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## EASE Briefing

# REPowerEU Plan Briefing: What's in for storage?

### Introduction

On 18 May 2022, the European Commission presented the REPowerEU plan. The plan aims to strengthen independence from Russian fossil fuel imports and accelerate the clean energy transition. Three main actions are foreseen: saving energy, accelerating the clean energy transition, and diversifying energy sources. Smart investments and reforms are identified as the main enabler.

The REPowerEU plan contains several proposals, including:

- a) [REPowerEU Communication](#),
- b) [Annexes](#) to REPowerEU Communication
- c) [Staff Working Document: Investment needs, hydrogen accelerator and bio-methane plan](#)
- d) [EU Save Energy Communication](#)
- e) [EU External Energy Engagement Strategy](#)
- f) [EU Solar Strategy](#)
- g) [Annexes](#) to EU Solar Strategy
- h) [Amendments to Renewable Energy, Energy Performance of Buildings and Energy Efficiency Directives](#)
- i) [Recommendation on permitting procedures and Power Purchase Agreements](#)
- j) [Regulation establishing the Recovery and Resilience Facility](#)
- k) [Proposal for a Regulation on REPowerEU chapters in recovery and resilience plans](#)
- l) [Guidance on recovery and resilience plans in the context of REPowerEU](#)

[Further communication material](#) – such as factsheets and Q&As – was also developed.

### What's in for storage – at a glance

<i>Positives</i>	<i>Negatives</i>
Recognition of energy storage role in e.g. energy/industrial sector and for the energy transition	No mention of energy storage strategy
New, improved permitting measures for storage	Issue of system flexibility and energy shifting under-discussed
Further investments foreseen	No mention of energy storage targets
Solar coupled with storage seen as key for renovations	Issue of curtailment under-discussed



## Overview of key changes in REPowerEU (storage and non-storage related)

<i>File/Topic</i>	<i>Key change</i>
Biomethane Action Plan	Proposal of an action plan to promote industrial partnership, work with MS and neighbouring countries
<b>Energy Efficiency Directive</b>	<b>Proposal to increase from 9% to 13% of the binding Energy Efficiency Target</b>
EU Save Energy Communication	Promote immediate energy savings by citizens and businesses through e.g. behavioural choices
EU Energy Platform	Newly created platform for the common purchase of gas, LNG and hydrogen
EU External Energy Strategy	Diversification, new energy partnerships, support for non-EU countries such as Ukraine
EU (Solar) large-scale skills partnership	Develop the necessary skilled workforce to produce, install and maintain solar panels
EU Solar Industry Alliance	Support the EU industry in expanding the domestic production of PV panels
<b>EU Solar Strategy</b>	<b>Double solar photovoltaic capacity by 2025 and install 600GW by 2030</b>
EU Solar Rooftop Initiative	Legal obligation to install solar panels
<b>Recommendation on speeding up permit-granting and PPAs</b>	<b>Shortened and simplified permitting processes</b>
Heat pumps	Double the current deployment rate, resulting in a cumulative 10 million heat pumps units over the next 5 years
Horizon Europe	Top up of Horizon Europe investments in the Hydrogen Joint Undertaking (€200 million) to double the number of Hydrogen Valleys.
Hydrogen	Target of 10 million tonnes of domestic renewable hydrogen; hydrogen imports facilitated, proposal to increase sub-targets in RED; see Innovation Fund and Horizon Europe for additional points
Innovation Fund	Specific financing for REPowerEU, carbon contracts for difference for green hydrogen, double the funding available for the 2022 Large Scale Call of the Innovation Fund
Recovery and Resilience Plan	Increase the RRF financial envelope with €20 billion in grants from the sale of EU Emission Trading System allowances. Additional funds from cohesion funds and CAP
<b>Renewable Energy Directive</b>	<b>Proposal for increasing the headline 2030 target for renewables from 40% to 45%</b>
TEN-E	€10 billion of investment for gas infrastructure, new €800 million new CEF proposal for electricity PCIs, develop European Hydrogen Backbone



## Guide to this document

In a REPowerEU draft leaked on 11 May 2022, energy storage was not mentioned. In the final version, energy storage is present in several paragraphs. In the following sections of this document, all mentions of energy storage are listed. Mentions of curtailment, a key topic for energy storage, are also highlighted.

