise approaches, but it has also helped establish a dialogue with the other two Concerted Actions, namely the Concerted Actions for the Energy Performance of Buildings Directive (CA EPBD) and for the Energy Efficiency Directive (CA EED). The dialogue has resulted in cross-learning on several topics.

For instance, at the in-depth workshop of CA EPBD on the topic of Nearly Zero Energy Buildings (NZEB) in hospitals and building renovation strategies, which was held from 23rd – 24th May 2018 in Frankfurt, Core Theme 2 provided valuable input from a CA-RES perspective.

This cooperation of the three Concerted Actions culminated in a joint two-day workshop from 30th – 31th of January 2020 in Barcelona titled '**Achieving 2030 Targets through Synergies between Energy Efficiency and Renewable Energy**' with over 200 participants. The joint workshop brought together policy makers from different focus areas and discussed cross-cutting issues as well as identified good practices and synergies at the national level between the three Concerted Actions and the respective Directives. It also contributed to the better understanding of the topic(s) across the different policy areas. Participant surveys were used to identify topics for future cooperation, such as cross-cutting implementation and monitoring and reporting, which were voted the highest, followed by alignment of definitions, regional cooperation, blended finance.

Figure 1: Identified Topics for Future 3CA Cooperation



Cooperation with the Consultation Forum for Sustainable Energy in the Defence and Security Sector Phase II (CF-SEDSS II)

Throughout the course of CA-RES3, the CA-RES Coordinator attended the 1st, 2nd and 3rd Conference of the Consultation Forum for Sustainable Energy in the Defence and Security Sector Phase II (CF-SEDSS II) that were held on 20th - 21st March 2018 in Tallinn, on 16th – 17th October 2018 in Warsaw, and 26th - 27th February 2019 in Nicosia, in order to support the Working Group on RES and explore potential links to the CF-SEDSS II. The Working Group on RES of the CF-SEDSS focuses on the implementation of renewable energy solutions by EU Ministries of Defence (MoD) addressing various aspects such as suitability of technology solutions, procurement rules, financing mechanisms and required skills as well as the identification of potential joint projects, while considering defence capability and cost efficacy as key drivers.

To strengthen civilian-military interactions through the relationship between CF-SEDSS II and CA-RES3, from 13th – 14th March 2019, the first ad hoc meeting of the EDA Renewable Energy Sources and Technologies Working Group was hosted in Vienna by the Austrian Energy Agency, as Coordinator of the Concerted Action on Renewable Energy Sources. Ministry of Defense (MoD) representatives from Austria, Belgium, France, Ireland, and Slovenia participated in the meeting. The purpose of the meeting was to further develop the deliverables on renewable energy as part of the CF-SEDSS II, including specific project proposals on hydrogen fuel cells, self-sufficient military bases, technology feasibility assessments, energy performance contracting, and energy storage.

Presentation of H2020/IEE and DG ENER Project Results at the CA-RES Plenary Meetings

- At the PM1 in Bratislava in the framework of the CT4 (biomass mobilization and sustainability) sessions, results from the IEE project **Biomass Policies** (IEE/12/835) were presented. In CT1 (RES in Electricity) sessions, the study “mainstreaming RES – flexibility roadmap” commissioned by DG ENER was presented and discussed with participants.
- At the PM2 in CT4 (Biomass mobilization and sustainability) sessions, results from the H2020 project **Bioenergy4business** (646495) were presented. Among others, successful Bulgarian initiatives and calculation tools for project specific parameters that aim to facilitate the usage of bioenergy for heating in business sectors and district heating.
- At the PM4 in Vienna, policy implications from case studies of the project H2020 project **progRESSsHEAT** (646573) were presented at the CT2 session.

