

10.02.21

Renewable Energy Directive Consultation Response Summary



CURRENT

Enabling Network Technology
throughout Europe



CurrENT Key Points

- REDII requires modification to match increased ambitions set out in the Green New Deal and the Climate Target Plan. The targets set must be challenging, reflect the 55 % GHG emission reduction by 2030 target and the commitment to climate neutrality by 2050.
- The push for electrification must gain pace as it is vital in achieving energy efficiency goals and uphold the Efficiency First Principle. The energy efficiency gains through adopting electric alternatives are huge and will vastly reduce the gross energy demand for Europe.
- Establishing a comprehensive EU wide Renewable Energy Integration Strategy (REIS) 2050 which targets the efficient and effective development of an EU wide renewable electricity system.
- Increasing the renewables targets in every sector, from increasing the share of electric vehicles in transport, to encouraging the use of renewable based heating and cooling in buildings.

CurrENT Response Summary

General Questions on Renewable Energy Directive (REDII)

Current believes that with the release of the Green New Deal, and the Climate Target Plan that Europe needs to be more ambitious in modifying REDII to reflect the increasing ambition to address climate change. These targets should be more prescriptive to ensure that targets set are reached in a more planned manner.

The overall target of 32% Renewable Energy Share (RES) should be increased substantially for 2030. The targets set must be challenging, reflect the 55 % GHG emission reduction by 2030 target and the commitment to climate neutrality by 2050. It will require more action and cross-border cooperation from member states – not least when it comes to infrastructure investments and long-term planning - to reach these more ambitious targets. Decarbonising existing demand from the electricity system should be of high priority and is a precondition for decarbonising other sectors of energy demand.

REDII should encourage deeper coordination and cooperation between member states in achieving an updated joint target for Europe. Europe has a vast amount of renewable resources available and should be targeting developing the most efficient and cost effective transition by developing and utilising these resources for Europe as a whole, and not at a national level.

The development of market design measures implemented at an EU level would more easily facilitate the transition to a renewables-based energy system. The harmonisation of regulation would integrate well with a highly interconnected European electricity system. Harmonisation will improve the efficiency of delivering trans-national projects and reduce the complexity and cost to the consumer. These regulations would also help countries who are at the early stages of renewables integration and adopt regulation developed from the experiences of the more renewables developed countries.

A key question posed for this consultation reflects on scope for reducing regulatory burdens, including administrative burdens. CurrENT believes that there should always be consideration put towards



improving regulatory and administrative barriers to maintain efficient and effective processes. A project developer would prefer that the grid development risk be with the grid owner/controller, but this requires the grid controller to make a decision; They can manage this risk through developing anticipatory grid, or through passing on the cost of curtailment to the customer.

To date, passing on the cost of curtailment to the customer worked well as there was a relatively low amount of energy curtailed in the system due to the low levels of renewable energy, though with the increasing share of renewable energy in the electricity grid today, the amount of curtailed energy is increasing. This approach is not sustainable. In some Member States, curtailment already accounts for up to 10% of energy in countries with high levels of wind.

The development of anticipatory grid infrastructure is the superior approach for the future but requires good early stage planning and coordination at a higher level than on a provincial level, or even a national level. It will require funding that may not show benefit for the early projects on a project-by-project basis but on the basis that within the context of a wider European scheme or plan gives the most economically advantageous outcome for 2050. To do this requires significant regulatory reform as most regulations are directed to minimise the cost to consumers within a 5-year price control horizon.

The cost of such grids can be reduced by introducing best practice to network development -contestable build of all networks, using best available technology, a single European planner/architect and commitment to the Efficiency First Principle of the Energy Union.

Grids have never required mass reform since they began being developed. The replacement of fossil-based generation with renewables, requires optimising existing grids, constructing new grids – not least offshore - and new innovative grids technology, to facilitate the levels of renewables integration required to meet decarbonisation targets. Regulators and TSOs should encourage cooperation with industry in the development of this grid and allow industry to innovate for the future grid.

