



**EASE Reply to European Commission's
Public Consultation on
"STRATEGY FOR LONG-TERM
EU GREENHOUSE GAS EMISSIONS REDUCTIONS"**

October 2018



I. Guidance on the questionnaire

After a few introductory questions related to your general profile in section 1, the questionnaire has a number of questions in section 2.

To participate in the public consultation you are not obliged to fill in all questions. The different sections include questions on greenhouse gas reductions, the impact of consumers, the economic activity, energy, forests and land use, education and research, financing, meta trends, actors and adaptation to climate change. The final section is technical and more focussed on sectoral stakeholders (industry, transport, agriculture, land use).

Some questions are multiple choice questions. Other questions are open to which you can add if you want your comments. Please keep comments clear and concise because there is a limit on the number of characters you can enter.

If you want to express your views in more detail you can also upload a document with your views and insights.

As the results will be published on the Internet, please read the specific privacy statement attached to this consultation. It informs you about how your personal data and contribution will be dealt with. In the interest of transparency, if you are replying on behalf of an organisation, please register with the register of interest representatives if you have not already done so. Registering commits you to complying with a Code of Conduct. If you do not wish to register, your contribution will be treated and published together with those received from individuals.

II. Questions

a. Long term greenhouse gas emissions reductions

To achieve its temperature objectives, the Paris Agreement also includes a long term ambition to achieve a balance between emissions and removals of greenhouse gases by human activities in the second half of this century. Given that addressing climate change is a global challenge requiring all parties of the Paris Agreement to act, what do you think the EU should contribute to achieve the Paris Agreement's objectives:



<input type="radio"/>	Reduce greenhouse gas emissions in the EU by 80% by 2050 compared to 1990 levels
<input type="radio"/>	Reduce greenhouse gas emissions in the EU more, within the range of 80 to 95% by 2050 compared to 1990 levels
<input checked="" type="radio"/>	Achieve already a balance between emissions and removals in the EU by 2050

In your opinion, what are the biggest opportunities and challenges?
(1000 characters)

To meet the Paris Agreement's objectives, the EU must fully engage in the energy transition, which entails opportunities and challenges:

- The energy system (but also transport, gas, heating and cooling sectors) will have to integrate significantly higher shares of variable renewables which raises challenges due to the need to maintain system stability, security, and efficiency in a cost effective way. Building up the necessary infrastructure to successfully increase the share of renewables in transport will be essential.*
- New flexibility solutions such as energy storage will have to be deployed to adapt to these changes. This can be a big opportunity for Europe as the storage sector can enhance competitiveness, innovation, and job creation.*
- However, if the EU acts too slowly and does not create a regulatory framework that incentivises the deployment of storage and other flexibility options, Europe risks falling behind global competitors.*

b. Consumers

Next to the deployment of available and forthcoming technologies, when looking at the long term, consumer choices also have a key role in achieving the decarbonisation of our economy. Please fill in this section based on your habits if you are an individual or, if you are from an organisation, considering the organisation practice.

In your opinion, where do you expect the largest changes to happen in your daily life in order to meet the climate change challenge?



<input type="radio"/>	Housing
<input checked="" type="radio"/>	Mobility
<input type="radio"/>	Food
<input type="radio"/>	Consumer goods and services

Housing and offices

Energy consumption:

To which extent would you support the following options that allow reducing the energy consumption and related CO₂ emissions in buildings?

Improving further the energy performance (insulation, triple glazing, etc.) of your building?

<input type="radio"/>	Yes, I already have done it
<input type="radio"/>	Yes, as a priority
<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, I rent
<input type="radio"/>	No, too expensive
<input type="radio"/>	No, other reason
<input checked="" type="radio"/>	No opinion / I do not know



If other, please specify:

Text of 3 to 200 characters will be accepted

Installing heating and water boilers that run on renewables?

