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Comments from Danish Energy to the public consultation for the EU climate ambition for 2030

Danish Energy welcomes this opportunity to elaborate on the point of views expressed in the 2030 Climate target questionnaire. We support the Commissions initiative to increase the 2030 Climate target and the related in-depth analysis of its implications.

Increase the 2030 emissions reduction target to at least 55 %

As made clear in the questionnaire, Danish Energy supports increasing the 2030 climate target to *at least 55 %*, as this is the absolute minimum level acceptable in order to be in compliant with the Paris Agreement. A 55 % climate target in 2030 would put Europe on a linear reduction pathway towards climate-neutrality in 2050. It is widely recognized that cutting emissions becomes increasingly costly and technically challenging the closer you reach 100 % climate-neutrality. Delaying climate action increases the risk of making the inevitable transition more costly. In addition, postponing build-out of clean technologies will stall the development of RES as price reductions are highly driven by the volume of demand, which in return makes reaching climate targets even more difficult.

The world is currently on course for a 3-5-degree Celsius warming. To get on the right path with a credible contribution to the possibility of reaching the 1.5°C goal declared in the Paris agreement, the way the EU chooses to act now is paramount. Therefore, we strongly advocate that the Impact Assessment outlines what the trajectory implies for 2025 and includes a 2025 reduction target.

Monitoring and inspection of trajectory sooner than 2030

The proposed adoption of a European Climate Law empowers the Commission to adopt delegated acts to set out a trajectory for the EU for achieving climate-neutrality by 2050. Every five years, the Commission will assess the collective progress made by the Member States and review the trajectory to ensure coherence with the Paris Agreement. According to the proposed Climate Law the trajectory shall start from the Union's 2030 target.

Once again, we wish to stress the importance of early action. Poor performance from 2020 to 2030 risks putting EU on an irreversible track incompatible with climate neutrality by 2050.

Therefore, we strongly recommend that the Commission monitors the Member States' joint progress and reviews the trajectory immediately after the adoption of the 2030 climate target.

Technology cost assumptions

As done several times in the past, we once again highlight our concerns regarding the Commission's cost assumptions for a number of renewable energy sources, which up to this point are still too high. It is crucial that the Commission bases their in-depth analyzes and modeling of future energy systems on up-to-date and accurate technology assumptions to avoid making future climate objects appear *more expensive than they are*.

In the last decade, we have seen a significant reduction in the costs related to renewables such as wind and solar. In order to capture these cost reductions, the commission should revisit their cost assumptions for renewable energy sources, including photovoltaics, offshore wind and onshore wind. This could be done by consulting the Danish Energy Agency's technology catalogue¹ for an assessment of current costs for renewable energy and short- and long-term forecast of cost developments.

Once again, we would like to put forward the following table, comparing the technology assumptions used by the European Commission with the cost assumptions of the Danish Energy Agency.

Cost assumptions offshore wind:

Variable	EU suggestion for CAPEX (incl. cable to shore) (2020/2030) (€/kW/year)	Danish Energy Agency Suggestion (€/kW/year)	Source/comment
Water-depth <30 m	2234/1815	1750/1660	Source: " Technology Data - Generation of Electricity and District Heating ", Energinet 2016, p. 245-246
Water depth 30 – 60 m	2789/2058	2130/1930	
Water depth > 60 m	3215/2464		
	EU suggestion for fixed annual OPEX (2020/2030) (€/kW/year)		
Water-depth <30 m	33/27	36/34	Source: " Technology Data - Generation of Electricity and District Heating ", Energinet 2016, p. 245-246
Water depth 30 – 60 m	42/31	40/36	
Water depth > 60 m	48/37		

¹https://ens.dk/sites/ens.dk/files/Analyser/technology_data_catalogue_for_el_and_dh.pdf

