

**CEER**

Council of European  
Energy Regulators



# CEER 2022-2025 Strategy Empowering Consumers for the Energy Transition





# CEER 2022-2025 Strategy Empowering Consumers for the Energy Transition

This document (C21-SSG-06-05) presents the Council of European Energy Regulator's (CEER) strategy "Empowering Consumers for the Energy Transition". The basis of the Strategy is that European energy regulators, **with a view to promoting the energy transition and contributing to a carbon-neutral society and economy, are committed to "empowering consumers for the energy transition", by:**

- **Enabling energy system integration:** integrating renewables and incentivising innovation;
- **Placing consumers at the centre of energy markets with consumer-centric dynamic regulation,** empowering consumers to actively contribute to and benefit from a flexible energy system; and
- **Ensuring open, well-functioning and resilient markets nationally and in Europe:** delivering flexibility and new business models.

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# Overview and presentation of the Energy Transition Strategy

This document presents CEER's strategy for the years 2022-2025. It is useful to begin with a brief look at the previous CEER strategy that is still in effect at the time of this document's publication.

In 2019, CEER launched its [3D Strategy](#) which focused on three pillars:

- **DIGITALISATION IN THE CONSUMER INTEREST**
- **DECARBONISATION AT LEAST COST and**
- **DYNAMIC REGULATION.**

This CEER 3D Strategy had a three-year timeline (from 2019 to 2021) for implementation through the annual work programme. CEER focused on Digitalisation in the consumer interest in 2019, on Decarbonisation at least cost in 2020, and in 2021 on Dynamic Regulation. As these three pillars are still relevant, they will be the starting point for this next strategy, making the two strategies closely interlinked.

The strategy following the 3D Strategy, for 2022 to 2025, has been designed in critical times, reflecting the experience of the recent pandemic with its massive changes in all areas of life. It also recognises the ongoing developments fundamentally impacting the energy system, namely climate change and its repercussions. European energy regulators realise the resulting

challenges of such development for regulation and want to be part of the solution.

**Therefore, with a view to promoting the energy transition and contributing to a carbon-neutral society and economy, energy regulators are committed to “empowering consumers for the energy transition”, by:**

- **Enabling energy system integration:** integrating renewables and incentivising innovation;
- **Placing consumers at the centre of energy markets with consumer-centric dynamic regulation,** empowering consumers to actively contribute to and benefit from a flexible energy system; and
- **Ensuring open, well-functioning and resilient markets nationally and in Europe:** delivering flexibility and new business models.

The three listed bullet points are the three **regulatory dimensions** of the Strategy (see further on page 6).



CEER decided to run this **Energy Transition Strategy** over a period of four years, from **2022 to 2025**. The year 2025 is justified for three reasons:

- By 2025, the implementation of the legal acts currently under review should be finalised (i.e. the trans-European energy infrastructure (TEN-E) Regulation, the Hydrogen and Gas Market Decarbonisation Package, the Renewable Energy Directive II and the Energy Efficiency Directive);
- By 31 December 2025, the European Commission shall review the implementation of the Electricity Directive (EU) 2019/944 and Regulation (EU) 2019/943, so that regulators should until then contribute to the implementation of the Clean Energy Package (CEP) as much as possible; and
- The ACER/CEER [Bridge Beyond 2025 Conclusions Paper](#), which sets out views on priorities for the gas sector (not considered in the CEP), also runs until to 2025.

CEER's work programmes for the period 2022-2025 will prioritise activities that contribute to implementing this strategy by focusing on six core areas and to achieving our strategic aims more generally. That is to say, CEER deliverables and activities should contribute, directly or indirectly, to outcomes that further these goals. In the following chapters, the elements of the new Strategy are described in more detail and the logic of the Strategy is highlighted in a two-part diagram in the following chapter.



# Building blocks of the Energy Transition Strategy

As can be seen from the diagram on the next page, the starting point of the Energy Transition Strategy are the **megatrends** which are translated into targets by “EU policy lines” from which certain targets follow naturally. Chapter 3 provides our analysis of which megatrends have the greatest impact on the development of the energy sector. The EU policy lines are filled with the various initiatives/strategies and EU legislative proposals from the European Commission.

All targets might be summarised in one principal theme: the **Energy Transition** and CEER’s/National Regulatory Authorities’ (NRA) role is to best support achieving this theme, which can be broken down further into the targets of decarbonisation, climate neutrality, sustainability and efficiency.

To achieve the Energy Transition and these targets it is of key importance to enable **energy system integration** as further explained in Chapter 4.

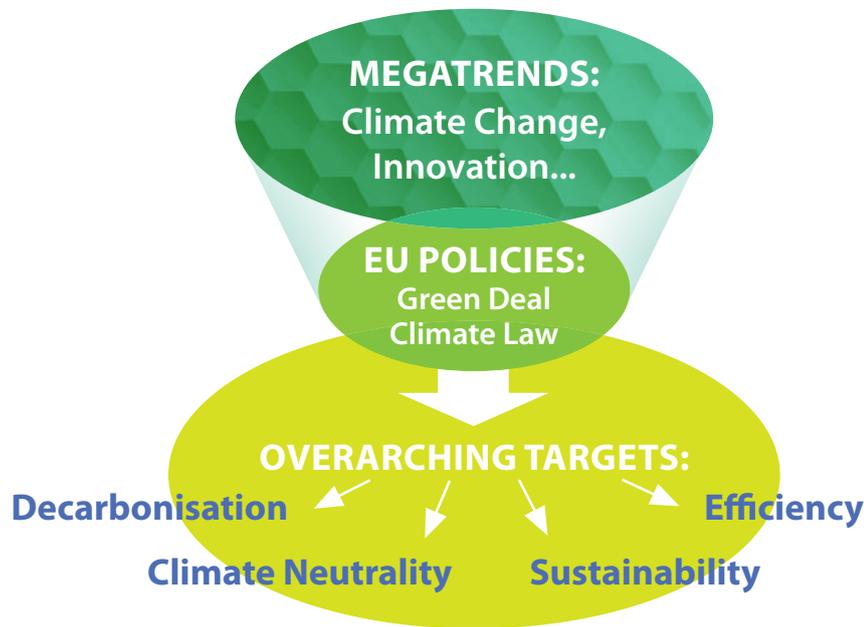
Moreover, the CEER Strategy puts forward a **consumer-centric smart regulatory model** placing the consumer at the centre of the strategy. This is done by incorporating the [CEER-BEUC 2030 Vision for Energy Consumers](#) into the new CEER Strategy as presented in Chapter 5. This chapter looks at decentralised and local energy from a consumer angle noting the close links with the market-based approach of flexibility at the distribution level.