- At the PM5 in Copenhagen, in CT1 (RES in Electricity) sessions, the study “The European Union Renewables Financing Mechanism” commissioned by DG ENER was presented and discussed with participants.
- At the PM6 in Brussels in the CT1 sessions, the H2020 **AURES II** project (817619) presented on Cross-border auctioning in the EU: The new EU financing mechanisms and a discussion of AURES II case studies for implementing cross-border auctions. Furthermore, the results of the H2020 project **EuroPACE** (785057), The Future of Home Renovation were presented at a CT2 session. In the framework of the CT3 session activities of the H2020 project **REGATRACE** (**RE**newable **GA**s **TRA**de **C**entre in **E**urope) (857796) were presented, which aims to create an efficient trade system based on the issuing and trading of Guarantees of Origin (GO) for biomethane and renewable gases. The **REDIIBIO** Bioenergy Europe, a project of DG ENER on implementation of the new REDII sustainability criteria by Member States, was presented during the CT4 sessions.
- At the PM7 the legislative basis for the technical study (ENER/C1/2018-493) and the preparation of the renewable cooling calculation methodology. The accounting methodology is needed to calculate the overall RES share under Article 7 (1) (b) and contribute to the calculation of indicative targets under Article 23 (1) and Article 24 (4) (a). Based on the methodology, cooling from individual cooling and district cooling will be calculated.

Messages from the Participants

“The experiences of other Member States as well as differences in understanding and/or approach are regularly taken into account when developing the national policy. The exchanges can also be used to test and further develop your own approach to a specific question. For example, we used the CA-RES plenary to raise the need for harmonising rules to calculate greenhouse gas emissions. These discussions resulted in an agreement of a common approach and next steps, which in turn also informed the national policy on the matter.” - CA-RES3 participant from the UK

“The joint German Danish tender on solar PV has used contacts on administrative level from the CA-RES network.” - CA-RES3 participant from DK

“For Italy in particular, in the field of guarantees of origin (GO), the questionnaire which aimed at doing a complete state of art of GO implementation rules in individuals countries was suitable for the purpose of mutual recognition of these certificates as issued from other Member States.” - CA-RES3 participant from IT

“Sharing of good practices (and mistakes) from other MS is a very useful tool for the implementation. The network of contacts you get to build is extremely useful when doubts arise.” - CA-RES3 participant from ES

“The draft national integrated energy and climate plan, in its part related to heating and cooling, is undoubtedly influenced by the experience gained through the CA-RES and the examples given by member states such as Denmark, regarding district heating and cooling.” - CA-RES3 participant from ES

“The Concerted Action is an essential accompanying instrument and should be funded further. Having such a forum allows participants to discuss timing of certain legal provisions and to address issues that a number of MS are having.” - CA-RES3 participant from the NL

“Direct contact with other Member States and other renewable energy experts is the best part of the CARES. CARES also provides us with quick access to the most recent information across Europe in very specific domains. It is a very reliable source of information.” - CA-RES3 participant from EE

“The implementation of the RES Directive would have definitely been less successful without the CARES, at least in Iceland. The network of experts is very useful especially when you need to reach out to other MS to solve specific issues.” - CA-RES3 participant from IS

Policy Impact of a Decade of CA-RES

CA-RES I

“The CA-RES plenary meetings are very important to see how other participating countries address the same issues which are at stake in Poland, so that when reshaping its support scheme, Poland will refer to the knowledge gained from other participating countries.” - CA-RES participant from PL

“Discussions in WG 1 on the methodologies for evaluating support schemes and on how to calculate the levelized costs of electricity from renewable energy sources have been incorporated into the deliberations in the Greek Ministry for Environment, Energy and Climate Change.” - CA-RES participant from GR

“Cyprus did not have a certification scheme for installers before, so the exchange of views and best practices helped a lot in the development of this scheme. Especially other countries’ experiences

regarding minimum requirements and training, such as the training materials for the training of installers of RES technologies, were very useful.” - CA-RES participant from CY

“We had the set-up of a GO-system in place, but we did not have the connection of the GOs and the disclosure of the mix. Thus it was very helpful to learn about the experience of other countries, especially because Cyprus is a candidate country to participate in the AIB.” - CA-RES participant from CY