***Note: “Communication on Short-Term Energy Market Interventions and Long Term Improvements to the Electricity Market Design – a course for action”***

The European Commission published on 18 May 2022 a [Communication](#) to address the EU energy market design. This Communication is not part of REPowerEU. It contains short-term interventions on the gas market to address high prices (e.g. extending retail price regulation, emergency liquidity support measures). It also presents further measures in case of a full disruption of Russian gas supplies. Finally, it calls for an electricity market design revision. Predictably, the latter is expected to directly impact energy storage.

a) [REPowerEU COMMUNICATION](#)

### *3. Substituting fossil fuels and accelerating Europe’s clean energy transition*

- To promote the development of electricity ***storage*** capacities, the Commission proposes to consider ***storage*** assets as being in the overriding public interest and facilitate permitting for their deployment.
- Total investment needs for key hydrogen infrastructure categories are estimated to be in the range of EUR 28 – 38 billion for EU-internal pipelines and 6 – 11 billion for ***storage***.
- To support hydrogen uptake and electrification in industrial sectors, the Commission will double the funding available for the 2022 Large Scale Call of the Innovation Fund this autumn to around EUR 3 billion. A specific REPowerEU window will support
  - o (1) innovative electrification and hydrogen applications in industry,
  - o (2) innovative clean tech manufacturing (such as electrolysers and fuel cells, innovative renewable equipment, ***energy storage*** or heat pumps for industrial uses), and
  - o (3) mid-sized pilot projects for validating, testing and optimising highly innovative solutions.

### *4. Smart investment*

#### *4.1. European interconnection and infrastructure needs*

- ***Energy storage*** plays a significant role in ensuring flexibility and security of supply in the energy system by facilitating the integration of renewable generation, supporting



the grid, and **shifting energy** to the time when it is most needed. Ultimately, **energy storage** reduces the use of gas power plants in the energy system.

### 5. Reinforcing preparedness

- The Commission will also facilitate setting up a coordinated EU demand reduction plan with pre-emptive voluntary **curtailment** measures which should be ready for activation before an actual emergency arises.

#### b) ANNEX to the Communication

*Annex 1: Starting point: All fit for 55 measures will reduce EU gas demand by 116 BCM, or 30% reduction*

STARTING POINT: ALL FIT FOR 55 MEASURES WILL REDUCE EU GAS DEMAND BY 116 BCM, OR 30% REDUCTION			
RePOWER PLAN	Equivalent GAS SAVED	JOINT EU AND MS RePOWER EU ACTIONS	INVESTMENT NEEDS (EUR)
<b>SAVINGS</b>			
Citizens : Behavioural change	10 bcm	EU Save Energy communication Play my part campaign	-
Residential sector: energy efficiency and heat pumps	37 bcm	EU Save Energy communication Higher 13% EED target by amended EED Ecodesign and energy labelling requirements for solar PVs heat pumps Potential Important Projects of Common European Interest (IPCEI) focused on breakthrough technologies and innovation	56
Industry: energy efficiency and electrification	12 bcm	Higher 13% EED target by amended proposal Higher 45% RES target by amended proposal Innovation fund RRF chapter	41
<b>Curtailment</b>		EU coordinated demand reduction plan	-

#### *Annex 3: Infrastructure needs for gas*

SMART INVESTMENTS AND REFORMS			
Infrastructure		Integrated EU-wide infrastructure gaps and needs assessment for gas, electricity and hydrogen	29 bn (power grids) + 10 bn (power <b>storage</b> ) + 10 bn (gas) Oil for security of supply 1,5 bn [hydrogen infrastructure see Staff work document]

Please note that it is not fully clear what these 10 billion for “power storage” will actually target. The same applies to “power grids”.



*Achievements of the TEN-E framework to establish resilient European electricity and gas networks |*

- The accelerated implementation of electricity PCIs\* will be crucial for a better interconnected system that will enable to increase the share of renewable energy sources and reduce renewable energy curtailment significantly faster in line with the REPowerEU objectives. (\*The current 5th PCI list includes in total 67 electricity PCIs.)