Indeed, the regulatory model rests on **well-functioning markets** (including the Internal Energy Market (IEM)) delivering secure energy supply and the necessary level of **flexibility** – in relation to volatile renewables as the basis. Both – regulation and markets – go hand in hand and the relationship may evolve further to cope with as well as steer an evolving flexible energy system as described in Chapter 6.

While the global trends set the scene, **regulators** acting within the European framework have to implement concrete regulatory solutions nationally, taking into account the local market situations through the flexibility to be introduced at the distribution level. The **CEER Strategy** ensures that by following proven regulatory principles regulators adapt and apply best regulatory practices **consistently** across Europe contributing to more integrated markets for the benefit of all European citizens.

Finally, Chapter 7 sets out the conclusions and the implementation of the CEER Strategy.

## Trends and targets underpinning the CEER 2022-2025 Strategy



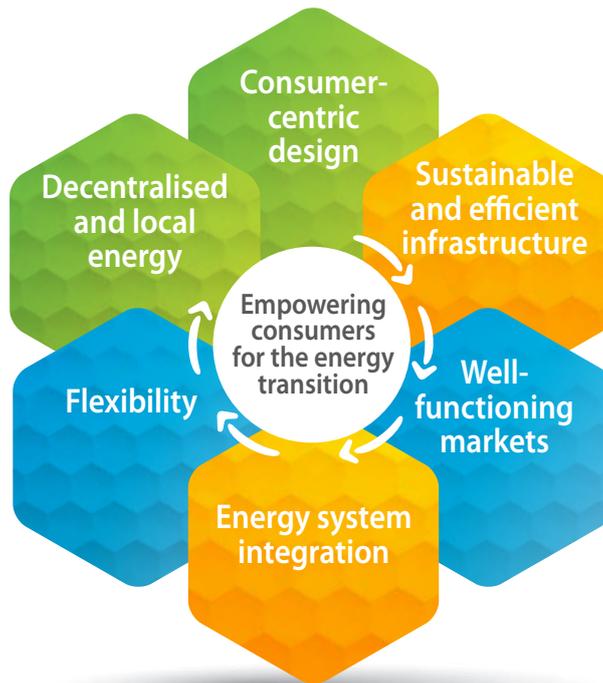
To achieve the above-mentioned targets, the CEER Strategy builds on the following three regulatory dimensions for the Energy Transition towards a carbon-neutral society and economy:



Drawing on these three regulatory dimensions, CEER presents its multi-dimensional **Energy Transition Strategy**. To make the principles more concrete and implementable, each of the three regulatory dimensions consists of two core areas, resulting in a total of six core areas, as presented in the figure below. The colour-coded

hexagons illustrate the three interrelated dimensions, each split into two aspects, and represent regulators' ambition to work using a holistic view. The six core areas are then further defined in the boxes, highlighting a fairly complete list of topics to be worked on by CEER in the coming years.

**CEER 2022-2025 Strategy: "Empowering consumers for the energy transition"**



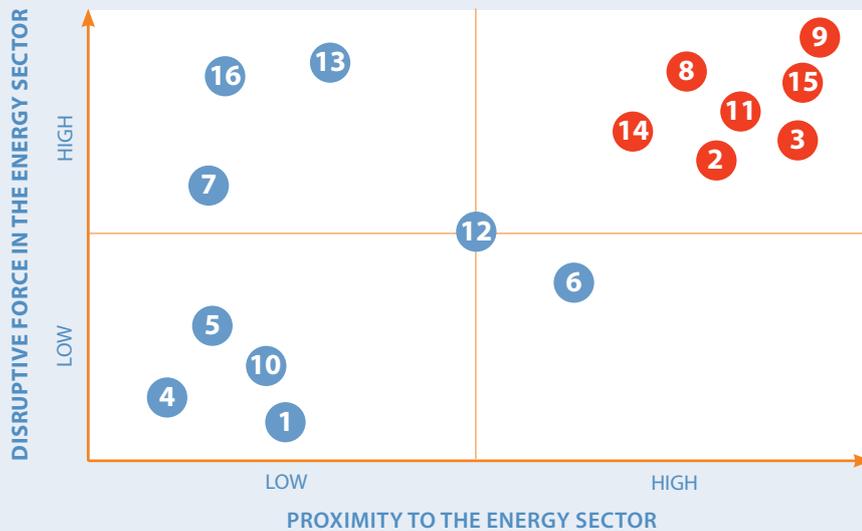
**The six core areas of CEER's Energy Transition Strategy further defined:**

<p><b>Consumer-centric design</b></p> <ul style="list-style-type: none"> <li>• LET'S ASPIRE principles</li> <li>• Consumer rights and protection</li> <li>• Energy efficiency</li> <li>• Consumer groups</li> <li>• Energy poverty and vulnerability</li> <li>• Data management</li> </ul>	<p><b>Sustainable and efficient infrastructure</b></p> <ul style="list-style-type: none"> <li>• Technology neutrality</li> <li>• Innovative and advanced solutions</li> <li>• Sustainable finance</li> <li>• Efficient grid management</li> <li>• Integrated planning</li> <li>• Investment certainty</li> </ul>	<p><b>Well-functioning markets</b></p> <ul style="list-style-type: none"> <li>• Internal energy market</li> <li>• Cross-border interconnections</li> <li>• Resilience and cybersecurity</li> <li>• Reliable and secure supply</li> <li>• Future market evolution</li> </ul>
<p><b>Energy system integration</b></p> <ul style="list-style-type: none"> <li>• Future energy mix</li> <li>• Hydrogen networks</li> <li>• New gases (e.g. H2)</li> <li>• Resource adequacy</li> <li>• Core market principles</li> <li>• Whole system approach</li> </ul>	<p><b>Flexibility</b></p> <ul style="list-style-type: none"> <li>• Flexibility procurement and demand-side response</li> <li>• Long-term storage</li> <li>• Innovation</li> <li>• Digitalisation</li> <li>• Aggregation</li> <li>• RES integration</li> </ul>	<p><b>Decentralised and local energy</b></p> <ul style="list-style-type: none"> <li>• Energy communities</li> <li>• Self-consumption</li> <li>• Demand-side response</li> <li>• Peer-to-peer trading</li> <li>• Distributed energy resources</li> <li>• New business models</li> </ul>

# 3



## Megatrends and their impact on energy regulation



- 1 Work and companies in transition
- 2 Challenging population developments
- 3 Aggravation of the energy and resource situation
- 4 Gender roles in transition
- 5 Great health advances
- 6 Advancing globalisation
- 7 Progressive individualisation
- 8 Internet culture and digitalisation
- 9 Climate change and greening
- 10 Market and consumption in transition
- 11 Growing mobility and logistics needs
- 12 Political and economic upheavals
- 13 Intelligent products and infrastructures
- 14 Increasing global risk density
- 15 Increasing urbanisation
- 16 Knowledge society on the advance

Megatrends have been identified by numerous research institutes, think tanks, and consulting companies to describe the long-term zeitgeist. The above diagram shows a list of 16 trends. They have been analysed in terms of three aspects: (a) their proximity to and (b) their disruptive force in the energy sector as well as (c) the question of how the trends with a high impact on the energy sector can be positively influenced by regulation.

