**Follow up to the European Parliament non-legislative resolution** **on a comprehensive European approach to energy storage**

1. **Rapporteur:** Claudia GAMON (Renew Europe/ AU)
2. **Reference numbers:** 2019/2189 (INI) / A9-0130/2020 / P9\_TA-PROV(2020)0198
3. **Date of adoption of the resolution:** 10 July 2020
4. **Competent Parliamentary Committee:** Committee on Industry, Research and Energy (ITRE)
5. **Brief analysis/assessment of the resolution and requests made in it:**

The resolution of the European Parliament stresses the important role of energy storage in addressing the flexibility needs of the energy system to reach our climate neutrality target. It makes a number of recommendations, many for the European Commission, to fully unlock the untapped potential of energy storage in the EU.

The recommendations are largely in line with the findings of a recent study of the Commission on the role of energy storage in security of supply (“Study on energy storage – Contribution to the security of the electricity supply in Europe”). While several of them are already taken into account in existing EU legislation and strategies, the Commission is considering integrating the others when developing future new initiatives.

In particular, further work to address current barriers and future needs is required in order to ensure a level playing field, provide adequate economic signals and support the correct development of energy storage in the EU. A comprehensive approach on storage could help coordinate the different actions across sectors and technologies while improving certainty for investors.

The Commission will therefore consider the recommendation of the European Parliament to adopt a strategy on energy storage. The work to develop this possible strategy will take into account the results of the above mentioned study as well as the existing initiatives on batteries and the recent ones on hydrogen and energy system integration.

1. **Response to the requests and overview of the action taken, or intended to be taken, by the Commission:**

The Commission welcomes the European Parliament’s resolution on a comprehensive European approach to energy storage.

The importance of storage is already taken into account in several Commission actions and proposals already made:

* The Commission’s economic recovery plan ‘Next Generation EU’ includes storage as one of the investment priorities to boost economic growth and resilience in the EU.
* The recent Communication on an EU Strategy for Energy System Integration[[1]](#footnote-1) confirms the Commission pledge to support the uptake of energy storage to achieve the EU decarbonisation objectives. This Strategy is complemented with the Hydrogen Strategy[[2]](#footnote-2) for a climate-neutral Europe, which is particularly focused on hydrogen as key energy storage for the decarbonisation of the EU economy.
* The new Horizon Europe increases the relevance of energy storage, continuing to provide support for research on storage and for the development of new energy storage technologies.
* A number of ongoing EU innovation and industrial initiatives are relevant for certain storage technologies, such as thermal storage, batteries or hydrogen, with initiatives like the European Battery Alliance, the Batteries Europe Platform, the Hydrogen Energy Network, the European Clean Hydrogen Alliance, and the Fuel Cells and Hydrogen Joint Undertaking.
* The cohesion policy in the next financing period will support investments in smart energy systems, grids and storage at local level.[[3]](#footnote-3) The Commission will also work with Member States, regional and local authorities, the industry and other stakeholders so that these funds contribute to support energy innovation and collaboration along the European value chains.

The Commission will also:

* Take into account energy storage and the need to foster its deployment when preparing future initiatives like the Renovation Wave and the revision of the Energy Taxation Directive, State Aid Guidelines or the review of the regulation on the trans-European energy network[[4]](#footnote-4) (TEN-E).
* Ensure the full implementation of the Clean Energy for All Europeans Package, which will be a first key step to level the playing field for energy storage.
* Continue to provide support to the technical development of energy system modelling tools to provide for a holistic assessment of flexibility options.
* Remain fully determined to ensure the development of energy storage, while applying the energy-efficiency-first principle.

Finally, the Commission recognises that a comprehensive approach covering all technologies as indicated by the European Parliament could be valuable to coordinate the different actions, keep a technology-neutral approach and ensure a genuine level playing field. To ensure such a comprehensive approach, the Commission will therefore consider the recommendation of the European Parliament to adopt a strategy on energy storage.

**Regulatory barriers (paragraphs 13-24):**

The Commissions shares the view that energy storage can play a crucial role in the energy transition and further provide high levels of security of supply and system stability.

Energy storage should be considered a competitive activity and market-driven. Therefore, the promotion of liquid and truly well-functioning markets for energy should remain a priority. In these markets, storage should be able to participate in ancillary services and the promotion of harmonised energy market products to enhance the cross-border participation of storage should also be considered.