*c) Implementing REPowerEU Plan SWD*

*4. HYDROGEN ACCELERATOR*

*1. Scaling up the production and import of renewable hydrogen to 20 Mt by 2030*

- [...] under the hydrogen and gas markets decarbonisation package a number of measures have been proposed to expedite authorisation procedures for the repurposing of existing natural gas infrastructure for the transport and storage of hydrogen as well as procedures for newly constructed dedicated hydrogen infrastructure [...] To gain further insight in applicable permitting rules and procedures for the construction and operation of future infrastructure dedicated to the production, storage and transport of pure hydrogen, the preparation of a guidance document should be considered.

*2. Scaling up the development of hydrogen infrastructure in the EU*

- A rapid development of energy infrastructure that connects supply and demand is a key ingredient for the envisaged acceleration of hydrogen production and use in the EU and beyond. This concerns transport via pipelines, as well as non-network based options using, for example, adapted LNG terminals, and **storage**.
- The revised TEN-E Regulation, entering into force in June 2022 [...] enables a coordinated and timely development of trans-European hydrogen networks, by selecting key infrastructure projects of cross-border relevance based on a robust methodology, in line with EU policy objectives, including hydrogen pipelines, storage facilities, electrolyzers and hydrogen terminals, covering as well hydrogen embedded in other chemicals.
- A Commission estimate of investment needs for key hydrogen infrastructure categories by 2030 points to about € 50 – 75 bn for electrolyzers, € 28 – 38 bn for EU-internal pipelines and € 6 – 11 bn EUR for storage.



d) [EU Save Energy Communication](#)

No mentions of energy storage in this file.

e) [EU External Energy Engagement Strategy](#)

4.1 Promoting renewable technologies and energy efficiency in partner countries

- EU companies are leaders in important segments of the photovoltaic, hydrogen and heat pump industries and are catching up with Asia on [battery technologies](#), thanks to the European Battery Alliance.

4.2 Cooperating on research and technology

- Other key research areas for an innovation-driven transition include the development of smart, cyber secure and flexible power grids, [long-duration energy storage](#), sustainable raw materials, small modular reactors and sustainable fuels for industry and transport.

f) [EU Solar Energy Strategy](#)

2. Accelerating solar energy deployment

*European Solar Rooftops Initiative*

- Member States should establish robust support frameworks for rooftop systems, including in combination with [energy storage](#) and heat-pumps, based on predictable payback times that are shorter than 10 years.
- Member States should combine solar deployment with roof renovations and [energy storage](#); this should be implemented through a one-stop shop integrating all aspects.

2.1. Utility-scale deployment and enabling measures

*Utility-scale installations*

- As the share of variable renewables increases in the electricity system, auctions should also support renewables-based technologies that can reduce the cost of ensuring network stability and system integration. Concentrated Solar Power (CSP) with [thermal storage](#) and solar PV with [batteries](#) are examples of technologies that can provide these benefits.



## 2.2. Bringing solar value to citizens and communities

### *Incentivising prosumers*

- The best available projections on the above variables should then be used to design support frameworks that reassure those deciding on an investment in solar energy, **energy storage** or heat pumps. This should be done in particular through a predictable payback period, shorter than 10 years.
- Member States should support partnerships between local authorities, energy communities and social housing managers to facilitate collective and individual self-consumption schemes. Pre-financing shares in energy communities, virtual net-metering schemes (while accounting separately for calculating network charges) or renting out solar PV, **energy storage** and heat pumps at a fee lower than retail electricity prices, can all be used for this purpose.

### *Energy Communities and other collective solar actions*

- Current legislation already supports renewable and citizen energy communities, as well as collective solar initiatives to generate, **store**, share, exchange, and use energy. However, these communities still face significant barriers, [...] To tap into this potential, Member States should establish appropriate incentives and adapt administrative requirements to the characteristics of energy communities.