Hereafter, we lay out the result of our analysis for the four megatrends (upper right corner of the diagram) that are most relevant for energy regulation and can be most influenced by regulators.

## CLIMATE CHANGE AND GREENING

### (trend 9)

Over the past decades, the average global temperature has increased at an unprecedented rate. Consequently, more energy will likely be used for cooling and less for heating, which will affect the delivery of energy. Moreover, a warmer climate could reduce the efficiency of energy production. To respond to these increases in demand of energy and cooling, infrastructure will have to be adapted, potentially requiring investments in new energy generation and distribution infrastructure. Furthermore, reversing the trend of rising temperatures will only be possible by raising awareness among consumers regarding the environmental impact of energy consumption and communicating ways to adapt and reduce their consumption.

### IMPACT ON REGULATION

The decade we are entering is critical to decarbonise the economy, combat climate change and achieve EU climate goals. Regulators of the energy sector have a centrally important role to play in that regard, working within the policy framework set by the EU institutions. The upcoming climate initiatives of the EU will require that all economic sectors be put on track to achieve climate neutrality by 2050. The EU is determined to revamp this commitment at the next United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) in 2021 and lead by example worldwide in this area.

The energy sector will have to undergo a major transformation to achieve net-zero emissions. Regulators see themselves as an enabler of the shift to a low-carbon energy sector, using the NRA's powers to encourage investment in renewables, management of legacy assets, supporting innovation (e.g. innovation hubs) and embracing the opportunities of data governance and digitalisation, whilst protecting consumers. Global regulatory collaboration may also be considered.

## INTERNET CULTURE AND DIGITALISATION

### (trend 8)

The trend towards digital technologies also affects the energy sector: the productivity of energy systems can be improved, making energy systems more connected and reliable. Because of these technologies, information can be processed in real time, which makes it easier to identify who needs energy and to deliver it at the right time. In

short, energy suppliers can use digital tools to optimise operations. Additionally, the exchange of information between all actors will increase and continue to improve. Consumers will have more information and knowledge, which will be beneficial for the entire energy system.

### IMPACT ON REGULATION

Given the digital developments, the communication and work of regulators has already changed and will continue to do so. In the future, NRAs will have to assist and support digitalisation of the energy markets in the interest of empowering the energy consumers and embracing the opportunities of data governance and digitalisation.

## INCREASING URBANISATION

### (trend 15)

The increase in the number of people living in cities also means that the number of energy consumers will rise in urban areas as well as the demand for energy and transport. If urbanisation grows (too) rapidly it can lead to increased challenges for distribution and transmission system operators. Capacity constraints or even scarcity situations, especially in metropolitan areas, have already occurred in some Member States. Part of the problem is also that many developers, including regions and municipalities previously have taken access to energy for granted. Urbanisation also implies structural changes of the economy with industrial centres being relocated as well.

Increasing urbanisation also leads to a decline in rural populations. Consequently, the energy sector will have fewer consumers in these areas and some infrastructure will become obsolete. Another aspect in this regard is the tendency of load and generation drifting further apart. To meet this shift in demand and ensure system adequacy, the energy sector will have to develop concepts concerning efficient energy services and infrastructure in urban areas together with distributed generation infrastructure. Better coordination between different stakeholders and the energy sector as well as between TSOs and DSOs will also be required.

### IMPACT ON REGULATION

The increasing urbanisation will have an effect on the energy infrastructure, energy markets and services, which will have to be addressed by regulators. Markets and infrastructure will have to be adapted in accordance with these changes.

## **AGGRAVATION OF THE ENERGY AND RESOURCE SITUATION**

(trend 3)

Demand for food, land, minerals, energy, and other resources is rising, making them increasingly scarce. Therefore, an exchange with less scarce or, ideally, renewable resources should become a top priority in all the relevant sectors.

### **IMPACT ON REGULATION**

Integration of renewable sources in the energy system has to be tackled by means of regulation and thus with the support of energy regulators. The full chain of flexibility in the generation, use and storage of energy should be taken into account. Opportunities arising from a better use of data should be harnessed. Equally, energy efficiency measures must be implemented to save resources and energy. Sustainability initiatives such the circular economy should be encouraged by engaging with the Commission and national governments.

## **GROWING MOBILITY AND LOGISTICS NEEDS**

(trend 11)

In order to tackle climate change and also meet the growing need for mobility, the focus of the energy sector will likely be faced with new challenges stemming from the promotion of sustainable and decarbonised mobility, in particular electrification of mobility for everyone and in every area.

### **IMPACT ON REGULATION**

The mobility sector is facing a major transformation. E-mobility concepts create interfaces with network energy markets; therefore, regulators will naturally have to deal with the topic of mobility as well. Sector and system integration will also concern the mobility sector.

# 4



## Enabling energy system integration

CEER is strongly committed to contributing to the debate on the most appropriate solutions to promote decarbonisation while delivering sustainable, secure and affordable energy for all European consumers. The European Green Deal has set a series of ambitious targets and has led us to push forward an integrated vision of the energy system to support this path towards decarbonisation. Indeed, decarbonisation will require a greater interaction between sectors (e.g. gas and electricity, and also heating/cooling and transport and industry) to identify low-carbon processes at least cost.

Energy System integration tackles the main decarbonisation challenges, such as the massive integration of RES to the system (especially offshore), massive electrification of key industries and mobility. However, for some sectors direct electrification will reach limits and thus integration across the vectors will also be relevant.

The integration of our energy systems can be seen from several interrelated perspectives, for example joint planning, **technology-neutral** needs assessment and operation of the networks that transport the different types of energy carriers as well as coordinated use and management of the resources utilisation at regional and local levels.

