

Feedback on the proposal for an Energy Efficiency Directive RECAST

Hydrogen has seen an unprecedented development from an innovative niche technology to a systemic element in the EU's efforts to transition to a climate neutral society in 2050. In the future energy system, renewable energy producers will be faced with an important choice: how to deliver renewable energy most cost-effectively and whether to deliver it as electricity or as hydrogen. An essential factor in this decision will be the effect of this choice on energy efficiency from a system perspective. As such, Hydrogen Europe welcomes the opportunity to share its feedback on the proposed revision of the Energy Efficiency Directive (EED).

Hydrogen Europe supports the following aspects of the proposal:

- Inclusion of a system efficiency approach as well as the addition of social aspects and cost-effectiveness considerations in recitals 12 and 13. We note that these provisions should be strengthened across the text. To enable a systemic change in the whole energy sector, it is necessary to build on the key role of the energy efficiency first while promoting the multiple benefits of a system efficiency approach.
- Recognition of the effect of sustainable fuels deployment when determining the energy consumption targets of countries as expressed in Article 4 (e) (ii).

A narrow view on energy efficiency risks undermining the potential of clean hydrogen as a central avenue for the decarbonisation of sectors that cannot be electrified or where electrification is prohibitively expensive.

Hydrogen Europe considers it imperative for the EED revision to acknowledge the role of hydrogen as a mechanism to flexibly transfer energy across sectors, time, and place.

The advantages of clean hydrogen, in complement to electrification, can be found across the entire value chain of renewable energy, from production to its storage and transport and its end-use in multiple consuming sectors. Hydrogen allows the production of more renewable energy with the same resources by using suitable locations, and at times when it is most efficient to do so. Moreover, as an off-taker of renewable electricity, hydrogen allows for the installation of more renewable energy generation without being constrained by the capacity limitations of electricity grids.

Hydrogen is dispatchable via different means of transport and infrastructures which facilitates cost-efficient transport of renewable energy, including across long distances.

It is also important to take into account that variable renewable electricity is hard to store. Hydrogen brings flexibility to the energy system via large scale, seasonal storage, avoiding

costly and inefficient curtailment of renewable electricity. In other words, hydrogen maximises renewable energy output based on existing capacity while minimising losses.

From an end-use perspective, hydrogen increases the use of renewable energy sources by unlocking new business and commercial opportunities for renewable power producers. By producing hydrogen, renewable power producers can tap into hard-to-electrify sectors and any other sectors for which electrification is impossible, impractical, prohibitively expensive or difficult due to a lack of scalability.

The EED should introduce a definition of ‘energy input’ that takes into account the resources needed to generate energy.

To accommodate hydrogen’s role in unlocking the full potential of renewable energy in all sectors of our economy, particularly those that are difficult to electrify, alignment on a clear interpretation of the principle of energy efficiency is needed (*i.e. the proposed definition is ‘the ratio of output of performance, service, goods or energy, to input of energy’*). In this regard, we consider it key to introduce a definition of “energy input” that takes into account the entire ecosystem of resources needed to build and develop energy efficiency as well as the benefits in terms of system efficiency that might not be currently included into the scope of the EED, such as reducing energy losses through the conversion of power into hydrogen.

Hydrogen Europe calls for very close coordination between the Energy Efficiency Directive, and the Renewable Energy Directive II revision, but also with the wider portfolio of energy policy files, not least the Hydrogen Strategy and the Strategy for Energy System Integration. Hydrogen Europe is open to support the European Parliament and the Council in the future debates prior to the adoption of the EED recast to ensure that a comprehensive framework is put in place to address the benefits of hydrogen and overcoming the existing challenges in its swift scale up.