### *Integrating solar energy through the interaction with other devices*

- **Energy storage** is an important asset to contribute to this integration, especially in the context of heating or transport shifting to electricity. Full system benefits from distributed assets, such as **batteries**, can only be reaped if they are properly integrated and able to participate in all electricity markets, including balancing and congestion management markets, in a non-discriminatory and homogeneous manner across the EU. At EU level the ongoing work on the EU network code on demand side **flexibility** aims at addressing remaining regulatory barriers and unlocking the potential of such distributed assets as **flexibility** sources. The July 2021 proposal for a revision of the RED also includes additional provisions to ensure non-discrimination in the market participation of **these assets**.
- Electric vehicles (EVs) can also serve as **energy storage** devices and contribute to solar electricity self-consumption, if parked within the premises of the owner or user.
- EVs [...] can also become an additional source of electricity for the grid while parked, and an **energy storage** solution contributing to overall grid resilience



- Off-grid recharging stations equipped with PV panels and ***energy storage*** offer the possibility to increase access to EV recharging infrastructure in rural areas and, in general, in those locations with limited grid connection.
- Devices such as ***batteries*** and heat pumps can only contribute to the integration of solar electricity into the energy system if they can effectively communicate with each other and with solar energy systems. This interoperability can be facilitated through measures such as standardisation, or open-source solutions for digital connectivity.
- In addition, the upcoming Digitalisation of Energy Action Plan will support interoperability for a wide range of energy consuming, producing and ***storage devices*** through a code of conduct for energy smart appliances manufacturers.

#### Innovative forms of deployment (2): Vehicle-integrated PV

- More than other EVs, they (vehicle-integrated PV) can also become an additional source of electricity for the grid while parked, and an ***energy storage*** solution contributing to overall grid resilience. The opportunities provided by this technology are being analysed through a pilot project managed by the Commission.

#### 2.3. Solar value for buildings and industry

- Where appropriate, this effort (national support programmes, giving priority to most suitable buildings for quick interventions) can be combined with roof renovations and deployment of ***energy storage*** and heat pumps.

#### 2.4. Preparing the energy network for the efficient absorption of solar electricity

##### *Paving the way for Direct Current solutions*

- The introduction of high shares of solar PV and wind has an impact on the way the electricity grid is managed. As renewable power from solar is produced in Direct Current (DC), conversion to Alternating Current (AC) to feed into the grid and then converting back to DC, e.g. to ***store energy***, leads to energy losses. Such conversion losses are currently growing because more devices and system, such as ***batteries***, heat-pumps, data centres, electric vehicles or appliances, operate in DC. Increasing the use of DC technologies could thus be beneficial to the electricity system.

#### ***g) Annexes to EU Solar Energy Strategy***

##### *Annex: Key actions to implement the EU Solar Energy Strategy*

##### *Other actions:*





- Member States should incentivise installation of energy storage devices to complement distributed renewable energy systems;
- National Regulatory Agencies should evaluate electricity tariffs in light of ensuring non-discrimination between production connected at the distribution level and production connected at the transmission level for injection charges as well as non-discrimination of energy storage or aggregation;

*h) Amendments to RED, EED, and EPBD*

*Explanatory Memorandum*

*5. Other elements*

*Detailed explanation of the specific provisions of the proposal\_ Directive (EU) 2018/2001, Directive 2012/27/EU and Directive 2010/31/EU*

- Article 1(10) inserts a new Article 16d to ensure that plants for the production of energy from renewable sources, their connection to the grid, the related grid itself or storage assets are presumed to be of overriding public interest for specific purposes.

*Proposal for a Directive amending Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources, Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency*

- (8) The identification of the required land and sea areas should take into consideration [...] the availability of relevant grid infrastructure, storage and other flexibility tools bearing in mind the capacity needed to cater for the increasing amount of renewable energy.
- (15) The designation of renewables go-to areas should allow renewable energy plants, their grid connection as well as co-located energy storage facilities located in these areas to benefit from predictability and streamlined administrative procedures.
- (21) The installation of solar energy equipment, together with related co-located storage and grid connection, in existing or future structures created for purposes different than solar energy production with the exclusion of artificial water surfaces, such as rooftops, parking areas, roads and railways [...] may benefit from shorter permit-granting procedures.
- (22) [...] in the necessary case-by-case assessments to ascertain whether a plant for the production of energy from renewable sources, its connection to the grid, the related grid itself or storage assets is of overriding public interest in a particular case, Member States should presume these plants and their related infrastructure as



being of overriding public interest and serving public health and safety, except where there is clear evidence that these projects have major adverse effects on the environment which cannot be mitigated or compensated.