<input type="radio"/>	Yes, I already have done it
<input checked="" type="radio"/>	Yes, as a priority
<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, I rent
<input type="radio"/>	No, too expensive
<input type="radio"/>	No, other reason
<input type="radio"/>	No opinion / I do not know

If other, please specify:

Text of 3 to 200 characters will be accepted

Installing heating and cooling equipment and use electric appliances with the best energy performance label?

<input type="radio"/>	Yes, I already have done it
<input checked="" type="radio"/>	Yes, as a priority



<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, I rent
<input type="radio"/>	No, too expensive
<input type="radio"/>	No, other reason
<input type="radio"/>	No opinion / I do not know

If other, please specify:

Text of 3 to 200 characters will be accepted

Different types of energy storage technologies, e.g. thermal and electrochemical, are cost-effective and can allow buildings to store self-generated electricity or to provide flexibility to the grid when needed, especially when coupled with smart digital solutions.

Buying carbon free electricity or generating your own renewable electricity?

<input type="radio"/>	Yes, I already have done it
<input checked="" type="radio"/>	Yes, as a priority
<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, I rent
<input type="radio"/>	No, too expensive
<input type="radio"/>	No, other reason



<input type="radio"/>	No opinion / I do not know
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If other, please specify:

Text of 3 to 200 characters will be accepted

<i>Self-consumption however still faces big regulatory challenges at the Member State level. These challenges need to be removed; timely and correct transposition of EU legislation is necessary.</i>
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Having a smart meter and consuming electricity mostly when prices are low?

<input type="radio"/>	Yes, I already have done it
<input checked="" type="radio"/>	Yes, as a priority
<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, for privacy concern
<input type="radio"/>	No, I do not want to change my consumption habits
<input type="radio"/>	No, other reason
<input type="radio"/>	No opinion / I do not know

If other, please specify:

Text of 3 to 200 characters will be accepted

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[EASE has removed the next section with questions on domestic waste, as we feel these are not pertinent to EASE]



Mobility

To which extent would you support the following options that allow reducing the energy consumption and related CO₂ emissions?

Buying a vehicle that does not run on petrol or diesel (for instance an electric car)?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	Yes, but only if not more expensive than conventional petrol or diesel cars
<input type="radio"/>	Yes, but only if sufficient refuelling infrastructure is available
<input type="radio"/>	No

Considering using car sharing services?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	Yes, but only if an easy to use and affordable service is in place
<input type="radio"/>	No

For short trips, avoiding private car and rather using public transport?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	Yes but only if an accessible and regular service is in place
<input type="radio"/>	No, because they are too slow
<input type="radio"/>	No, because it is too expensive



<input type="radio"/>	No
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For short trips, avoiding private car and rather using (electric) bike or other active mobility modes?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	Yes, but only if proper bike lanes are in place
<input type="radio"/>	No

For longer distance, avoiding flights or car whenever an alternative is available?

<input type="radio"/>	Yes
<input type="radio"/>	Yes, provided a convenient alternative is in place
<input type="radio"/>	No, too slow
<input type="radio"/>	No, too expensive
<input checked="" type="radio"/>	No, other reason

If other, please specify:

Text of 3 to 200 characters will be accepted

Electric vehicles and vehicles using alternative fuels will help to reduce not only CO₂ emissions but also other major pollutants; however, recharging / refuelling infrastructure and equivalent deployment of renewable energies must go hand in hand with deployment of those mobility alternatives.

Do you think better urban planning would reduce the use of private cars and reduce congestion in the urban areas?



<input type="radio"/>	Yes
<input type="radio"/>	Yes, if combined with better public transport
<input type="radio"/>	Yes, but difficult to put in place
<input type="radio"/>	No

Do you think using more IT tools such as tele-working or video-conferencing could reduce mobility needs?

<input type="radio"/>	Yes
<input type="radio"/>	Yes, to some extent
<input type="radio"/>	No, as difficult to put in place
<input type="radio"/>	No

[EASE has removed the next sections with questions on food and consumer goods and services, as we feel these are not pertinent to EASE]

c. Your work and your economic sector

Employment and socially fair transition

In the coming decades, the transition to a low carbon economy will impact even more how we work and how we produce goods and services. Which statements below correspond in your opinion to the impact of climate change and the low carbon transition in your working environment?