The Clean Energy for All Europeans Package (CEAP) already sets the legal basis for the development of energy storage and addresses a large number of the existing barriers. Therefore, the implementation of the CEAP will remain a priority to remove regulatory barriers, as suggested in the study carried out for the Commission: “Study on energy storage – Contribution to the security of the electricity supply in Europe”.

In addition, several actions will be required to ensure the proper and coherent development of storage in the EU. First, the Commission has already indicated in the Energy System Integration Strategy its intention to align taxation with EU environment and climate policies, ensure the consistency of non-energy price components across energy carriers, and ensure a harmonised taxation of storage and hydrogen production, avoiding double taxation, through the revision of the Energy Taxation Directive. The revision of the TEN-E regulation and the review of the scope and governance of the Ten Year Network Development Plan (TYNDP) will fully support a more integrated energy system. The Commission will consider the requests of the European Parliament within the review process. Moreover, the Commission has announced its intention to further promote the energy-efficiency-first principle in all upcoming relevant methodologies and legislative revisions.

Furthermore, the importance of flexibility, and consequently storage, will be particularly reflected in the announced Network Code on Demand Side Flexibility, including the potential of electric vehicles.

Support for storage is allowed under the current State aid framework, in particular for research into improving storage technologies and for investments into storage needed for generation adequacy or linked to renewable energy provided the market cannot deliver on its own. The State aid framework is under review. The Commission will revise the rules with the aim to provide a fitted and clear framework to support cost-effective decarbonisation of the economy, including when necessary storage.

Additionally, the Commission will consider possible ways to facilitate the work on establishing common requirements for grid connection.

In addition, the EU sustainable finance taxonomy will guide investments towards environmentally sustainable economic activities – first, to those that significantly contribute to climate change objectives, while not harming the other environmental objectives as defined in Regulation (EU) 2020/852.

**Storage technologies (paragraphs 25-60)**

Storage technologies have different maturity levels and characteristics. These diverse technical characteristics, especially regarding energy and discharge capacity rates, as well as the rate of self-discharge, can provide significant value to and strongly influence their effective participation in energy markets and capacity mechanisms.

Considering the relevance of storage for the energy sector, the Commission has already developed some initiatives to support certain storage technologies, particularly for batteries and hydrogen. However, keeping a holistic view for the deployment of storage in the electricity sector is important in order to ensure the compliance with the technology neutrality principle and to avoid hampering the development of possible new storage technologies.

Regarding **chemical storage** (paragraphs 25-35), in particular hydrogen, the above mentioned Commission’s Hydrogen Strategy for a climate-neutral Europe aims to boost the clean hydrogen production in Europe, creating a sustainable industrial value chain and supporting markets and innovation to promote further scaling up of Power-to-X technology. Cohesion policy will provide necessary support to scale up, commercialisation and deployment of innovative solutions related to renewable and low-carbon hydrogen technology responding to specific regional challenges and needs. The possibilities offered to carbon intensive regions under the Just Transition Mechanism should also be fully explored.

As announced in the Energy System Integration Strategy and the Hydrogen Strategy the Commission will follow-up on the recommendations for Important Projects of Common European Interest (IPCEI) to promote supporting a hydrogen supply chain. The Commission recognises that the repurposing of existing gas infrastructure may provide an opportunity for a cost-effective energy transition. However, and in order not to distort the level playing field for market-based activities, hydrogen infrastructure should be accessible to all on a non-discriminatory basis and network operators must remain neutral.

The Commission will consider common quality standards or cross-border operational rules to ensure interoperability of markets for pure hydrogen, as well as a comprehensive terminology for all renewable and low-carbon fuels and the certification of such fuels. Guarantees of origin for gas are already regulated in European legislation and will be mutually recognised.

Regarding **electrochemical storage** (paragraphs 36-48), as recognised by the resolution, the Commission’s strong commitment to batteries is already reflected in the European Battery Alliance and the Batteries Europe Platform, which the Commission will continue to support.

The strategic imperative for batteries remains the creation of competitive and sustainable industrial value chain in Europe. Within Horizon Europe, the Commission is planning a Strategic action plan to set up a co-programmed R&I partnership on batteries that will cover the entire battery value chain. Batteries R&I Partnership is to establish the world best sustainable and circular European battery value chain to drive the transformation towards a carbon-neutral society. The Partnership ambition is to prepare and equip Europe to manufacture and commercialise by 2030 the next-generation of battery technologies, through results-oriented innovation programme, which will enable the rollout of the zero-emission mobility and renewable energy storage, thus directly contributing to the success of the European Green Deal. For example, the first IPCEI package on the battery value chain already involved 7 Member States and 17 companies.