Integrated Energy System

Electrification is the key to decarbonisation. The energy efficiency gains through adopting electric alternatives are huge and will vastly reduce the gross energy demand for Europe. A larger push to facilitate electric solutions to avoid massive conversion losses is required. More should be done to facilitate the transition to electric road transport with a larger push towards developing the infrastructure required to alleviate any concerns around electric vehicles.

Electric space heating requires further regulation to encourage adoption and retrofit into buildings using fossil-based systems. The coefficient of performance gains of an electric heat pump vs conventional gas boiler is in the range of 300% - 500%.

The push for electrification must gain pace as it is vital in achieving energy efficiency goals and uphold the Efficiency First Principle. The transformation of energy from one carrier to another introduces losses; electricity is the vector for an efficient and effective decarbonisation. Hydrogen-based fuels should primarily be utilised in hard-to-electrify sectors such as in aviation and maritime sectors. Europe needs to



advance towards a more circular energy system with Energy Efficiency First at its core, as recommended by the EU Strategy on Energy System Integration.

This leads to CurrENTs belief that promotion of electrification of energy consumption is most preferable. Our transmission system was built to provide electricity access from primarily fossil-based resources over the past 100 years. We are now experiencing a change where the electricity system is trending towards renewable based generation which is being built in the areas with the highest/best renewable resource. These locations do not always coincide with existing grid which may not be strongest at these points to support the integration of the growing levels of renewable energy.

Europe needs to increase its onshore wind capacity by 5 times, its offshore capacity by 20 times, and its solar by over 5 times. To achieve these volumes in the most efficient and cost-effective manner requires an EU wide strategy which coordinates grid development and supply chain scaleup requirements. Climate change will be experienced by the globe as a whole and not individually as nations. This challenge must be addressed using a joint approach.

Decarbonisation will be more efficiently achieved at an EU level compared to a national approach. A coordinated approach will reduce the environmental impact to grid optimisation and development and result in a more effective and efficient energy system. Further development of hybrid interconnection, meshed grids and innovative technology needs to be encouraged so that Europe can take full advantage of the offshore wind potential available.

Low carbon fuels should not be considered as a solution or part time solution to decarbonisation. Now is the time to invest in an electrified energy system to realise the goal of a 2050 decarbonised energy system that operates as efficiently and effectively as possible while resulting in the lowest cost to the consumer. When it comes to encouraging adoption of hydrogen and other e-fuels, their use should be promoted when its whole value chain is more energy efficient in comparison to alternative energy sources and carriers such as hard to decarbonise sectors or for limited uses where no other alternatives are feasible.

CCS and CCU are not necessary for the transition to decarbonisation. They will potentially play a role in hard to decarbonise sectors such as industry, but this does not require REDII support and fits into a regulatory, infrastructure and planning framework that is completely different from the EU renewables framework. Consequently, the two should be kept separate.

Sector Specific Topics – Renewables in Different Sectors

One of the most important questions being currently being asked is on the importance of regional cooperation in deploying renewables, and how this can be further promoted. CurrENT believes in establishing a comprehensive EU wide Renewable Energy Integration Strategy (REIS) 2050 which targets the efficient and effective development of an EU wide renewable electricity system. More needs to be done to encourage development of electrical infrastructure to facilitate the levels of renewables needed to reach the increased EU GHG target of 55% by 2030 and the set out in EU 2050 carbon neutrality goals and corresponding scenarios.



The Atlantic, North Sea and Baltic Seas all have high offshore wind resource while southern states have high vast solar resources. Europe has a unique opportunity to build out a new complimentary level of electrical infrastructure that can best take advantage of these resources and disperse them continent wide, including to the Central and Eastern European Member States that are less endowed with renewable energy resources.