Onshore wind: pp. 204-227

Offshore wind: pp. 228-248

Photovoltaics: pp. 249-273

Heat pumps: pp. 278-313

	EU suggestion for variable OPEX (2020/2030) (€/kW/year)		
for water-depth <30 m	0,39/0,39	0,26/0,3	Source: " Technology Data - Generation of Electricity and District Heating ", Energinet 2016, p. 245-246
Water depth 30 – 60 m	0,39/0,39	0,3/0,2	
Water depth > 60 m	0,39/0,39		
	EU suggestion for capacity factors		
Water-depth <30 m	0,28/0,38	0,51/0,53	Source: " Technology Data - Generation of Electricity and District Heating ", Energinet 2016, p. 245-246
Water depth 30 – 60 m	0,36/0,38	0,51/0,53	
Water depth > 60 m	0,47/0,47	0,51/0,53	

Energy system and sector integration and electrification

The Commission's climate analysis from 2018 shows that electrification is the most important single driver for decarbonization of the energy system, both in final energy demand and in the supply of alternative fuels. Future electricity will particularly come from wind and solar². Also, a study made by Eurelectric same year shows that direct electrification needs to supply close to 60% of final energy consumption in the total EU economy for the EU to reach 95% energy emissions reduction by 2050³.

The wide-ranging electrification of our societies will provide significant energy savings, as electricity is more efficient than fossil fuels. Replacing fossil fuel-based heating systems with electric heat pumps will provide energy savings up to 30% to 40 %, while electric vehicles (EVs) only consume 25% of the energy conventional vehicles consume. Danish Energy supports ambitious energy efficiency goals and believe an increased climate target and increased RES-target through electrification will deliver substantially increased energy efficiency by 2030.

As part of the impact assessment, we urge the Commission to consider an electrification strategy that addresses the current barriers to electrification, e.g. lack of EV charging infrastructure. This is pivotal in order to reach the 55 % climate target by 2030.

Closely related to this, improved energy system and sector integration is crucial in order to electrify and decarbonise Europe in the most cost-efficient way. We therefore highly welcome the Commission's initiative to develop an Energy system integration strategy.

In brief, Danish Energy believes the following are key elements in an energy system integration strategy.

² https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf (page 88)

³ <https://cdn.eurelectric.org/media/3457/decarbonisation-pathways-h-5A25D8D1.pdf>

- Energy efficiency first must remain the leading principle, and thus direct electrification of sectors should be priority, e.g. heat pumps in heating systems, electric vehicles in road transport, high-temperature heat pumps in industrial processes etc.
- For the hard-to-abate sectors where direct electrification currently occurs infeasible, indirect electrification converting electricity into storable E-fuels and green gasses through power-to-X-processes will be key. We welcome the Commission's initiative to develop an EU Hydrogen strategy, which should address how to bring electrolysis to scale and lower costs, dedicated hydrogen pipelines and put an EU definition of renewable hydrogen in place in order to promote investments. Please read the Danish Energy's contribution to the EU's hydrogen strategy Roadmap⁴ for more details on what this strategy must entail.
- Flexibility – e.g. energy storage, demand side response, flexible production of power-to-gas products or power-to-liquids – is crucial to integrate increased amount of renewable electricity in the energy system. Digitalisation will pave the way for stronger utilization of data in managing utilities and identifying where sector integration could enhance flexibility and enable more cost-effective solutions, e.g. through price signals in the energy system.
- Improve national and trans-European electricity infrastructure as well as infrastructure for green/sustainable hydrogen and invest in interconnectors to enhance cross-border trade in the EU's internal energy market.

For elaboration on the abovementioned points, we refer to Danish Energy's direct contribution guided by questions defined by the commission⁵ and the Danish Energy submission to the roadmap for an EU Smart Sector Integration Strategy⁶.

Increase renewable energy target

As mentioned in the previous section, electrification is our main tool in decarbonising Europe and reaching the 2030 and 2050 climate targets. On top of direct electrification, indirect electrification through power-to-X is going to play a crucial role in decarbonising the hard-to-abate sectors. According to the Commission's long-term net-zero scenario, hydrogen and derived fuels represent up to 23% of the European final energy consumption in 2050⁷. Together, this will create a significant growth in the demand for renewables, and in order to ensure supply of green energy to European citizens and industries, it is pivotal Europe's renewable energy capacity increases. Especially solar, offshore and onshore wind are predicted to be at the centre of Europe's future energy mix.