Planning and operating the energy system in a **holistic way**, considering the interlinkages between energy vectors, energy uses as well as supply and demand, allows us to optimise the resources and costs faced by all. Crucially, it promotes efficient choices, at least cost to consumers as

well as industrial users and to the environment. For Europe's energy systems to be integrated effectively, they must be assessed and adapted at several stages, from the planning of system needs and investments, to the design of the market to their resulting operation in practice. Given the long-time experiences and responsibilities of regulatory authorities in these various aspects, regulation has an important role in identifying and overcoming barriers as well as highlighting the need for new areas of regulation (for example, hydrogen) and improvement of existing processes. In this respect, and based on the expertise of its members CEER will place particular attention on regulatory oversight and governance (including the proper separation between market & regulated areas), consistency of rules and increasing the efficiency of the procedures that apply across the energy sector.

Furthermore, it is worth underlining the broader dimension of energy system integration, taking into account the achievement of a circular economy and the interactions between the energy, agriculture, (district) heating, industry, transport and waste sectors in order to optimise the process of decarbonisation and of the resources we use.

With that in mind, CEER has identified two core areas for this work, which will be addressed in more detail below:

- Energy system integration, in terms of concrete and practical policies and actions; and
- Sustainable and efficient infrastructure, considering its specificities and the challenges in promoting its effective integration.



## 4.1

# ENERGY SYSTEM INTEGRATION

An integrated energy system is one which takes into account the adequacy of all the available resources for a secure supply – irrespective of the future energy mix – and manages supply and demand in the most cost-effective manner. The development of new technologies, such as renewable and low-carbon gases, drives the emergence of new market trends and solutions. By way of example, we note the possibility for a single facility to use waste to produce electricity, (decarbonised) heating and clean gases, illustrating the potential of optimising previously separate processes and energy carriers.

### Energy system integration

- Future energy mix
- Hydrogen networks
- New gases (e.g. H<sub>2</sub>)
- Resource adequacy
- Core market principles
- Whole system approach

The future energy mix will be based on a wide range of technologies. The increase of renewable energy generation is at the heart of the decarbonisation of the energy system. Additionally, the growing electricity demand, due to electrification of industry and transport, leads to the need for more and smarter grid infrastructure. Offshore wind energy, for example, has the potential to provide large amounts of clean energy and is set for robust growth in the EU. The next-generation electrical power system will be increasingly smart and will be one of the fundamental aspects of the integrated energy system, linking the planning and operation of DSO and TSO networks. Using the power of data analytics, monitoring and smart communication enables an adequate combination of available and cost-efficient resources in the electrical grid. Unlocking the potential of digitalisation by including for example virtual power plants paves the way for cleaning up the grid. Digitalisation and information are two of the main aspects for selecting the most efficient energy solution and for maintaining the existing high levels of system reliability, quality and resource adequacy. At the same time, the increasing digitalisation requires stepping up cybersecurity levels by implementing suitable rules to protect grids and data used adequately. The increasing popularity of electrical vehicles will open up new market opportunities such as “smart charging”. Another very important aspect is the need for shifting generation and load in terms of flexibility instruments, such as demand side management, RES curtailment and the usage of long-term storage. As regulators we have to define clear regulatory conditions to overcome potential barriers for implementing these new services.

Indeed, although electricity is at the heart of decarbonisation, the role of renewable and low-carbon gases is also recognised, and it will be through promoting synergies in the overall energy system that it will be possible to achieve the agreed targets. Considering that significant additional quantities of RES-electricity will be needed, these gases may be used as one of several flexibility instruments for different purposes and provide different services, such as for storage in relation to volatile RES generation and its possible curtailment. The door is open to new actors and new technologies, requiring a careful adaptation and oversight of markets and regulation. Additionally, the declining need for natural gas raises the issue of conducting any regulatory assessment of new infrastructure with utmost care, excluding potential sunk costs and utilising existing infrastructure in the most efficient way (e.g. by system integration or smartening the network). In this integrated context, CEER notes the relevance, for example, of revisiting the current established electricity and gas definitions, with respect to the efficient use of their respective networks.

As regulators, we must closely follow the debate and the developments while identifying and overcoming any possible barriers that these recent updates may cause. It is important to allow the emergence of new actors while ensuring a dynamic regulatory approach. For example, hydrogen is considered as one of the main new actors that will actively contribute to delivering decarbonisation. The need for regulatory intervention for hydrogen network infrastructure will depend on how the hydrogen sector will evolve, including the need for transport of hydrogen. Thus, it will be of the utmost relevance that regulators provide a clear framework to support the development and integration of these installations. Regulators must promote the technical, regulatory and market conditions that enable hydrogen's future integration into the energy system. As we monitor how the hydrogen sector develops, we recommend adopting a gradual approach to its regulation, in line with the core principles of economic regulation of natural monopolies and markets.

In this regard, power-to-gas technologies are pivotal, as they provide an interface between the electricity and gas vectors (also including hydrogen and biomethane), allowing a better coupling of the EU's gas and electricity sectors (both in terms of their markets and infrastructure provided that these are the most efficient and effective solutions. As regulators, our role will not

be to decide on the best technology to be developed. But, in order to overcome potential barriers, we must define the regulatory conditions that would allow the most cost-effective solutions to be developed in a technology neutral manner. As a starting point, we believe that investment and management of power-to-gas installations should be considered as market-based activities, which are open to competition among market players. Thus, the regulatory treatment for all installations should be fair and the market should select the most efficient solutions. At the same time, it is important to provide certainty to potential investors, while ensuring that basic market principles are respected.

For example, power-to-gas installations and their suitable locations should be taken into account in system needs analysis. Equally, network tariffs should not be used to subsidise technologies, activities or users and should provide a level playing field for comparable activities in the context of an integrated energy system.

These considerations reinforce the importance of a whole system approach for planning, operating and regulating an increasingly integrated energy system. Moreover, given the close interlinkages to other sectors energy system integration goes beyond the energy system. It also includes, for example, district heating, which also poses regulatory challenges for energy regulators, such as in regard to the regulatory regime that serves the consumer and other users best. Such challenges need to be addressed jointly.



## 4.2

# SUSTAINABLE AND EFFICIENT INFRASTRUCTURE

This expanded view of the energy system naturally brings with it major challenges for existing and future infrastructure decisions. The current roles and responsibilities have to be reviewed. An effective regulatory framework at EU level is needed to ensure a level playing field for new solutions<sup>1</sup> removing barriers to entry.