Do you expect your company to create or reduce jobs due to the low-carbon transition?



<input checked="" type="radio"/>	Create
<input type="radio"/>	Reduce
<input type="radio"/>	No opinion / I do not know

What could affect your job most in the future?

<input checked="" type="radio"/>	The low carbon transition
<input type="radio"/>	Digitalisation
<input type="radio"/>	Impact of globalisation
<input type="radio"/>	Socio-economic policies (for instance fiscal policy)
<input type="radio"/>	Other

If other, please specify:

Text of 3 to 200 characters will be accepted

Do you think you or the sector you are active in would benefit from training of staff in the context of the energy and low carbon economy transformation?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	Yes, to some extent
<input type="radio"/>	No



<input type="radio"/>	No opinion / I do not know
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The impact of the low carbon transition on your sector

Do you consider the low carbon transition as an opportunity or as a challenge for your sector?

<input checked="" type="radio"/>	An opportunity
<input type="radio"/>	A challenge
<input type="radio"/>	Both
<input type="radio"/>	None
<input type="radio"/>	No opinion / I do not know

Indicate by how much your sector could reduce greenhouse gas emissions by 2050 compared to today?

<input type="radio"/>	It cannot reduce
<input type="radio"/>	Up to half
<input type="radio"/>	By more than half
<input checked="" type="radio"/>	Can decarbonise entirely
<input type="radio"/>	No opinion / I do not know

What would be the preferred route to reduce these emissions in your sector?



<input type="radio"/>	Further electrify
<input type="radio"/>	Use other low carbon fuels, like hydrogen
<input type="radio"/>	Improve to the maximum energy efficiency
<input type="radio"/>	Circular economy, including recycling and re-use
<input type="radio"/>	Development of new products and business concepts
<input checked="" type="radio"/>	Other
<input type="radio"/>	No opinion / I do not know

If other, please specify:

Text of 3 to 200 characters will be accepted

Development and large-scale deployment of energy storage technologies will support greenhouse gas emission reductions through all of the routes outlined above. In addition, sectoral integration would benefit from energy storage.

Will you (or your sector) invest in new low-carbon technologies?

<input checked="" type="radio"/>	Yes, as a priority
<input type="radio"/>	Yes, but not as a priority
<input type="radio"/>	No, it has already invested enough
<input type="radio"/>	No
<input type="radio"/>	No opinion / I do not know



Do you think your sector could be further integrated with others so as to decrease emissions while increasing overall efficiency?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	No
<input type="radio"/>	No opinion / I do not know

If your sector can be further integrated to others, please mention how and to which sector(s):

200 character(s) maximum

<i>Energy storage technologies can support sectoral integration: linking electricity with mobility, heating and cooling, and gas.</i>

Do you think the low carbon transition will lead the EU economy to:

<input checked="" type="radio"/>	Modernise and reinforce its competitiveness
<input type="radio"/>	Modernise, and reinforce its competitiveness, but only if non-EU countries and regions also engage in the transition towards a low carbon economy
<input type="radio"/>	Lose competitiveness
<input type="radio"/>	No opinion / I do not know

Do you think the low carbon transition can help the EU industry modernise and grow?



<input type="radio"/>	Yes
<input type="radio"/>	Yes, but only with public support
<input type="radio"/>	Yes, but only if non-EU countries and regions also engage in the transition towards a low carbon economy
<input type="radio"/>	No
<input checked="" type="radio"/>	No opinion / I do not know

How can opportunities and challenges (in particular related to carbon intensive sectors or regions) be addressed? What key economic transformations should the EU pursue to achieve a low carbon and resilient economy?