The deployment of energy storage requires analysing the possible new dependencies for the EU, in particular regarding the supply of raw materials. Recent EU initiatives to address the dependency on raw materials include the 2017 list of critical raw materials for the EU and the abovementioned Strategic action plan on batteries, currently under implementation. Furthermore, the resilience of the supply chains in the energy sector, and in particular the storage industry, should be assessed. In this regard, the Commission has also launched a study on the resilience of the critical supply chains for equipment (covering renewable energy sources and grid technologies).

As expressed in the Energy System Integration Strategy, further measures are needed to ensure that customers’ decisions to save, switch or share energy properly reflect the life cycle energy use and footprint of the different energy carriers, including extraction, production and reuse or recycling of raw materials, conversion, transformation, transportation and storage of energy, and the growing share of renewables in electricity supply.

Regarding **mechanical storage** (paragraphs 49-52), pumped hydro storage is a key storage technology for the energy system, which amounts to more than 90% of the installed storage capacity in the EU. A possible strategy on energy storage could look at the relevant legislation and consider the need for changes while ensuring, where necessary, that negative environmental impacts are minimised.

Regarding **thermal storage** (paragraphs 53-60), the Commission will promote the development of: 1) Thermal energy storage (for space heating, hot tap water, cooling) for electricity load shifting, which reduces the demand for electricity from the grid at peak times; 2) Intermediate period compact thermal energy storage in buildings, which optimise and increase the use of varying solar and wind sources in buildings that do not have district heating and cooling network connections; 3) Large scale Thermal Energy Storage for district heating and cooling by incorporating/connecting also heat pumps and cogeneration units.

As expressed in the Energy System Integration Strategy, the Commission will facilitate the reuse of waste heat from industrial sites and accelerate investment in smart, highly-efficient, renewables-based district heating and cooling networks, including through the application of the energy-efficiency-first principle and, if appropriate, by proposing stronger obligations through the revision of the Renewable Energy Directive and the Energy Efficiency Directive.

In addition, the European Commission will explore the potential of storing energy in data processing very similar to the thermal storage in boilers. The large flexibility potential of the exponentially increasing digital sector, and more specifically the data centres, as well as the potential grid storage use of the integrated data centre back-up storage would be thoroughly investigated.

**Decentralised Storage and active consumers (paragraphs 61-64)**

Behind-the-meter storage is becoming a key element for flexibility and security of supply of the system. In order to support its development, the Commission will ensure the correct implementation of the CEAP as well as the future development of a Network Code on Demand Side Flexibility, including the potential of electric vehicles and the digitalisation of the front-end of the storage facilities as well as the end-to-end demand-side flexibility chain. This digitalisation would comply with commonly agreed standards aligned among the standards developing organisations.

As indicated in the Energy System Integration Strategy, the revision of the Alternative Fuels Infrastructure Directive will serve to accelerate the roll-out of zero-emission vehicles, including electric ones, strengthen interoperability requirements, ensure adequate customer information, cross-border usability of charging infrastructure, and the efficient integration of electric vehicles in the electricity system, including, where appropriate, the facilitation of smart charging and development of vehicle-to-grid potential. In the same Strategy, the crucial role of digitalisation for the management of decentralised energy solutions and flexible energy consumption has been highlighted. In addition, as part of the Renovation Wave initiative, several actions will promote the further electrification of buildings, the deployment of on-buildings renewable energy and the roll-out of electric vehicle charging points.

1. COM(2020) 299 final [↑](#footnote-ref-1)
2. COM(2020) 301 final [↑](#footnote-ref-2)
3. According to the European Commission proposal, investment to achieve the reduction of greenhouse gas emissions from activities listed in Annex I to Directive 2003/87/EC (ETS Directive) is excluded from Cohesion Fund and European Regional Development Fund support. Investment related to production, processing, distribution, storage or combustion of fossil fuels is excluded from ERDF, Cohesion Fund and Just Transition Fund support [↑](#footnote-ref-3)
4. Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure, OJ L115, 25.4.2013, p. 39 [↑](#footnote-ref-4)