The [Clean Energy for All Europeans package](#) (CEP) has introduced several improvements in the network code governance for the electricity sector, which should now be extended to an integrated reality (including natural gas heating/cooling, mobility and other sectors).

Efficient functioning of the European market is one of the fundamental objectives of NRAs. Reaching optimal efficiency of the market requires all segments of the market, operation and infrastructure development to run efficiently. For what concerns the infrastructure development, it includes the deployment of any solution that may allow an optimal and efficient utilisation of the existing network. Such technologies should be able to provide new services and optimised processes, in the context of the efficient operation of the system, enhancing stability and security and, at the same time, reducing energy costs. More generally, the focus is on any solution or improvement at the utilisation of existing infrastructure that creates value to the consumer.

In order to do so for infrastructure decision making the principle of technological neutrality should be applied with utmost attention. CEER believes that infrastructure development should start with jointly developed, balanced and integrated scenarios used for planning purposes and a methodology for the identification of system needs that does not favour any specific solution. Another important aspect is to have an infrastructure planning process that enables the facilitation of meeting system needs cross-sectoral and without inherent bias towards CAPEX-intensive solutions, i.e. promotion of innovative and advanced solutions to efficiently utilise the

existing grid before reinforcement and expansion. In this regard, the benchmarking of the efficiency of networks continues to be relevant and might even become more important. Additionally, infrastructure assessment by the regulators should be performed on the basis of a consistent, monetised and cross-sectoral cost-benefit analysis.

An integrated and decentralised renewable energy system with a large number of diversified actors creates new challenges regarding system resilience, quality of supply and grid management. The traditional tools and methods being adopted have to be enhanced in order to ensure an efficient integrated grid management with distributed cross sector energy resources managed in an environment with increase uncertainty.

Delivering on the objectives of the Energy Union and of the Green Deal will require major investments in networks in the coming years. CEER considers that there is room and need for further improving the efficiency of energy network planning and development.



### Sustainable and efficient infrastructure

- **Technology neutrality**
- **Innovative and advanced solutions**
- **Sustainable finance**
- **Efficient grid management**
- **Integrated planning**
- **Investment certainty**

<sup>1</sup> For example: production of electricity from solar PV and wind power, transport and distribution of electricity in a system that is in a trajectory of decarbonisation, storage of electricity, storage of hydrogen, retrofit of gas transmission and distribution networks whose main purpose is the integration of hydrogen and other low-carbon gases, infrastructure for low carbon land transport such as electric charging points, electricity grid connection upgrades, hydrogen fuelling stations, among others.

For example, in the context of an integrated energy system, it could be necessary to locate power-to-gas or power-to-heat installations at specific points of the regulated energy networks, also taking into consideration that, as the network is a scarce resource, the location of these installations may create difficulties of access for other investors with the same or other technologies.

CEER is fully committed to implementing the (revised) TEN-E Regulation and the EU provisions regarding infrastructure investments, such as the Ten-Year Network Development Plans (TYNDPs), including offshore network development, constituting one of the main areas of action for regulatory authorities. Hence, with the emergence of new actors, it is crucial to ensure that the existing infrastructure is prepared in a more detailed and integrated way and is resilient enough to embrace these various players while guaranteeing the quality of the energy supplied.

As part of a whole system optimisation, there will be a need for a balanced consideration of constructing new pipelines for the transport of new gases, such as hydrogen, versus the repurposing of (parts of the) existing gas infrastructure which might become obsolete in the future. Infrastructure planning will thus require an integrated approach, using joint scenarios which incorporate all elements of the energy system, such as the energy carriers, networks (offshore, distribution, transmission) and supply and demand. To that end, storage and sector coupling technologies should be integrated in a more detailed way in infrastructure planning models. Equally, regulation should establish a level playing field between long-term storage and other seasonal adequacy approaches (i.e. excess generation assets, flexibility and storage). Moreover, it will also require an environmental conscience as future investment will be subject to a sustainable scrutiny to ensure the achievement of Green Deal priorities.

Consequently, CEER underlines the importance of ensuring that Europe's energy infrastructure planning and development framework contributes to achieving its energy policy objectives through the identification and unlock of projects with a clear value for the society and economy. In the course of the Strategy, CEER will continue to develop relevant studies, reports and policy papers tackling these concerns.





5

# Placing consumers at the centre of energy markets with consumer-centric dynamic regulation, empowering consumers to actively contribute to and benefit from a flexible energy system

The transformation of EU energy markets to tackle climate change will require profound changes to our economy. It will significantly influence the way we use and interact with energy in our everyday life, such as to heat and cool our homes, cook our food and fuel our cars, and the way in which we engage with energy markets.

Empowered and protected energy consumers, as well as well-functioning retail markets that bring benefits to consumers, have been a major priority for CEER for many years. The green transition will create new opportunities and challenges for Europe's energy consumers and will therefore remain a very important policy area for CEER in the years to come.

Realising the multi-dimensional and interwoven nature of the many issues that lie ahead for the energy system and for consumers, CEER has grouped consumer issues under two core areas, which will be addressed in more detail below:

- Consumer-centric design; and
- Decentralised and local energy.

These core areas must be seen alongside and in conjunction with the other core areas in our Strategy, for example, the core areas on delivering well-functioning markets and enabling flexibility, both of which are instrumental in ensuring that an integrated and decarbonised energy system works to the benefit of consumers and society overall.

## 5.1

# CONSUMER-CENTRIC DESIGN

For consumers, green transition policies should help reduce their carbon footprint, improve energy efficiency, especially in buildings, and speed up the transformation of energy markets by enabling the take-up of new technologies, sustainable energy carriers and new business models. At the same time, consumers stand to benefit from greater flexibility and digitalisation. This will contribute to decarbonisation at least cost and help the energy system to cope with a much higher degree of electrification and increased production of electricity from renewable sources.

### Consumer-centric design

- **LET'S ASPIRE principles**
- **Consumer rights and protection**
- **Energy efficiency**
- **Consumer groups**
- **Energy poverty and vulnerability**
- **Data management**

During the energy transition, it is important to protect the rights of all consumer groups, in particular vulnerable and disadvantaged groups, such as the energy poor or those with a lower level of digital literacy. Energy consumers have different needs and priorities, and varying levels of engagement with the market. Irrespective of the roles that consumers may assume, CEER believes that everyone must be guaranteed trustworthy and clear information, which allows them to make informed choices in a complex environment. With such knowledge, active consumers can seize the opportunities available to participate in the energy transition. Equally, other consumer groups must not be left behind. Tools must be in place to provide advice and support to help consumers understand their energy use. Rules for protecting consumer data and for data management (including non-discriminatory access and authorised use) must be rigorously respected. Furthermore, it is important to incentivise an efficient use of energy by all consumers.