1000 character(s) maximum

Electrification of currently carbon-intensive sectors will play a key role in the energy transition and should be pursued by public policy. Research, development, demonstration, and deployment of technologies such as energy storage that are vital to the energy transition should be supported by European R&D funding. Investing in energy storage could support EU competitiveness and decarbonisation. Storage can play an important role in decarbonising the heating & cooling sector and transport. For example, 2nd life batteries could make EV technology more sustainable by alleviating environmental concerns over the battery lifecycle and by facilitating EV rollout (e.g. vehicle to grid integration can increase the electricity system's flexibility and reduce the cost of integrating further renewables; also battery stationary storage integrated to ultra-fast charging stations can reduce their operating costs and foster their deployment). Power-to-X can support decarbonisation of transport and other industrial activities, improving overall system efficiency.

Energy

The energy system today is responsible for ca. 75% of the EU's greenhouse gases emissions and undergoes a rapid transition due to e.g. cost reduction of renewables,



improvements of energy–efficiency and rapid development of new technologies (e.g. batteries) driven i.a. by policies put forward by the EU and its Member States. Accelerating this change will play a central role in the transition of our economy towards a carbon–neutral economy.

In the following table listing different energy technologies, please rank each option in the table below from 1 (important) to 5 (not important) on what role you think they will play in the clean energy transition (not all options need to be ranked)?

	1	2	3	4	5
Energy efficiency reducing the need to produce energy	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Renewable energy from wind, solar or hydro	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other forms of renewable energy, like geothermal, wave or tidal	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nuclear energy	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fossil fuels with Carbon Capture and Sequestration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Solid biomass for heat and electricity production	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advanced Liquid Biofuels	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biogas from agricultural and domestic waste	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electricity storage (e.g. batteries)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hydrogen (produced in a carbon–neutral manner)	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



E-fuels derived from hydrogen	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If other, please specify:

Text of 3 to 200 characters will be accepted

All types of storage – not only electricity storage – will play a vital role in the energy transition. Each storage technology may be suited to a particular location and/or set of applications, so it is an enormous advantage to have a variety of different storage technologies available.

What are the biggest opportunities, including for the wider economy? What are the biggest challenges, including as regards public acceptance or the availability of land and natural resources, related to these future developments?

2000 character(s) maximum



In the future energy system characterised by very high shares of variable renewables and electrification of heating, cooling, and transport, flexible and cross-sectoral energy solutions such as energy storage will be developed and deployed to ensure a stable, secure, and efficient operation of the energy system. This will boost economic growth and create a significant amount of jobs.

Small-scale energy storage technologies enable active consumers to participate fully in electricity markets by optimising self-consumption of solar PV at the residential and community level. This can help increase public acceptance of the energy transition.

Large scale, long duration energy storage facilitates renewable integration by reducing curtailment. This in turn reduces reliance on imported fuels and contributes to security of supply. In addition, long duration energy storage can also be deployed as an alternative to network infrastructure, i.e transmission and distribution lines, increasing network asset utilisation and potentially reducing electricity costs to end consumers.

Europe has the opportunity to become the world leader in clean energy technology, if it dedicates appropriate funding for research, development, and demonstration efforts and ensures a supportive regulatory framework in the near term.

However, the energy transition requires significant levels of investment, the costs of which will be at least partially borne by consumers. Energy storage could mitigate these costs by providing a.o. grid investment deferral: energy storage solves congestion issues and thereby defers transmission or distribution infrastructure upgrades.

There are also significant operational challenges related to the transition to a system based on variable and often decentralised renewables. Storage technologies can provide much-needed flexibility to the system, supporting a secure and efficient operation of the system.

[EASE has removed the next section with questions on the role of forests and land use, as we feel these are not pertinent to EASE]

Education, research and innovation

Considering the long time frame of the strategy, and the inherent magnitude of the decarbonisation transition, the central role of accelerating research and innovation for facilitating this transition will be crucial.



