

# EU beyond 2030 and energy security

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# EU BEYOND 2030: WHAT IS NEW IN 2020

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- **Climate Neutrality**: proposed by EC in Communication “A Clean Planet for All” in November 2018, endorsed by European Parliament in March 2019 and by European Council in December 2019
- **EU Green Deal**: reaffirms the Commission’s ambition to make Europe the first climate-neutral continent by 2050. Communication on the European Green Deal in December 2019
- **COVID epidemic**: EU Recovery Plan proposed by EC in May 2020, European Council political agreement in July 2020 and final approval of MFF in December 2020
- **Mutual reinforcement between fighting COVID and climate change**: need to ensure consistency between NECPs and national Recovery Plans (37% of support for climate projects)

=> need more green electrons and green molecules (hydrogen) and resorting to imports

Page 10 Is this compatible with energy security?

# EU GREEN DEAL DRIVES CARBON NEUTRALITY AND UNDERPINS GREEN STIMULUS PACKAGES

**Interim target for 2030:**  
 -55% approved by European Council of December 2020

The most important endeavor since the creation of the Single Market: articulating **climate, innovation and social justice**

## The European Green Deal



### Beyond energy:

An industrial strategy to innovate and to develop new technologies while creating new markets.

Making Europe a leader in low carbon technologies.  
 Hydrogen Alliance

### Beyond Europe:

“greater emphasis on cooperation with Southern Neighborhood and work on a green agenda for the Western Balkans “

“imports of low carbon electricity and decarbonized hydrogen/ammonia from North Africa”

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# ENERGY SECURITY: FROM SELF SUFFICIENCY TO COOPERATION AND MARKET INTEGRATION

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# ENERGY SECURITY AND DECARBONIZATION

## FRIENDS OR FOES?

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- Paris Agreement and other climate commitments require massive RE scale-up and increased electrification
- RE are usually national energy sources, so increasing the RE share result in a higher level of self-sufficiency (=> good for **energy security**)
- However, production of Variable Renewable Energy (VRE) is difficult to control, more decentralized and not always available when needed=> threat to power system reliability and to energy security
- To cope with a high RE penetration, power systems need flexibility, and regional electricity market integration is a good way to deliver that flexibility without hurting the other objectives of security and affordability

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# REGIONAL ENERGY MARKET INTEGRATION BENEFITS

## INCLUDE ENHANCED ENERGY SECURITY AND RES SCALE-UP SUPPORT

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- Enhanced energy security???? (depends on definition)
- Increased power system flexibility and reliability
- Smoothing of load duration curve
- Optimized use of infrastructure and more efficient dispatch of power plants=> lower cost of supply
- Economies-of-scale on generating plants serving multiple markets
- Reduced CO2 emissions

=> Increased exchanges across borders

*Might be the best solution to reconcile different objectives– for a secure low-carbon energy supply at least cost. Possible threat to energy security?*

# EURO-MEDITERRANEAN ENERGY MARKET INTEGRATION FACILITATES DECARBONIZATION...

Countries of the southern and eastern Mediterranean shores are rich in carbon-free energy resources and creating an integrated Euro-Mediterranean market would increase power system flexibility, thus supporting renewable energy scale-up

Key highlights of EU Green Deal are the need to increase cross-border trade and regional cooperation, to better share clean energy sources and to interconnect energy systems.



In the next software update, here the stats will be shown for the selected area

Delete and start drawing a new one

.... AND INCREASES ENERGY SECURITY BOTH FOR EUROPE AND SOUTHERN/EASTERN SHORE

# MEDITERRANEAN INTEGRATION REQUIRES INFRA (HARDWARE)... ... AND MORE (SOFTWARE)

## ❑ Hardware: interconnectors (CEF)

- Morocco-Spain already connected
- Turkey connected to Greece and Bulgaria
- Several projects, but slow moving:
  - Tunisia-Italy (ELMED PIC, TuNur)
  - Algeria-Spain and Algeria-Italy
  - Israel-Cyprus-Crete (PIC)
  - Egypt-Cyprus-Crete



## ❑ Gas transport infrastructure underutilised, could be used for hydrogen (or blend)

- MEG low utilisation rate
- Medgaz empty
- Trans-Med declining use trend to persist
- Average utilisation of LNG terminals < 25%



## ❑ More

- Sector Coupling, optimize across energy forms
- Some harmonization of market design and convergence in market operations
- Cooperation between national TSOs (and between gas and electricity SO) and National Regulatory Authorities

# Thank you

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# Back-up Slides

# The €1 850 billion EU Recovery Plan



## Next Generation EU

a new recovery instrument of €750 billion which will boost the EU budget with new financing raised on the financial markets for 2021-2024

**Next Generation EU** includes a new Recovery and Resilience Facility building on the European Semester and **National Energy and Climate Plans** as a basis for funded reforms.