The importance of an offshore grid is highlighted in the recently published EU Commission “Clean Energy Transition – Technologies and Innovations” report which stated that “to build the offshore energy production, and its connection to onshore consumption, an interconnected grid is needed.” This point was further emphasised by WindEurope who stated "The electricity grid infrastructure in Europe should anticipate major growth in both offshore and onshore wind energy. It requires the expansion of offshore grids and the reinforcements of onshore grids. They should support the development of meshed offshore grids. This will require enhanced cooperation between countries."

Finally, the Florence School of Regulation recently stated its belief that grids require more planning at an EU level: “By its very nature, renewable electricity will be cheaper than zero-carbon hydrogen (which is a vector that stores renewable electricity). In the view of the authors, this gives rise to possibly the most important conclusion from this study. Aside from energy efficiency, the most important and immediate priority for the EU in ensuring a cost-effective decarbonisation of its energy system must therefore be to identify and eliminate infrastructure and other bottlenecks that are likely to constrain the cost-effective production and use of renewable electricity moving forwards.”

Differing regulations, and standards, limit cross-border cooperation. A change in regulations to allow and incentivise trans-national/regional projects should be of high priority. Harmonisation of National regulations and standards at an EU level will improve the efficiency of delivering trans-national projects and reduce the complexity and cost to the consumer.

Current approaches to grid planning are based on near term (next 10 years) plans. Grid planning should look towards a 2050 system and plan accordingly, while including grid technology innovation.

Harmonisation of National regulations and standards at an EU level will improve the efficiency of delivering trans-national projects and reduce the complexity and cost to the consumer. Harmonisation offers a more efficient and effective transition to a decarbonised energy system.

Promote and incentivise adoption of innovative grid technologies. Fostering innovative grid technologies will assist and promote the integration of higher levels of renewables. Energy system operators need to be encouraged and incentivised to adopt these innovative technologies for the future.

Innovation in renewable generation has led renewables to be the cheapest form of electricity but Europe now faces a challenge in integrating the required capacities of wind and solar outlined in “A Clean Planet for All”. REIS 2050 will require looking at future grid architectures while identifying/ allowing the necessary innovation in grid technology. Less obtrusive and environmentally friendly grid technology with the required transfer capacity can unlock the transmission backlog.



Designing tomorrow's grid using today's technology and an incremental approach will result in a grid that is not fit for purpose in addressing the challenge. Europe should facilitate and encourage innovation in grid technology and not limit itself with a premature selection of tech.

REDII may only be considered useful in promoting growth in the offshore if it considers grid development and sets out incentives for innovation in the grid space.

Renewables in Heating and Cooling, Industry, Transport, and Bioenergy

Europe needs to be more ambitious in its targets for decarbonising sectors other than the power sector. Space heating and cooling is a sector dominated by fossil fuels that requires change and currently district heating is not being pushed to a high enough extent. Electric alternatives have been shown to be significantly more energy efficient than existing oil and gas boilers. Promoting further adoption of these technologies is key and national buildings should lead by example by being mandated to adopt renewables based heating and cooling systems.

There is also plenty of work available which shows the benefits of using district heating for more densely populated areas, and this is something that should have its integration further encouraged. More populous areas can benefit greatly through adopting district heating schemes which can meet demand while improving energy efficiency and removing demand for fossil-based heating.

Transport as a whole has a clear path to decarbonisation. Road transport needs further encouragement. The introduction of several different EV models will see a rapid uptake of EVs. In commercial transport, more needs to be done to support electric alternatives such as E-Roads.

Incentivisation of using rail over aviation for international travel is vital. In many cases it is cheaper to fly from one city to a neighbouring city than it is to take the rail alternative.

CurrENT believes that encouraging participation from the private sector can lead to important innovations and price decreases in each of the sectors considered in the REDII consultation. Industry has shown to drive innovation and bring costs down when allowed to partake in the market, however, regulatory barriers should be lifted to allow for this innovation to be developed and also integrated and proven for use in the market. This applies to innovation at a user level in heating systems all the way up to innovation in grid systems and the energy system as a whole.