How best could awareness be raised to create the right attitude and values/ mind-sets?

at most 3 choice(s)

<input checked="" type="checkbox"/>	At school through education
<input checked="" type="checkbox"/>	Local and regional campaigning
<input checked="" type="checkbox"/>	National and EU wide campaigning

On which sectors should R&D efforts focus primarily in the coming decade to best support the low carbon transition?

at most 6 choice(s)

<input checked="" type="checkbox"/>	Energy
<input checked="" type="checkbox"/>	Industrial processes
<input checked="" type="checkbox"/>	Transport
<input checked="" type="checkbox"/>	IT
<input type="checkbox"/>	Agriculture
<input type="checkbox"/>	Other field

On which cross-sectoral domains should R&D efforts focus in the coming decades? Is there a particular need for large scale deployment of certain innovative technologies? Is there a different role for authorities and private sector in support R&D and Innovation?

1000 character(s) maximum



Both the private and public sectors should engage in RD&D in order to facilitate the uptake of innovative energy storage technologies. RD&D efforts must focus on:

- Studying system integration, focusing on how gas, electricity, heat, and transport infrastructure (e.g. refuelling infrastructure) can be combined and complemented with storage of gas, electricity, heat, and/or fuels*
- Funding new large-scale demonstration projects focused on the grid integration of relatively mature storage technologies, including projects with hybrid storage systems and long-duration storage technologies (e.g. power-to-x)*
- Supporting materials and equipment research to improve performance of crucial components*
- Researching the monetisation of storage services and the development of flexibility markets, particularly at the distribution grid level*
- Pursuing a coordinated RD&D policy effort for energy storage at EU level and providing more funding for storage technologies through available EU funds*

Financing

In many cases, the low carbon economy and energy transition needs high upfront investments with subsequent reductions in operating and fuel costs. In addition, this transition as well as climate change itself will most likely affect the value of existing investments and assets of companies. Finally, to achieve the transition efficiently, the viability and profitability of investments need to be ensured on the long-term. Most of these investments will have to be funded via private finance.

Will the sector that you are active in require significant additional investment in the context of a transition to a low carbon economy?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	No
<input type="radio"/>	No opinion / I do not know



For the sector that you are active in, is there a financing gap for making the transition to a low carbon economy?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	No
<input type="radio"/>	No opinion / I do not know

Should public sector be more involved in ensuring adequate financing for the low carbon transition?

<input type="radio"/>	Yes, through direct investment
<input checked="" type="radio"/>	Yes, through measures ensuring more low cost finance for sustainable investments
<input type="radio"/>	No because of the risk of prompting inefficient investment leading to stranded assets
<input type="radio"/>	No because of crowding effects on other sectors
<input type="radio"/>	No opinion / I do not know

Would you consider that, in your sector, companies are sufficiently transparent about the financial risks they face due to climate change and the low carbon economy and energy transition?

<input checked="" type="radio"/>	Yes
<input type="radio"/>	No



<input checked="" type="radio"/>	No opinion / I do not know
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Meta trends

Do you think the following trends are important to reduce greenhouse gas emissions.

Economic transition towards a more circular economy?

<input checked="" type="radio"/>	Positive
<input type="radio"/>	Negative
<input type="radio"/>	Neutral

Digitalisation, including robotisation and artificial intelligence?

<input checked="" type="radio"/>	Positive
<input type="radio"/>	Negative
<input type="radio"/>	Neutral

Shared economy?

<input type="radio"/>	Positive
<input type="radio"/>	Negative
<input checked="" type="radio"/>	Neutral

Further interdependency of sectors across borders through globalisation?



<input checked="" type="radio"/>	Positive
<input type="radio"/>	Negative
<input type="radio"/>	Neutral

Actors

Local authorities such as cities and local communities, as well as other actors such as civil society and the private sector, can play an important role in achieving the energy transformation, reducing greenhouse gas emissions and adapting to climate change. Indeed thousands of cities, companies and citizens' organisations are implementing the low carbon economy and energy transition through projects covering energy, transport, food and waste management, often achieving important local co-benefits related to economic development, health and wellbeing.

