Energy Storage and EU policy framework

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Flow Batteries Europe, Brussels 3.2.2022

“More provisions for long duration energy storage needed in the Delivering the European Green Deal package”

How much additional effort is needed by EU?

- Sound enabling framework on storage in place, including long-term storage:
  - regulatory provisions, including new provisions proposed under Fit for 55. Market push will increase with RES share growing.
  - new enabling provisions on State aid
  - more EU funding for flow batteries is likely in 2023-2024
- Open question: are MS always making maximum use of options they have been offered?

RECAP: ELECTRICITY REGULATION 2019

- ✓ **Prohibition of discriminatory grid charges**
- ✓ All markets opened to storage (also through Electricity Directive) => closure of any of markets by unjustified rules on **stacking of revenues** can and should be challenged.
- ✓ Strict rules on **capacity mechanisms**, but storage - unlike e.g. heavy polluting plants - can benefit
- ✓ Strict rules on renewables curtailment and price caps (complementing RES target for 2030)

RECAP: Electricity Directive 2019

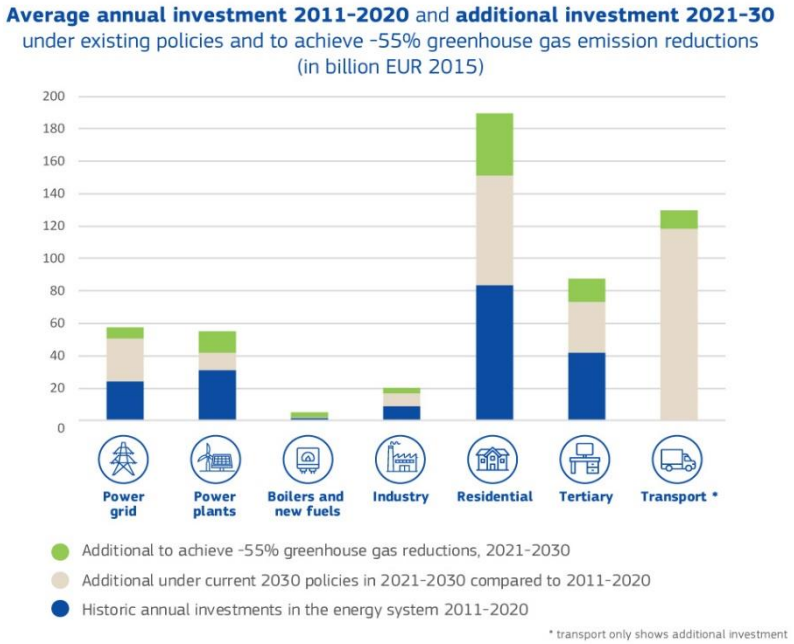
- ✓ **Regulators to incentivise network operators to procure flexibility services. Network planning should take storage options into account**
- ✓ Right to produce, sell and store energy; Right to dynamic electricity price; Tightened provisions on smart metering
- ✓ Enabling of aggregators' businesses
- ✓ Clear ownership rules
- ✓ Phasing out of regulated prices
- ✓ Possibility of introduction of dynamic grid charges for consumers
- ✓ Net metering as regards network charges – discouraged and in some cases explicitly prohibited

Climate Neutrality Law = basis for new action

EU Climate Law of 30 June 2021 (EU Regulation)