Ensuring that consumer rights (including with regard to privacy) are promoted and protected, whilst delivering on the EU's sustainability and climate neutrality objectives, is a key priority for the CEER-BEUC 2030 Vision for Energy Consumers<sup>2</sup> and as such is an integral part of CEER's Strategy from 2022 and onwards.

The CEER-BEUC Vision sets out six core principles, striving for a "Long-term Energy Transition for Sustainability and climate neutrality: Affordability, Simplicity, Protection, Inclusiveness, Reliability and Empowerment". In short, we call this "LET'S ASPIRE". These principles are valid for all consumers, be they electricity, gas or heating consumers. Furthermore, it is important to safeguard the rights of all these customers as we proceed with the energy transition, also recognising that in the medium term, many households and consumers across Europe will continue to use gas for their everyday needs.

<sup>2</sup>[CEER-BEUC 2030 Vision for Energy Consumers](#), published October 2020.

**AFFORDABILITY** highlights the importance of correct price signals reaching consumers, but also that it is important that consumers can reap the benefits of energy efficiency. It also states that network charges and costs related to the transition must be distributed fairly among all users. Finally, the principle stresses the importance of making distributional impact assessments of planned policies to ensure that such policies do not increase the burdens on vulnerable consumers and the energy poor.

**INCLUSIVENESS** highlights that policy makers need to ensure that new policies are inclusive and do not increase gaps between consumers, especially the more vulnerable. The possibility to reduce energy bills should be a special focus for energy policy makers. Inclusiveness also includes not creating new societal divisions as markets become more digitalised. Finally, the principle sets out that it is important that consumers can become an integrated part of the transition themselves.

**SIMPLICITY** underlines the need for clear, trustworthy and easy to understand information, including bills, in order for consumers to compare offers and to become an integrated part of the transition. The principle also highlights the importance of consumers getting clear and reliable advice on how to use energy sustainably to satisfy their needs.

**RELIABILITY** stresses that energy supply is an essential service of general economic interest and that it is therefore essential that energy suppliers are aware of their responsibilities and obligations and act accordingly. Consumers should also have access to reliable and secure energy supply. Commercial systems and processes, for example billing, should be dependable, and disputes resolved transparently, fairly and quickly. The principle also highlights the importance of consumer trust.

**PROTECTION** focuses on the importance of fit-for-purpose consumer protection legislation, both sector-specific and general, against unfair commercial practices, and the possibility to get redress if necessary. It also highlights the importance of data protection and cybersecurity in a consumer context. Finally, it refers to the importance of crisis management if unexpected events occur, for example a pandemic like Covid-19.

**EMPOWERMENT** states that the same level of protection should be enjoyed by consumers regardless of whether they have a traditional supplier or rely on new energy services, regardless of company. According to this principle, consumers should also be able to easily contribute to the transition by producing and selling their own electricity and by taking part in demand-side response schemes, etc. In this context, correct price signals and low thresholds to enter the market are important.

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Looking ahead to 2030 and the EU's 2050 sustainability and climate neutrality objectives, we envision a future where effective policies and frameworks ensure that consumer rights are promoted and protected, whilst delivering these objectives. This is at the heart of the 2030 Vision and addressed by the LET'S ASPIRE principles.

Thus, the six principles and the areas highlighted under each principle provide a high-level steer. Each principle will require further work from CEER and other stakeholders in

order to be effective. Transforming the Vision's principles into action is a long-term goal and will require systematic work from many parties, including governments, industry, regulators, consumer bodies, and authorities. This is why the LET'S ASPIRE principles form the strategic basis for CEER's 2022-2025 Strategy. Our regulatory activities across all areas will contribute to advancing the implementation of the principles and making them a reality for consumers, empowering them for the energy transition.

## 5.2

# DECENTRALISED AND LOCAL ENERGY

In order to be effective, the energy transition needs to include consumers themselves in the process. It must recognise and respect consumer needs and choices, guaranteeing their rights and supporting the most vulnerable. At the same time, it must provide consumers with the necessary tools and framework for them to participate in efforts to achieve a sustainable and carbon-neutral society.

### Decentralised and local energy

- Energy communities
- Self-consumption
- Demand-side response
- Peer-to-peer trading
- Distributed energy resources
- New business models

The energy transition, decarbonisation and technological developments are driving forward changes in energy markets, enabling new market models to emerge and reshaping our understanding of energy systems. Previously based on large generation centres and long-distance energy networks, energy systems are being transformed. Active consumers have a key role to play, as members of energy communities, self-consumers, prosumers, or participants in demand-side response as well as in energy sharing and trading schemes. The changing role of consumers will contribute to more efficient markets and system management. New business models like energy communities, demand-side response and peer-to-peer trading can allow consumers to become a more integrated part of the energy system

and the transition. For example, they can support system operation by providing flexibility services locally and alleviating the need for traditional network upgrades.

However, the emergence and growth of decentralised and local energy production – and consumption – introduce new actors, new responsibilities and the need for new regulatory and market frameworks. These actors must be integrated into the energy system in a cost-efficient way, accounting for real savings in the energy system as a whole and delivering value to all customers. Local consumption should respond to effective market price signals, to ensure that overall system costs are minimised and optimally allocated, unleashing the flexibility potential of customers and therefore contributing to integrating renewables more effectively. In addition, rules and administrative procedures for small renewable energy producers and local energy communities should be simple, in order to ensure that these actors do not face discriminatory burdens or costs in comparison with established energy companies. The Clean Energy Package put in place provisions to facilitate the evolution towards more flexible and distributed energy resources and a multi-faceted and interactive energy system (see also below point 6.2), but much work remains to be done to ensure the realisation of these new models, whilst respecting the LET'S ASPIRE principles.

Indeed, assuming a multi-dimensional perspective, CEER's work across all six of our Strategy's core areas will contribute to enabling and achieving the transformation of our energy systems, in which decentralised and local energy contribute to delivering flexibility in well-functioning markets, and sustainable infrastructure decisions based on a consumer-centric approach.



# Ensuring well-functioning markets delivering flexibility

Sustainable consumption and production is a fundamental objective and decentralised (or distributed) energy will have a key role to play in achieving this ambition. Making the energy system on all levels more flexible to cope with an increasing share of intermittent renewable generation requires a market-based approach, i.e. setting the regulatory framework in such a way that it enables markets to work properly and competition, thus ensuring efficient price signals are sent to suppliers and users alike.