Which of these non-state actors do you think will impact most your or your sector's contribution to delivering the EU's ambition to become a low carbon economy?

<input type="radio"/>	Regional government
<input type="radio"/>	Towns and cities
<input checked="" type="radio"/>	Businesses
<input type="radio"/>	Philanthropies
<input type="radio"/>	Civil society (NGOs,...)
<input type="radio"/>	Religious groups



Do you have an example that you think is of particular importance to underline the role of such local and private sector actors in supporting the low carbon economy and energy transition?

1000 character(s) maximum

Adaptation

The adverse effects of climate change will increase in the coming decades unless strong mitigation policies are implemented globally. In your place of living, which of the following actions do you think will be necessary to prepare for the likely effects of climate change? Please rank each option in the table below from 1 (important) to 5 (not important) to indicate which, in your place of living, you think will be necessary to prepare for the likely effects of climate change (not all options need to be ranked).

	1	2	3	4	5
Scientific research on the local effects of climate change in the place where you live	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinforcement of infrastructure (transport, energy, communication networks) to withstand natural disasters	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparation for floods (water retention, dykes, designated flood plains/areas, restriction of activities in areas at flood risks, floating houses etc.)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adaptation of agriculture to the changing climate (e.g. water efficient irrigation, selecting different crops)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Heat wave action plans	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>



Increase of green areas in towns to cope with heatwaves / floods	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouragement of water saving and reuse	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forest fire prevention (e.g. awareness raising campaigns, forest management...)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinforcement and protection of the seacoast	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Early warning systems for natural disasters (heatwaves, floods, forest fires...)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication to the public about the need to adapt to climate change	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved insurance products against damage from the effects of climate change	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better understanding of the security effects of climate change on the EU (e.g. flows of migrants, global water and food scarcity, agricultural trade)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which adaptation measures are of particular importance for your sector and why?

1 000 character(s) maximum

Energy storage, particularly longer duration storage, can enhance the resilience of electricity grids, allowing them to better withstand the adverse effects of climate change (e.g. storms, flooding) and/or to recover faster from severe climate events. For example, consumers (residential or commercial & industrial) with a storage system could use this as a source of back-up power in case of failure of the electric grid.



d. Specific sectoral questions

These questions are focused on sector specific greenhouse gas reduction options, and as such are primarily directed to sectoral stakeholders.

Reducing industrial greenhouse emissions:

Industry has a diverse set of greenhouse gas emissions sources, the majority are linked to energy consumption but also a significant amount of emissions comes from chemical processes, for instance in the steel, cement and chemical sectors.

Industry has a number of mitigation options to reduce its greenhouse gas emissions. These typically involve improved efficiency (e.g. using more efficient products and technologies, reusing waste heat, etc.) and fuel substitution (e.g. electrification of its processes). But it also includes feedstock substitution, be it with bio-material or by employing Carbon Capture and Utilisation (CCU) technologies that see CO₂ emissions being re-used in other production processes. These technologies also often benefit from further integration of energy and industrial sectors.

Please indicate for which sector you see any of the above or other mitigation options of particular importance. Please indicate what your view is in terms of mitigation potential, economic potential and technology readiness. Assess each option as High, Medium, Low or Zero for each criterion and indicate in which year you think the technology would be ready for large scale deployment.

	Industrial sector	Technology Option	Mitigation potential	Economic viability	Technology Readiness	Year of large-scale deployment
1	Heating and cooling industry	Thermal storage (e.g. heat pumps), Liquid Air Energy Storage	High	Medium	Medium	
2	Chemical industry	Chemical energy storage (Power-to-x technologies)	High	High	Medium	



3	Renewables industry	All storage technologies, including electrochemical storage (batteries), mechanical energy storage (liquid air energy storage, flywheels, pumped hydro storage), power-to-X	High	High	Medium-high (depending on the technology)
4	Building sector (cranes)	Flywheels			
5	All industrial sectors (e.g. food industry)	Thermal energy storage to support the use of waste heat; Liquid air energy storage, power-to-X	High	High	Medium
6					
7					

Reducing greenhouse emissions from transport:

Transport has a number of options to reduce its greenhouse gas emissions. While low- or zero-emission technologies are already successfully deployed for parts of the transport sector (e.g. cars and vans), the technological development is in earlier stages of development or deployment for other parts of the transport sector (e.g. long-haul trucks, aviation or maritime).



