Arbeits-
gemeinschaft
Alpine
Wasserkraft

Mr Maarten Verwey
European Commission
DG ECFIN
1049 Bruxelles
Belgien

30 September 2020

Proposal to create efficient pumped storage capacities as a building block in a renewable energy future as part of the EU Recovery Plan "Next Generation EU"

Dear Mr Verwey,

the European Commission intends to sustainably revive the European economy after the slump following the Corona crisis with the EU Recovery Plan "Next Generation EU" and funds from the multi-year financial framework for the period 2021–2027.

In this context, the signatory associations and the companies they represent propose making the creation of efficient pumped storage capacities an integral part of the development plans as an important component of a renewable energy future and to develop a programme for this purpose. The development and expansion of pumped storage capacities – both through new construction and the modernisation and extension of existing plants – can make an effective contribution to the economic recovery in the EU and the creation of new jobs in addition to the already essential contribution to the renewable electricity future. At the same time, this will make an substantial contribution to the security of supply and integration of renewable energies.

We also see the valid instruments of the EU Recovery Plan as a very well suited instrument to support this initiative and propose complementary measures:

- **Recovery and Resilience Facility:** Member States should be encouraged through appropriate communication to make the creation of efficient pumped storage capacities the subject of their *recovery and resilience plans*.[279]

- **InvestEU:** The promotion and financing of efficient pumped storage capacities should be explicitly mentioned in the InvestEU programmes, especially in the planned Policy Windows *Sustainable Infrastructure* and *Strategic European Investment*.

[279] Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing a Recovery and Resilience Facility, COM(2020) 408 final.

Member States should also be encouraged to make the creation of pumped storage capacity the subject of their cohesion policy programmes (REACT-EU) and their plans in the area of the Just Transition Mechanism where appropriate and possible.

The formulation of a comprehensive pumped storage support programme by the European Commission should enable an effective and coordinated use of the support instruments (investment grants, low-interest loans, guarantees, etc.). The European Commission estimates the need for new pumped storage capacities at 15 gigawatts by 2030 and 30 gigawatts by 2050. This means an estimated investment requirement of at least 20 billion euros by 2030 alone, by expanding and modernising existing capacities as well as building new plants.

Therefore, the signatory associations and companies are encouraged to initiate a pumped storage support programme by the European Commission to encourage construction decisions for such capacities.

Benefits of the pumped storage support programme:

- Pumped storage capacities make an important and, in any case, necessary contribution to the security of supply and system stability when converting energy systems from fossil power generation to renewable energies. As highly flexible and fast multi-talents, they provide the control and balancing of energy as well as other necessary system services, such as instantaneous reserve, frequency and voltage maintenance and black start capability; and all this without causing CO2 emissions. In principle, all Member States of the EU will benefit from the proposed programme.

  In addition to the Alpine countries, applicable projects are known mainly in Spain and Portugal, Sweden, Ireland, Poland, the Czech Republic and Slovakia, as well as the Southeast European countries including the accession candidates in the Balkans, if the programme is opened to them as well. The resulting increased stability of the European electricity grids will ultimately benefit all EU Member States.

- The mechanical and plant engineering industry as well as the control and automation sector in the EU are being supported in a way that is effective for the economy. The technology and world market leaders for pumped storage have sites, production facilities and areas for research and development in the EU. The pumped storage funding programme up to 2030 will consolidate their position on the world market in a technology of the future that can make significant contributions to the global energy transition and climate protection.

- The construction industry in the EU is supported by economic stimulus packages. The electrical engineering industry, cement and steel industries, whose products and services are needed for the construction of, for example, the power plants, the upper and lower reservoirs, the caverns and the pressure pipelines, also benefit indirectly from this.

- The support develops a sustainable effect for the economy and the environment. The first pumped storage power plants were commissioned at the beginning of the last century. Since then, they have been in continuous operation and have a lifetime (with maintenance measures) of more than 100 years. The ratio of resources used in construction, operation and maintenance is, therefore, particularly efficient and, when considering the entire life cycle, makes pumped storage particularly sustainable in the field of energy generation and storage technologies.

Why it is sensible and necessary to support pumped storage?

Pumped storage is the technically and economically most efficient form of large-scale energy storage and the only proven large-scale storage technology that is operational today. It provides services for the security of supply and system stability in an absolutely competitive manner. Nevertheless, possible capacities for pumped storage in the EU at attractive locations remain unused to date. The reason for this reluctance is the high capital intensity of pumped storage technology and also the lengthy approval processes. At the same time, the market conditions on the energy markets for pumped storage are already not very attractive and characterised by a high degree of uncertainty, partly because they are heavily dependent on changing political conditions. The risks involved in refinancing these high investments have a prohibitive effect.
Support for pumped storage would send a strong political signal that this specific technology, as a natural partner of renewable energies, should be an integral part of the energy turnaround and will enable investments that have been held back until now – for capacity increase and modernisation (e.g. digitalisation) in the short term and for new buildings at preferred locations in the medium and long term.

The European Commission states in its Commission Staff Working Document "Energy storage – the role of electricity":
"Energy storage is a key component in providing flexibility and supporting renewable energy integration in the energy system. It can balance centralized and distributed electricity generation, while also contributing to energy security. Energy storage will supplement demand response, flexible generation and provide a complement to grid development. Energy storage can also contribute to the decarbonisation of other economic sectors, and support the integration of higher shares of variable renewable energy (variable RES) in transport, buildings or industry.
Therefore, energy storage can make an overarching contribution to the implementation of the Energy Union, in particular through its contribution to the internal market and decarbonisation dimensions."[280]

Pumped storage facilities make a special contribution to this as highly flexible multi-talents, which justifies promoting the expansion and modernisation of existing plants as well as the construction of new plants under the EU Recovery Plan.

[280] SWD(2017) 61 final: COMMISSION STAFF WORKING DOCUMENT Energy storage – the role of electricity (Brussels, 1 February 2017) Page 3 or 6. The Commission Staff Working Document served to prepare the "Clean Energy for all Europeans". The strengthening of the role of storage facilities in the Directive and Regulation, therefore, serves the functions mentioned above.

We would be very pleased if our proposal were to be considered when implementing the EU Recovery Plan. We are always available for further information and discussion.

Kind regards

[redacted]

[redacted] **AGAW (Alpine hydropower)**
Verbund Hydro Power GmbH

Supported by the companies represented in the VDMA Pumped Storage Systems Working Group.

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Geschäftsführer
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Vattenfall Wasserkraft GmbH

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Voith Hydro Holding GmbH & Co. KG

The following companies are represented in the AGAW (Alpine hydropower):
Alperia AG, LEW Wasserkraft GmbH, EnBW AG, Grenzkraftwerke GmbH, KELAG Kärntner Elektrizitäts AG, ÖBB-Infrastruktur AG, Schluchseewerk AG, TIWAG-Tiroler Wasserkraft AG, VERBUND AG, Uniper Kraftwerke GmbH, Sparte Wasserkraft, Verein für Ökologie und Umweltforschung, Vorarlberger Illwerke AG,

Arbeitsgemeinschaft Alpine Wasserkraft, [redacted]