As stated in the 2015 CEER Position Paper on Well-Functioning Retail Energy Markets<sup>3</sup>:

*“...competitive pressure keeps suppliers on their toes to avoid their customers switching to better deals with competitors, including new entrants. This pressure should encourage suppliers to innovate to create products that meet the changing needs of consumers; to present complex deals and products simply; to keep their costs down; and to treat customers fairly, including through continually improving customer service. In the same way, distribution system operators (DSOs) need to provide quality services and must facilitate a level playing field for retail competition by acting as neutral and efficient market facilitators. Effective competition between suppliers is in fact driven by consumers that are sufficiently engaged to incentivise rivalry for their business. Furthermore, given the essential nature of energy as a service, competition is necessary – but may not be sufficient – for the delivery of broader consumer outcomes. Well-functioning markets need to benefit society as a whole,*

*particularly by ensuring that vulnerable consumers are not disadvantaged or overlooked.”*

With that in mind, CEER has identified two core areas for this work, which will be addressed in more detail below:

- Well-functioning markets, recalling the main principles of markets open to competition; and
- Flexibility, looking at the distribution level in particular.

## 6.1

### WELL-FUNCTIONING MARKETS

We are currently facing an evolution of the energy markets without precedent. We are currently moving towards a more integrated and at the same time more decentralised market(s), with the entry onto the scene of various actors, whose roles are still to be defined. In fact, maintaining the pressure to integrate the markets at a European level, there is a greater participation of distributed energy resources managed by aggregators, contributing to an increasing use of the flexibility available at the local level.

<sup>3</sup> [CEER Position Paper on Well-Functioning Retail Energy Markets](#), Ref: C15-SC-36-03, 14 October 2015.

The expected drop in natural gas demand will coincide with a drive to move from conventional to decarbonised and renewable gases. This is primarily driven by the strict carbon emission reductions endorsed by the EU. Despite the predictable rise of electrification in the energy system, gas still has a role to play and will certainly be a motor to ensure decarbonisation and security of supply at least cost. The emergence of green gases will be considered, and they should be integrated into the existing gas market, with a full valuation of their environmental benefits and captured in market monitoring through sustainability indicators published alongside Gas Target Model (GTM) metrics.



Despite the continuous role of electricity and gas, it will be crucial to expand our outlook into an integrated system where other energy vectors may be included. Circularity will be the key to achieve decarbonisation targets and as regulators, we will contribute to that end.

Market design must ensure that all forms of energy – supply and demand; centralised or decentralised; large-scale and micro-production – are able to compete on equal terms in the market. All actors should be compensated fairly for the benefits they bring to the system and, conversely, bear the costs of the constraints or costs that they generate.

Any barriers to market entry and participation must be removed, whilst ensuring a level playing field for all energy actors and types of activities, be they on the demand or the supply side. Indeed, these binary concepts will become increasingly blurred in an integrated energy system with decentralised and local energy, storage,

flexibility, aggregators, industrial users, prosumers and active consumers.

## 6.2

### FLEXIBILITY

Following the CEP we need to organise electricity markets in a more flexible manner and to fully integrate all market players in decentralised markets – including producers of renewable energy and providers of new energy services, energy storage and flexible demand. This also requires the modernisation of distribution networks and their development into smart grids in order to encourage decentralised generation and energy efficiency, in other words an increased digitalisation. This requires ensuring adequate protection against cybersecurity risks by setting suitable rules. As well, this means specific measures for setting up simplified and streamlined authorisation procedures for small decentralised and/or distributed generation. Finally, this implies market-based incentives to unlock the market for demand-response (see above section 5.2 for the consumer angle).

The following section sets out CEER's approach to flexibility procurement and the role of DSOs. CEER sees DSOs as neutral market facilitators, but clearly, competitive activities should be left to the market and unbundling principles respected<sup>4</sup>.

An assessment will have to be done on how decentralised energy offers the opportunity to reduce the carbon intensity of energy use and increases resource efficiency use to help improve environmental sustainability. Energy users would then benefit from increased energy security and of course an increasing uptake of decentralised energy should create new business models.

Decentralised energy will cover a wide range of technologies and brings a range of business benefits e.g. increased conversion efficiency (reduced transmission losses); increased use of renewables, more flexibility for generation to match local demand patterns for electricity; and greater energy security for businesses that control their own generation.

<sup>4</sup> See the [CEER Conclusions Paper on New Services and DSO Involvement](#), Ref. C18-DS-46-08, 22 March 2019.

Significant changes in the European energy system over the last decade have been driven by an increased deployment of intermittent renewable generation, decarbonisation and digitalisation. One way of managing these changes and ensuring secure system operation is through improving system flexibility. The topic of flexibility is of increasing interest and importance across the entire energy value chain and in CEER's view, a **holistic approach** and view are necessary in the coming years.



In the distribution system, **market-based flexibility** used by DSOs could lead to a better utilisation and development of network capacity and thereby defer or be an alternative to traditional reinforcement, where it is a cost-efficient alternative. There are also other forms for the DSOs to access flexibility (a rules-based approach, connection agreements network tariffs) which should be considered and interactions between them taken into account. Fundamental preconditions are needed to be able to utilise flexibility and manage congestions efficiently in system operation. This will increase the efficiency of procurement and facilitate a beneficial use of flexibility for the system-as-a-whole. As noted under our themes on energy system integration and on decentralised and local energy, active consumers, energy communities and other actors are key when it comes to bringing Europe closer to its energy and climate objectives, by tapping into and optimising the contribution of all available resources, at all levels, in an integrated energy system.

On a European level, CEER recommends the following principles for all kinds of market-based flexibility procurement by DSOs: balanced incentives, adequate neutrality, technical prerequisites and an overall framework for procurement. The framework needs to clearly allocate rights, duties and responsibilities for the participating actors alongside securing availability of flexibility, while giving room for development. However, concrete implementation remains to be decided at a national level. A framework for market-based flexibility should at least include descriptions on product design, technical rules, a method to cope with imbalances caused by activations, tendering procedures, market model design and coordination schemes between system operators. NRAs have an important task in the assessment of the whole framework and especially the procurement procedure, of making sure the terms and conditions for different stakeholders are as clear as possible in the development, monitoring and potential intervention of such a framework, minimising the opportunities for distortions, resource lock-in, cross-subsidisation and undue investments.