Danish Energy support increasing the RES-target to at least 40 % in 2030. The current 2030 climate & energy framework with a target of 32% renewable energy by 2030 translates into a

⁴ https://www.danskenergi.dk/sites/danskenergi.dk/files/media/dokumenter/2020-06/Horing_contribution_to_EU_hydrogen_strategy_roadmap.pdf

⁵ https://www.ienergi.dk/sites/ienergi.dk/files/media/dokumenter/2020-05/H%C3%B8ringssvar%20til%20EU_Sector%20Integration%20-%20Comments%20from%20Danish%20Energy.pdf

⁶ https://www.danskenergi.dk/sites/danskenergi.dk/files/media/dokumenter/2020-06/Comments_Road_Map_for_EU_Strategy_on_Energy_Sector_Integration.pdf

⁷ https://ec.europa.eu/jrc/sites/jrcsh/files/final_insights_into_hydrogen_use_public_version.pdf

40-45% emissions reduction. Increasing the 2030 climate target to 55% thus implies a significantly higher RES-target for 2030.

Increasing the target should be accompanied by a thorough assessment of target design and implications. Currently, the main tool for reaching the RES-target are the National Energy and Climate Plans (NECPs). However, as identified in the Commission's evaluation, there is still a gap for the EU28 under current plans, where the share of renewables would reach between 30.4% and 31.9% in 2030⁸.

The impact assessment of the 2030 climate target should examine options for better implementation and monitoring of national efforts and even for introducing national RES targets. Furthermore, we advocate that the impact assessment outlines the necessary annual RES expansion until 2050. This will send strong signals to investors and thus incentives green investments.

Implement the clean energy Package and finalize the energy union

The internal energy market is the cornerstone Europe's green transition. The Commission should aim at creating a fully integrated internal energy market where cross-border energy trade is 100 % free. It is essential that energy flows freely across borders through adequate infrastructure and without regulatory barriers in order to ensure sufficient supply of clean energy in all Member States. We have come a long way with the energy union, but it is not complete.

In terms of implementing the Clean Energy Package (CEP) and further developing the EU's internal energy market, The TEN-E regulation impact assessment must pay attention to the implementation of Article 32 of the Electricity Directive stating that:

Member States shall provide the necessary regulatory framework to allow and provide incentives to distribution system operators to procure flexibility services, including congestion management in their areas, in order to improve efficiencies in the operation and development of the distribution system.

With the CEP in place by 1. January 2021, DSOs have a framework at European level to use flexibility and optimise network investment decisions, as well as to handle more efficiently the challenge of facilitating the integration of renewables on the electricity networks. DSOs act as neutral market facilitators, with the goal of decreasing costs for the network users, while ensuring secure and stable electricity supply. In this context, a proper implementation of Article 32 of the Electricity Directive will help reap all potential benefits flexibility can provide.

Attention needs to be directed to the national incentive schemes for the procurement of flexibility by DSOs to ensure that flexibility is activated efficiently as an alternative to traditional grid reinforcement throughout the EU.

Prepare the grid for the future

⁸ https://ec.europa.eu/energy/sites/ener/files/documents/recommandation_en.pdf

In light of the increased 2030 and 2050 climate targets, the impact assessment should evaluate energy infrastructure investment needs. Following the increase of electricity flow, build-out of European transmission and distribution grids is pivotal.

To deliver on the target of climate neutrality, offshore wind capacity alone is set to increase from 20 GW in 2019 to 400-450 GW by 2050. The increasing role of renewables in our energy system also implies that parts of future energy production will be located away from consumers, as large portions of sustainable electricity production will take place in the North Sea. Likewise, optimal locations for solar are mainly in the south of Europe. Transporting these massive amounts of electricity to consumption centres across Europe will require comprehensive grid expansions, and the revision of the TEN-E regulation should address this. We refer to the Danish Energy submission to the consultation on the revision of guidelines for trans-European energy infrastructure⁹ for our recommendations on what a revision of the TEN-E regulation must focus on in order to live up to the 2050 climate-neutrality target and increased 2030 emissions reduction target.