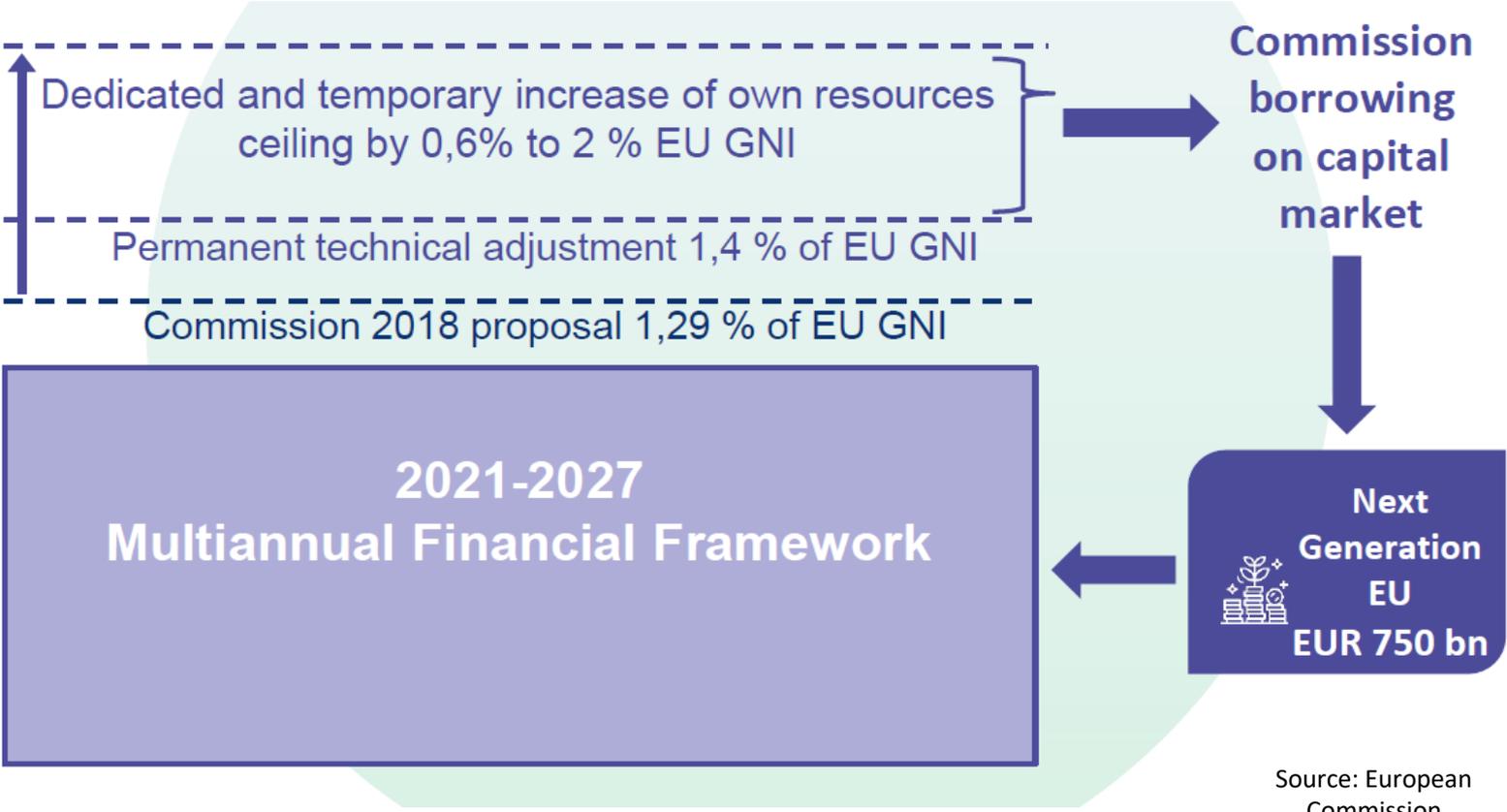
Source: European  
Commission



**A reinforced long-term budget of the EU**  
for 2021-2027 (€ 1 100 billion)

A total of €87 billion for the **Neighbourhood, Development and International Cooperation Instrument**, via a new External Action Guarantee, and the **European Fund for Sustainable Development** to support partners – in particular in the Western Balkans, the Neighbourhood and the rest of Africa – in their efforts to fight and recover from the impact of the pandemic;