Flexibility markets could exist on a variety of auction and trading platforms. There are many different approaches to the design and setup, keeping flexibility markets separate and somewhat independent on one side or integrating them partially or fully with existing markets on the other. With the combination and potential integration of different platforms, it could be challenging to determine the borderline between the regulated and non-regulated domain. Given this potential interaction and overlap, the frontiers of the domains should be properly defined. The market design should facilitate an optimal valuation of flexibility from a system point of view, established through free price formation, free choice to participate where it creates the highest benefit, without undue blocking or hindering of access, etc. Independent of the setup, the establishment of baselines and coordination schemes are a crucial aspect of products and their design and availability to other system operators and market parties. The interaction with other markets or flexibility valuation methods should be carefully observed.

In the near future, network development plans are an important tool to appropriately signal the need for flexibility and thus to help improve liquidity. They will provide information to potentially interested parties about where there is or could be a demand for flexibility

in the medium and long term. The obligation and process to create the network development plans should incorporate designs to enable a good compromise between effort and benefit.

Market-based flexibility should be based on a level playing field and open to all forms of flexibility, including assets from other sectors like heat and gas. To develop systems to an optimal point in terms of the utilisation of flexibility, more detailed analysis is needed.

This includes how markets interact, flexibility valuation methods and how coordination schemes should be carried out in practice, to gain experience and allow for optimisation in the interest of the end consumer. Furthermore, the interaction with other new actors like aggregators or energy communities needs to be observed and analysed.

CEER considers market-based flexibility as one very important option, which could allow for a substantial benefit in the distribution grid; contributing to its further development to support as renewable, reliable and efficient an energy supply as possible. This is especially salient when considering the integration of fluctuating renewables, electrification of industry and the further growth of appliances that increase demand like e-mobility, heat pumps and home storage. A careful design and assessment of efficiency is critical, where all necessary prerequisites for a market-based approach must be respected, imposing regulatory measures if/when necessary. It could also be beneficial to test some relevant aspects based on settings in regulatory sandboxes, where interactions between market functioning and scaling should be taken into account.

CEER sees room for more research in developing the details of the procurement framework, including the definition of products; the establishment of baselines; concepts to develop the framework towards optimal system benefits; priorities; sequence of activations; and the like. In the area of developing a functioning market, e.g. via market tests, adding decisions and criteria for the different actors would be beneficial, but this needs to be adjusted for national implementation. Another area requiring more analysis is the issue of TSO-DSO coordination, as well as the introduction of platforms and their potential relationship to the monopolistic activity.

DSOs will need flexibility in the future, and they need services based on location of flexibility and the situation in their network. CEER would like to see, after appropriate national experiments, the development of a common architecture in marked-based flexibility and incentives. This could provide guidance and market signals to link different flexibility platforms and market-places, so that different market participants and consumers could operate in a transparent and non-discriminatory manner. This will, also, improve the coordination between TSOs and DSOs in avoiding cascading effects in using flexibility in one market to another market.

CEER will continue to provide guidance on the market test for flexibility and storage, which is a requirement if DSOs want to own storage. In this guidance CEER will include a discussion on flexibility platforms and effective price-signals, providing clarity and guidance.

Further to this, CEER already has identified some upcoming challenges that we will have to cope with:

- Reassess distribution tariffs; the presence of several active network users scattered across the network increases the complexity in local network use and may require adjustments to the tariff structure (dynamic tariffs need local granularity); and
- Take care of increasingly decentralised gas production; local congestions, need for countries that will replace natural gas with hydrogen to adapt and/or replace gas infrastructure, which requires coordinated actions between DSOs and TSOs.





# Conclusions and implementation

In the above chapters we have outlined the megatrends shaping the environment for our regulation in the future. At the same time, we are also acting in a given framework of liberalised markets that provides the legal basis for all our actions. Pulling together these two realities, the main trend influencing our work as energy regulators is climate change and the policies and actions necessary to ensure we reach a climate neutral economy and society.

Therefore, energy regulators are committed to empowering consumers to participate in the energy transition to thereby promote it and to enable energy system integration as a major building block to achieve the overarching targets of decarbonisation, climate neutrality, sustainability and efficiency as spelled out in the Green Deal and other initiatives of the European Commission. The centrepiece of the new CEER Strategy is the consumer centric dynamic regulation. We incorporated the ASPIRE principles of the 2030 BEUC/CEER Vision into our Strategy placing the consumer at the centre of all regulatory activities.

With this in mind we will focus all our regulatory tools to **enable energy system integration through pursuing an innovative and flexible whole system approach** involving all actors whose roles will more and more converge in the changing environment.

Regulation and markets go hand in hand and the regulatory tools must be used flexibly in a way that fast evolving markets deliver on the above-mentioned targets for the benefit of **all consumers** who should be **empowered** to actively participate in and contribute to the energy transition while at the same time taking care that no one is left behind.

The fast-moving markets are driven by **innovation and new technologies** and require us to **adapt our regulation** in a way that balances the tension between achieving regulatory goals without discouraging innovation. The need to trial innovative solutions for a future integrated energy system must be based on renewable energy, energy efficiency, decarbonisation and be highly digitalised. They will be aligned with the principles of **consumer empowerment** in this evolving process which is key to support innovation.

The concept to do this is **dynamic regulation** with which we aim to unlock **flexible solutions** while relying at the same time on well-proven fundamental regulatory principles, in particular **predictability**. Regulation must be stable but never static. Regulators commit to apply dynamic regulation in a way that supports the energy transition.



# About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national energy regulators. CEER's members and observers comprise 39 national energy regulatory authorities (NRAs) from across Europe.

CEER is legally established as a not-for-profit association under Belgian law, with a small Secretariat based in Brussels to assist the organisation.

CEER supports its NRA members/observers in their responsibilities, sharing experience and developing regulatory capacity and best practices. It does so by facilitating expert working group meetings, hosting workshops and events, supporting the development and publication of regulatory papers, and through an in-house Training Academy. Through CEER, European NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

In terms of policy, CEER actively promotes an investment friendly, harmonised regulatory environment and the consistent application of existing EU legislation. A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable Internal Energy Market in Europe that works in the consumer interest.

Specifically, CEER deals with a range of energy regulatory issues including wholesale and retail markets; consumer issues; distribution networks; smart grids; flexibility; sustainability; and international cooperation.

CEER wishes to thank in particular its Strategy Steering Group for their work in preparing this document.

More information is available at [www.ceer.eu](http://www.ceer.eu)

## **CEER 2022-2025 Strategy Empowering Consumers for the Energy Transition**

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