*Article 1: Amendments to Directive (EU) 2018/2001*

*(4) The following Article 15b is inserted:*

- *'Article 15b: Mapping of areas necessary for national contributions towards the 2030 RES target*
  - o (2) When identifying the areas referred to in paragraph 1, Member States shall take into account:
    - (c) the availability of relevant grid infrastructure, **storage** and other **flexibility** tools or the potential to create such grid infrastructure and **storage**.

*(5) The following Article 15c is inserted:*

- *'Article 15c: Renewables go-to areas*
  - o (1) By 2 years after the entry into force], Member States shall adopt a plan or plans designating, within the areas referred to in Article 15b(1), renewables go to areas for one or more types of renewable energy sources. In that plan or plans, Member States shall:
    - (b) Establish appropriate rules [...], including on the mitigation measures to be adopted for the installation of renewable energy plants, **co-located energy storage facilities**, as well as assets necessary for their connection to the grid, in order to avoid or, if not possible, to significantly reduce the negative environmental impacts [...]

*(6) Article 16 is replaced by the following:*

- *'Article 16: Organisation and main principles of the permit-granting process*
  - o (1) The permit-granting process shall cover all relevant administrative permits to build, repower and operate plants for the production of energy from renewable sources, **co-located energy storage facilities**, as well as assets necessary for their connection to the grid, including grid connection permits and environmental assessments where these are required. [...]

*(7) The following Article 16a is inserted:*

- Article 16a: Permit-granting process in renewables go-to areas



- (2) The permit-granting process for the repowering of plants and for new installations with an electrical capacity of less than 150 kW, co-located energy storage facilities as well as their grid connection, located in renewables go-to areas shall not exceed six months. [...]
- (3) [...] co-located storage facilities as well as their connection to the grid, shall be exempted from the requirement to carry out a dedicated environmental impact assessment under Article 2(1) of Directive 2011/92/EU [...]

*(8) The following Article 16b is inserted:*

- Article 16b: Permit-granting process outside renewables go-to areas
  - (2) [...] The permit-granting process for the repowering of projects and for new installations with an electrical capacity of less than 150 kW, co-located storage facilities as well as their grid connection, located outside renewables go-to areas shall not exceed one year including environmental assessments where required ... Where duly justified on the ground of extraordinary circumstances, this one-year period may be extended by up to three months. [...]

*(10) The following Article 16d is inserted:*

- 'Article 16d: Overriding public interest
  - By [three months from entry into force], until climate neutrality is achieved, Member States shall ensure that, in the permit-granting process, the planning, construction and operation of plants for the production of energy from renewable sources, their connection to the grid and the related grid itself and storage assets are presumed as being in the overriding public interest and serving public health and safety when balancing legal interests in the individual cases for the purposes of Articles 6(4) and 16(1)(c) of Directive 92/43/EEC, Article 4(7) of Directive 2000/60/EC and Article 9(1)(a) of Directive 2009/147/EC.'

*i) [Recommendation on speeding up permit-granting and PPAs COM \(2022\) 3219](#)*

*Definition:*

- For the purposes of this Recommendation and the accompanying guidance, renewable energy projects are understood to encompass production plants for the generation of renewable energy as defined in the Renewable Energy Directive



(including in the form of renewable hydrogen), as well as the assets needed for their grid connection and for the storage of the energy produced.

*Faster and shorter procedures:*

- Member States should ensure that the planning, construction and operation of plants for the production of energy from renewable sources, their connection to the electricity, gas and heat grid and the related grid itself and storage assets qualify for the most favourable procedure available in their planning and permit-granting procedures and are presumed as being in the overriding public interest and in the interest of public safety, in view of the legislative proposal amending and strengthening the provisions of Directive (EU) 2018/2001 related to administrative procedures and without prejudice to the Union law.

*Innovative projects:*

- Member States are encouraged to put in place regulatory sandboxes to grant targeted exemptions from the national, regional or local legislative or regulatory framework for innovative technologies, products, services or approaches, to facilitate permit-granting in support of the deployment and system integration of renewable energy, storage, and other decarbonisation technologies, in line with Union legislation.