⇒at least 55% net emission reduction by 2030 vs 1990

⇒net zero emissions by 2050



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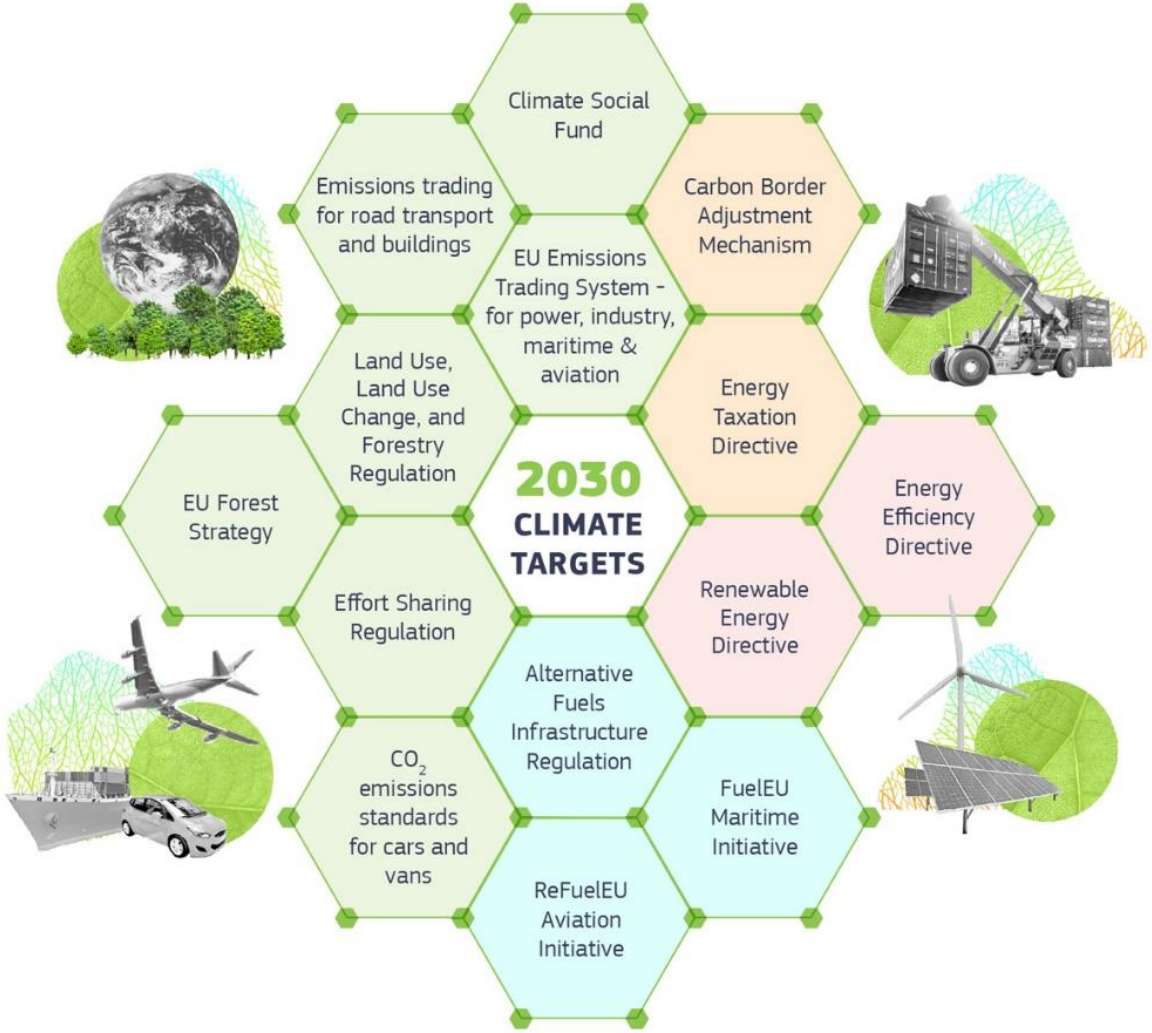
The Fit for 55 Package – Overview



14 proposals arranged in four blocks:

- emission block
- energy block
- transport block
- taxation block

9 of the proposals will lead to increased demand for batteries

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EU Emission Trading Scheme

Existing ETS

- Emissions reduction by 61% by 2030 vs 2005

  (+18 pp increase vs current 2030 target)

- Extension to maritime transport

- Removal of free allowances for aviation

  => E.g. incentive for hybrid propulsion/battery use

New ETS for road transport and buildings

- Operational as of 2025

- Pushes the fuel suppliers to decarbonise their product

=> interest to offer certain share of renewable fuels, including renewable electricity.