# EU Recovery Plan: How does it work?



# The EU Recovery Plan- Timeline

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- **May 2020**  
Commission proposal for the Revised Multiannual Financial Framework 2014-2020 and 2021-2027 and Own Resources Decision, and sectoral legislation
  - **by July 2020**  
European Council: Political agreement on Multiannual Financial Framework 2014-2020 and 2021-2027 and Own Resources Decision
  - **by summer 2020**  
European Parliament's consultation on Own Resources Decision
  - **early autumn 2020**  
Adoption of the revised Multiannual Financial Framework 2014-2020 and corresponding sectoral legislation
  - **October 2020**  
European Council
  - **December 2020**  
Adoption of the revised Multiannual Financial Framework 2021-2027 (European Parliament's consent); Adoption of the Own Resources Decision (Ratification by all Member States in line with their constitutional requirements)
  - **January 2021**  
Multiannual Financial Framework 2021-2027 implementation starts

Source: European  
Commission

# POWER SYSTEM FLEXIBILITY

## THE PROBLEM AND THE SOLUTIONS

Dispatchable  
power plants

Demand side  
Response

Energy storage  
facilities

Interconnection  
with adjacent  
markets

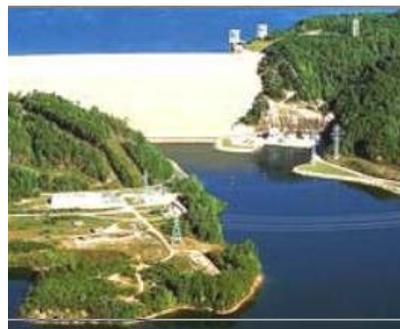


Gas-fired  
power plant



Industrial

residential



Pumped hydro  
facility



Scandinavian  
interconnections

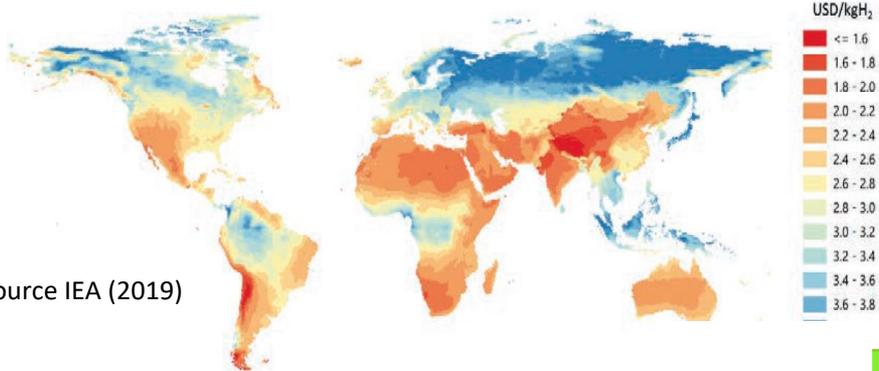
Numerous definitions but flexibility can generally be defined as the ability of the power system to cope with sudden and unexpected changes in demand/supply

# Sector coupling, also a source of flexibility (DSR, storage)

- Concept initiated with the coupling of the transport sector with the power sector: use electric vehicles (EV) as batteries and let power flow from EV to the grid (V2G)– since cars are parked 95% of the time
- Massive electrification of end-use sectors create new loads high in capacity but low in energy, if not properly managed. But if end-use sectors are coupled with each other and with power sector, DSR potential and storage solutions are increased
- Coupling electricity and gas (incl green gas and hydrogen) sectors is also a source of flexibility

# The Mediterranean also has a role to play in hydrogen for Europe

## Green hydrogen costs



Source IEA (2019)

## Potential suppliers of hydrogen to Germany