CA-RES II

“The knowledge and discussions from the CT sessions have provided valuable information on the experiences with renewable energy policies in other countries and this has helped to inform the national political processes and policy development. This can especially be seen regarding the discussion of providing support for renewable energy production in hours with negative electricity prices and the implementation of national sustainability criteria for solid biomass in different MS.” - CA-RES II participant from DK

“Through the experience exchange in parallel sessions of CA-RES II, we were able to get an overview of the progress in other Member States, while seeking methods to reach the national RES targets. It enabled us to identify potential cooperation partners and also encouraged us to draft the rules concerning the procedure of statistical transfers. Discussions during CT1 contributed to a better understanding of the newly published Guidelines on Environmental and Energy Aid for 2014-2020, which is particularly important for timely revision and optimization of national support schemes.” - CA-RES II participant from LT

“CA-RES II had a positive effect in encouraging cooperation with neighbouring countries considering technical and commercial aspects of RES integration. In January 2014, Slovenia, Croatia and Bosnia and Herzegovina signed an agreement on joint power reserves for the purpose of frequency regulation in a regulatory-control block. Cooperation in the block is very important because it will reduce the cost of ancillary services (which include the tertiary control reserve) that typically causes an increased share of intermittent renewable energy sources in a power system.” - CA-RES II participant from HR

CA-RES3

“At the time, Germany was in the process of its final drafting of legislation on GO. Following a session on the topic, they realised at least one other country (Belgium) was also restricting the cancellation of GOs to electricity suppliers, which was considered to be more consistent as the disclosure obligation does not rely on other actors. That change has since become law in Germany.” - CA-RES3 participant from the SE

“After the first time NECP were submitted, discussions among policy officers brought everyone around the table to realise there was not enough biomass currently available for trading in the EU to fulfil the total MS demands (in essence, everyone had simply used biomass as the adjustment variable of its own plan: once all other energy sources have been planned, the remaining RES target was to be attained by biomass). The case of France struck me: the French representative had explained during that same meeting to have no special plans around woody biomass (simply an update of existing policies), but then came the above-mentioned discussions. Six months later France announced new policy on using wood locally. A year later, wood buyers from Belgium were complaining that French wood was no longer available as it was kept for new local projects, and they even had to import from the Baltics.” - CA-RES3 participant from the SE

Statistics (based on the evaluation questionnaire of 6 meetings)

- **99%** of the participants think that CA-RES is a valuable platform for discussion and exchange of experience between public authorities and relevant actors responsible for the implementation of the RES directive.
- According to **98%** CA-RES is a point of departure for further discussion/cooperation among the experts.
- **98%** of the participants believe that CA-RES will have a positive policy impact on the work in the respective countries.

Outlook

The Concerted Action has proven a valuable platform for the implementation of the renewable energy directive. Looking ahead, the Concerted Action will continue focusing on key issues of implementation of the directive 2018/2001/EU but it will also continue broadening its scope towards interlinkages with other renewable relevant pieces of legislation and strategies such as the Governance Regulation, the electricity regulation and Internal Electricity Market Directive, the EED and EPBD and the Energy Systems Integration Strategy, focusing on key, cross-cutting topics.

An integrated, energy systems approach must be taken to planning and reporting to take into account the interlinked nature of objectives and measures. There is, for instance, a key connection between the targets for efficiency and renewables, and the same measure can contribute to GHG, RES and EE targets. The implementation of the Governance Regulation and the directives requires breaking silos across policies and sectors, across government departments, with stakeholders and the public, and cross-border. Today, the European Union faces many challenges and strengthening cooperation is key to the achievement of the objectives in a cost-optimal, environmentally sustainable and socially just manner. In the future the Concerted Action on the Renewables Directive will continue its efforts as a collaborative dialogue platform contributing to the achievement of the 2030 climate and energy targets of the European Union.