Please indicate for which part of the transport sector you see particular mitigation options and their importance. Please indicate what your view is in terms of mitigation potential, economic potential and technology readiness. Assess each option as High, Medium, Low or Zero for each criterion and indicate in which year you think the technology would be ready for large scale deployment.

	Transport sector	Technology option	Mitigation potential	Economic viability	Technology Readiness	Year of large-scale deployment
1	Light-duty vehicles (passenger cars and vans)	Batteries	High	High	High	
2	Cars, aviation, marine sector, trucks	Power-to-x technologies (e.g. power-to-hydrogen; power-to-methanol), synthetic fuels	High	Medium	Medium	
3	Food freight (transport and cooling)	Liquid Energy Storage	Air High	Medium	Medium	
4	Light-duty vehicles, Long-haul trucks, buses	Synthetic fuels like methanol, hydrogen	High	Medium	Low	
5	Long-haul trucks	Batteries	High	Medium	Medium	



6	Buses	Batteries	High	High	High
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In addition, would you please indicate your choice for the following options that allow reducing the energy consumption and related CO₂ emissions?

For freight transport, would you consider switching from road to alternative modes like rail, waterways or coastal shipping?

<input type="radio"/>	Yes
<input type="radio"/>	No, too slow or complicated
<input type="radio"/>	No, too expensive
<input checked="" type="radio"/>	No opinion / I do not know

For first/last mile logistics in urban areas, would you consider switching from road to alternative modes like (electric) cargo bike or similar zero-emission vehicle?

<input checked="" type="radio"/>	Yes, I am already doing it
<input type="radio"/>	Yes, in the future
<input type="radio"/>	No, too slow
<input type="radio"/>	No
<input type="radio"/>	No opinion / I don't know

[EASE has removed the next section with questions on reducing greenhouse gas emissions from agriculture and on the role of CO₂ removal, as we feel these are not pertinent to EASE]



III. Additional comments

If you wish to add further information, comments or suggestions – within the scope of this questionnaire – please feel free to do so here:

1000 characters maximum

EASE members are fully supportive of the EU's efforts to achieve a low-carbon economy. Energy storage deployment can facilitate this transition in many ways, e.g. by:

- *Enabling higher shares of RES in the energy mix*
- *Supporting electrification of the heating, cooling, and transport sectors*
- *Supporting the secure, cost-effective, and efficient operation of the grid by providing key services at all levels of the energy system*
- *Extending the lifetime of existing grid assets*
- *Allowing active consumers to optimise self-consumption or provision of services to the grid*
- *Ensuring security of supply: avoiding PV and wind curtailment avoids importing fuels.*
- *Enabling a faster energy transition on islands and in isolated areas*

We hope that the long-term EU greenhouse gas emissions reductions strategy will take into account the vital role of storage.

In addition, you could also upload a document proving further information, comments or suggestions:

[EASE will attach the [EASE-EERA Energy Storage Roadmap](#)]



About EASE

The European Association for Storage of Energy (EASE) is the voice of the energy storage community, actively promoting the use of energy storage in Europe and worldwide. It supports the deployment of energy storage as an indispensable instrument within the framework of the European energy and climate policy to deliver services to, and improve the flexibility of, the European energy system. EASE seeks to build a European platform for sharing and disseminating energy storage-related information and supports the transition towards a sustainable, flexible and stable energy system in Europe.

For more information please visit www.ease-storage.eu

Disclaimer

This response was elaborated by EASE and reflects a consolidated view of its members from an energy storage point of view. Individual EASE members may adopt different positions on certain topics from their corporate standpoint.

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