- Emissions reduction of 43% by 2030 vs 2005

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Effort Sharing Regulation
(emissions from homes, cars, small businesses, agriculture, waste.)

- Emission reduction by 40% by 2030 vs 2005 (Increase of 11 pp vs current 2030 target)
- Continue to cover road transport and buildings sectors=>

  =>i.e. price incentives coming from new ETS should be complemented by government action

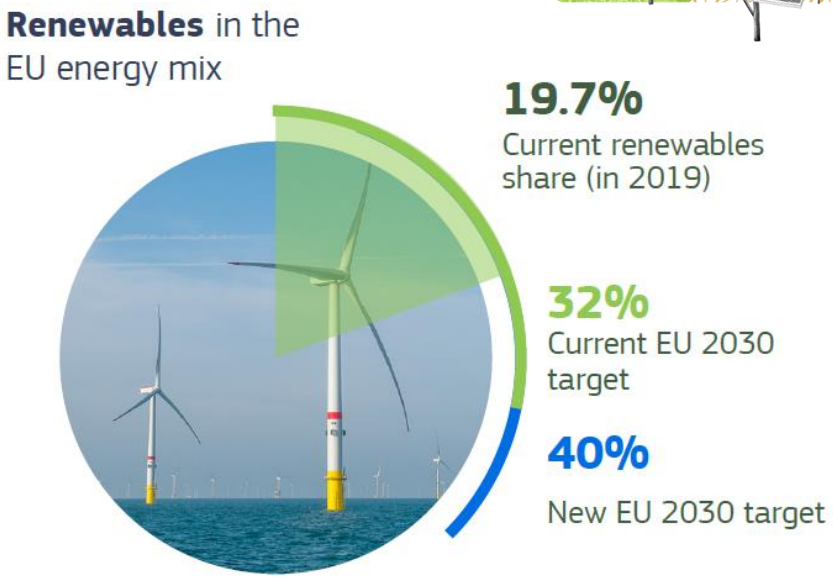
Revising the Renewable Energy Directive

Supply side: 40% overall renewables target for 2030
=> 65% renewables in the grid in EU to be expected on average

Demand side: e.g. doubling of 2030 target for renewables in transport in energy terms, mostly through electrification

Accompanying measure: sector coupling rules, including provisions on access to real time info fron battery management systems

=>Considerable demand for stationary to complement EV flexibility and facilitate fast charging



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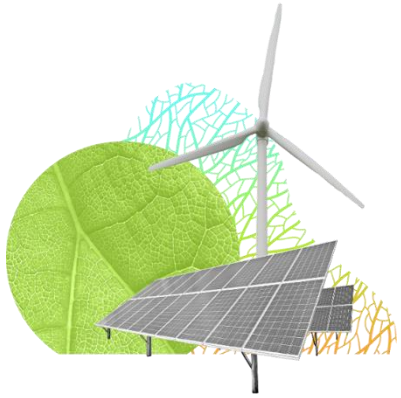
Revising the Energy Efficiency Directive



New energy savings targets will lead to more stationary storage and more EV charging points in the coming years. Long-term: EE will moderate increase in demand for storage

Recently (Dec 2021) supplemented by: revision of the Energy Performance in Buildings directive. Zero-emission buildings become the new standard for new buildings as from 2030. Also deep renovations will have to deliver the same as of 2030. This is combined with strengthened provisions on EV charging points in buildings

17.0-17.4%
Current energy efficiency savings for primary and final energy consumption (in 2019)

32.5%
Current EU 2030 non-binding target (relative to 2007 projections)

36-39%
New EU 2030 binding target for final and primary energy consumption

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Policy measures on transport (main proposals of relevance for batteries)

- **New CO2 norms**: 100% emission reduction for new cars and vans by 2035 = end of internal combustion engine for light duty vehicles.
    - Intermediate step: 55% emission reduction by 2030 compared to 2021 target