Core Theme Leaders

Core Themes and Core Theme Leaders and technical assistants of CA-RES3 are:

| Abbreviation | Core Theme | Core Theme Leaders |
|--------------|---|--|
| CT1 | RES in Electricity | André Poschmann (BMW, DE) Robert Lorentz (BMW, DE) (until August 2018) Justus Riedlinger (GIZ, DE) (until May 2018) Beatrix Massig (BMW, DE) (until May 2019) Katrin Heer (BMW, DE) (from September 2018 until March 2019) Lara Paetsch (BMW, DE) (from May 2019) Anja Nitschke-Hoffmann (BMW, DE) (until April 2020) Anne Kimmel (BMW, DE) (from April 2020) |
| CT2 | RES Heat | Emilie Carmichael (EST, UK) Veronique Nitsch (EST, UK) (until January 2019) Sophie Shnapp (EST, UK) (from January 2019) |
| CT3 | Guarantees of Origin and Disclosure | Michael Lenzen (Communicating Sustainability, NL) Pierre-Yves Cornelis (CwAPE, BE) |
| CT4 | Biomass Mobilisation and Sustainability | Olivier Squilbin (GreenSkill SC, BE) Timo Gerlagh (RVO, NL) |
| CT5 | RES in Transport | Aaron Berry (DfT, UK) (until November 2019) Verena Leckebusch (DfT, UK) Cordelia Hamed (DfT, UK) (from January 2019 until October 2019) Chris Clarke (DfT, UK) (from October 2019 until January 2020) Emma Lamb (DfT, UK) (from February 2020) |

CA-RES 3 Coordination Team

| Coordination Team | Institution |
|--|-------------|
| Leonardo Barreto Gómez | AEA, AT |
| Shruti Athavale | |
| Anna Kassai | |
| Cornelia Schenk (until April 2017) | |
| Rudolf Köstler (from May 2017) | |
| Denise Eck (from May 2018) | |
| Carmen Marksteiner (until December 2017) | |

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 | Meaning |
|-----------------|--|
| AEA | Austrian Energy Agency |
| AIB | Association of Issuing Bodies |
| Art. | Article |
| CA EED | Concerted Action on the Energy Efficiency Directive (2012/27/EU) |
| CA EPBD | Concerted Action on the Energy Performance of Buildings Directive (2010/31/EC) |
| CA-RES | Concerted Action on the Renewable Energy Sources Directive (2009/28/EC) |
| CEC | Citizen Energy Communities |
| CEN | European Committee for Standardization |
| CENELEC | European Committee for Electrotechnical Standardization |
| CF-SEDSS | Consultation Forum for Sustainable Energy in the Defence and Security Sector |
| CT | Core Theme |
| DHC | District Heating and Cooling |
| EC | European Commission |
| EEAG | Guidelines on State aid for environmental protection and energy 2014-2020 |
| EU | European Union |
| FQD | Fuel Quality Directive |
| GHG | Greenhouse Gases |
| GO | Guarantees of Origin |
| GOV | Governance Regulation 2018/1999/EU |
| H2020 | Horizon 2020 Programme |
| IEE | Intelligent Energy Europe |
| ILUC | Indirect Land Use Change |
| LULUCF | Land Use, Land Use Change and Forestry |
| MoD | Ministry of Defense |

| Abbreviation | Meaning |
|--------------|--|
| MS | Member States |
| NECP | National Energy and Climate Plan |
| NREAP | National Renewable Energy Action Plan |
| REC | Renewable Energy Communities |
| RES | Renewable Energy Sources |
| RFNBO | Renewable Fuels of Non-Biological Origin |

This is a public CA-RES 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.

This publication captures the highlights of the third phase of the Concerted Action, which started in November 2016, and is supported by Horizon 2020 (H2020) funding programme. The CA-RES is coordinated by the Austrian Energy Agency (AEA).

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

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