Due to electrification and the increased RES connected to distribution grids, preparation of distribution grids for the future should likewise be a main focus. Successful management of future distribution of electricity relies on distribution grid expansion and increased use of flexibility.

Inadequate infrastructure is currently a barrier to the necessary build-out of RES in Europe and clarifying investment needs will help guide investments towards clean energy infrastructure.

Strengthen the EU ETS system

Carbon emissions trading within the EU ETS is the most effective way to reach climate objectives. The ETS-system should remain Europe's primary tool in decarbonising. To secure an efficient EU ETS, we suggest the upcoming revision of the ETS Directive includes:

- *Alignment of the Linear Reduction Factor (LRF) with EU climate objects.* The current LRF is based on the 40 % reduction target in 2030. It is apparent that an increased 2030 climate target means a corresponding upwards adjustment of the LRF, supporting EU Climate targets.
- *Maintaining the 24 % intake rate of the Market Stability Reserve (MSR).* The MSR should be in line with EU climate targets. To avoid the risk of oversupply of allowances, we strongly advocate maintaining the 24 % intake rate after 2023 instead of reducing it to 12 %.
- *Introducing a carbon price floor (CPF).* To support low-carbon investments through the ETS price signal, the introduction of an ETS CPF is recommended. This will offer certainty to the market and protect investors against sudden plummeting carbon prices from external shocks. A study made by several European companies shows that a CPF will significantly reduce emissions and drive greater coal to gas switching¹⁰.

⁹ https://www.danskeenergi.dk/sites/danskeenergi.dk/files/media/dokumenter/2020-06/Horing_TEN-E_Roadmap.pdf

¹⁰ <https://orsted.com/-/media/WWW/Docs/Corp/COM/News/FTI-CL-Energy-CPF-Executive-Summary.pdf>

- *Widen the scope of the ETS.* There are still some sectors where the EU is struggling to bring down emissions, e.g. the transport sector. ETS is the most efficient way to support decarbonization and broadening the scope of the ETS will ensure a more rapid green transition.
- *Reduce or remove the share of free allocation.* As an example, the aviation sector received an estimated 32.3 million tonnes of free allowances in 2019. Even though Intereuropean flights are covered by the EU ETS, aviation emissions grew by an estimated 1.5% in 2019 according to Transport & Environment. Removing airlines' free allowances is needed to bring down aviation emissions, but to really tackle aviation's fast-growing contribution to climate change, the massive fossil fuel subsidy must be removed.

The above-mentioned suggestions will maintain a credible market-based solution to emissions reduction and send strong economic signals which will support a rapid decarbonization in line with the Paris Agreement.

Align EU legislation and policies with EU climate objectives

To ensure coherence in EU's overall climate and energy framework, it is important to align EU legislation and policies with climate objectives. As stated in section 6, the EU ETS is our most effective tool for emissions reduction, and a review of the EU ETS Directive is necessary in order to maintain its pivotal function. Parallel policies such as energy efficiency, coal phase out, decarbonization of gas and RES support schemes create abatement outside the ETS-system and an update of these policies is equally important.

Many directives deserve inspection, e.g. the Energy Taxation Directive (ETD). A revision of the ETD should reflect the important role of electricity in decarbonizing Europe. The current design of the ETD fails to ensure a favorable treatment for low carbon energy technologies with lower externalities and does not reflect the important role electrification plays in driving Europe towards climate-neutrality. We refer to the Danish Energy submission to the consultation "Revision of the Energy Taxation Directive" of 1 April¹¹ for an elaborated view on the ETD revision.

Yours sincerely
Dansk Energi

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¹¹ https://www.danskeenergi.dk/sites/danskeenergi.dk/files/media/dokumenter/2020-06/Horing_ETD_review_Comments.pdf