- **Ambitious Alternative Fuels Infrastructure Regulation** to replace the current directive

- **FuelEU Maritime** – GHG intensity reduction of energy consumed on board of ships (Proposal for an EU Regulation) – 6% by 2030; 75% by 2050

Revision of the Energy Taxation Directive

- Revision of the lowest minimum rate of will apply to electricity no matter how used [0.15 €/GJ]
- The highest minimum rate will apply to diesel and petrol when used as motor fuel [10.75 €/GJ]
- In addition further advantage to electrification and battery use will come from:
  - ✓Progressive addressing of tax exemptions for the use of fossil fuels in aviation and maritime transport
  - ✓Indexation of taxation rates in line with inflation

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New State Aid Rules

New Guidelines on State aid to Climate, Energy and Environment - 27.01.2022

- 4.1.2.1 Aid in the context of renewable energy projects
- 4.1.2.2 Other aid for the reduction of GHGs - aid possibility for alone-standing storage
- 4.2. Aid for the improvement of the energy and environmental performance of buildings
- 4.3.2. Aid for the deployment of recharging or refuelling infrastructure.
- 4.8. Aid for the security of electricity supply: the aid .. should be open to … generation, storage and demand response.
- 4.9 Aid for energy infrastructure – flexible rules until 31.12.2023 for all grid-connected storage. Thereafter: only PCIs under TEN-E and storage representing integrated network components.

New Guidelines on State aid to Research and development and innovation under way (2022)

New General Block exemption regulation to be adopted in 2022

EU funding examples; Batteries Europe

- Horizon Europe (Batteries Partnership – pillar 2), as well as 1st and 3rd pillar of HEU. See i.a. annual work programmes of EIC
- Calls under Innovation Fund
- Calls under EU-Catalyst partnership
- Support to high TRL innovation and investments in start-ups by Innoenergy
- CEF-E; InvestEU; ERDF; Just Transition Fund..
- The Recovery and Resilience Facility = EUR 672.5 billion of loans and grants (37% for climate)

+ Have a stronger say in Batteries Europe!

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Batteries Europe role within EBA

The European Battery Alliance

EU and Member States providing the supportive framework=>

EU level = set of legislative and support measures based on Strategic Action Plan on Batteries, as supplemented by "Fit for 55" Legislative package

EUROPEAN BATTERY ALLIANCE | EBA250

The industrial work-stream of the Battery Alliance led by EIT Innoenergy =>

Business Investment Platform @EUROPEAN BATTERY ALLIANCE | BIP

+ EBA Academy

BATTERIES EUROPE
EUROPEAN TECHNOLOGY AND INNOVATION PLATFORM

- Batteries R&I strategic agendas
- Federation of battery R&I initiatives

EU, Regional and National R&I Networks and initiatives

- Batt4 EU, Horizon Europe partnership for battery research activities (925M€), including Battery 2030+ initiative
- Complementary partnerships and work-programmes under Horizon Europe , incl. partnership "Towards zero emission road transport"
- Multi-billion battery Important Projects of Common European interest funded by participating member states
- S3 Interregional partnership on advanced battery materials/possible funding under ERDF
- Other R&I funding, including national and bilateral instruments
- Market uptake instruments, including Innovation Fund

A competetive and sustainable European battery value chain

eit InnoEnergy
Funded by the European Union

Important milestones reached by Batteries Europe over 3 years

- Consolidation of battery R&I community
- Strategic Research Agenda and Detailed analysis of cross-cutting issues [skills, safety sustainability digitalisation]
- Laying the ground for Batteries Partnership under Horizon Europe
- Technology Roadmaps covering the whole value chain
- Battery R&I reporting methodology

New support arrangement (CSA) to start by summer – info will be circulated

[Batteries Europe | Energy - European Commission]

[Delivering the European Green Deal | European Commission (europa.eu)]

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