**j) Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility**

*The Regulation entered into law already on 12 February 2021 establishing the Recovery and Resilience Facility; it was consolidated in February 2022. For Completeness, we report storage mentions in the text.*

**ANNEX VI: Methodology for climate tracking**

**Methodology for climate tracking**

Dimensions and codes for the types of intervention for the Facility

	<b>INTERVENTION FIELD</b>	<b>Coefficient for the calculation of support to climate change objectives</b>	<b>Coefficient for the calculation of support to environmental objectives</b>
033	Smart Energy Systems (including smart grids and ICT systems) and related <u>storage</u> .	100 %	40 %



*ANNEX VII: Methodology for digital tagging under the Facility*

*Methodology for digital tagging:*

*Intervention table*

Code	Intervention field and type of intervention (1)	Coefficient for the calculation of support to digital transition
	Intervention field 1: Connectivity DESI dimension 1: Connectivity	
033	Smart Energy Systems (including smart grids and ICT systems) and related <b>storage</b>	40 %

*k) Proposal for a Regulation on REPowerEU chapters in recovery and resilience plans*

*No mentions of energy storage in this file*

*l) Guidance on recovery and resilience plans in the context of REPowerEU*

*Examples of investments that can be included in the REPowerEU chapters:*

- Hydrogen infrastructure, including pipelines, **storage** and port terminals.
- Renovation schemes and technologies increasing the energy efficiency of buildings and the decarbonisation of heat, such as heat pump roll-outs, renewable district heating, photovoltaic (PV) rooftops, **energy storage**, smart thermostats, and top-grade insulation;
- Facilities for **energy storage** and facilities for gas storage;
- Reforms to enhance the power system **flexibility**, enable demand-side resources to participate in electricity markets and develop incentives for demand response, including **energy storage**
- Devising appropriate legislative framework for renewable or fossil-free hydrogen, transportation and **storage**;

*Exemption from the obligation to contribute to the 20% digital target:*

- Data infrastructures to enable a widespread development of demand response (e.g. with the Common European energy data space) and **energy storage**;

*How should the DNSH principle be applied in the context of RRRPs' revisions:*



- REPowerEU measures: Measures dedicated to renewable energy generation, including bioenergy meeting sustainability and greenhouse gas emission savings criteria set out in the Renewable Energy Directive 2018/2001 /EU (REDII), electricity networks and ***storage***, energy efficiency, hydrogen-ready infrastructure, have already been included in the adopted recovery and resilience plans in accordance with the DNSH principle.

### **Conclusion: what's to come?**

Even though the REPowerEU plan recognises the role of energy storage in accelerating the energy transition, it does not announce an energy storage strategy. Such a strategy would have been a strong investment signal: this is a missed opportunity for the EU.

The Commission is working on a Staff Working Document (SWD) on Energy Storage, to be presented in October 2022. There is still time to influence the SWD to make sure an energy storage strategy will finally be prioritised by the EU – the EASE Secretariat is engaging with the Commission on a weekly basis. EASE Secretariat aims to continue the discussion with the Commission, keeping different communication channels open with various directorates and units. EASE Secretariat is also pointing out to the Members of the European Parliament (MEPs) that [their own recommendation](#) to develop an energy storage strategy has not been picked up. It has to be seen whether MEPs (and members of the Council), with EASE support, will be able to apply sufficient pressure on the European Commission on this topic.

The bottom line: REPowerEU proposes a set of tools that support the deployment of energy storage – e.g., as said, in the context of the EU Solar Energy Strategy, permitting, and investments. More was expected from REPowerEU, but the next few months could still bring positive proposals from the European Commission.



### **About EASE**

The European Association for Storage of Energy (EASE) is the leading member-supported association representing organisations active across the entire energy storage value chain. EASE supports the deployment of energy storage to support the cost-effective transition to a resilient, climate-neutral, and secure energy system. EASE was established in 2011 and represents over 50 members including utilities, technology suppliers, research institutes, distribution system operators, and transmission system operators.

For more information please visit: [www.ease-storage.eu](http://www.ease-storage.eu)

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