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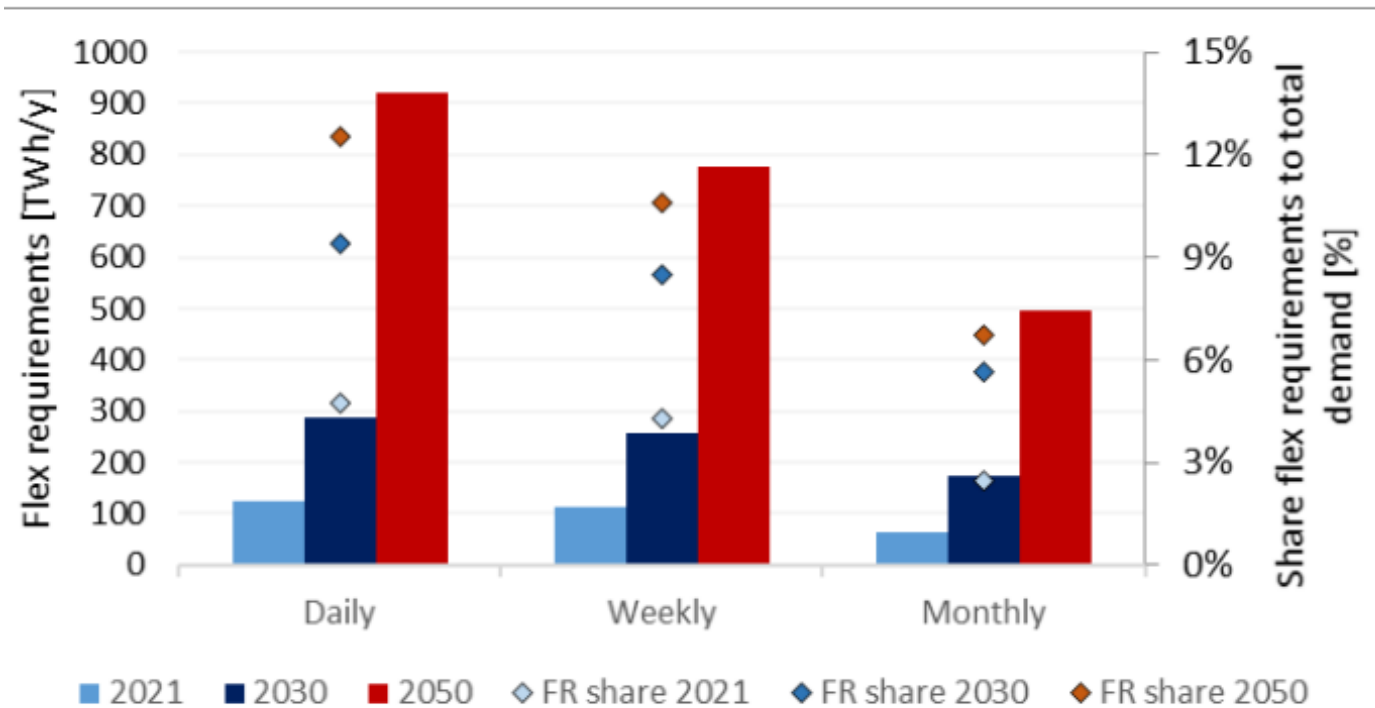


Flexibility solutions in the system and electricity market

*European Commission – DG Energy
Internal Energy Market*

Flexibility needs are increasing

The need for all flexibility types will increase.



Increase of flexibility needs, source: JRC

Flexibility needs are diversified

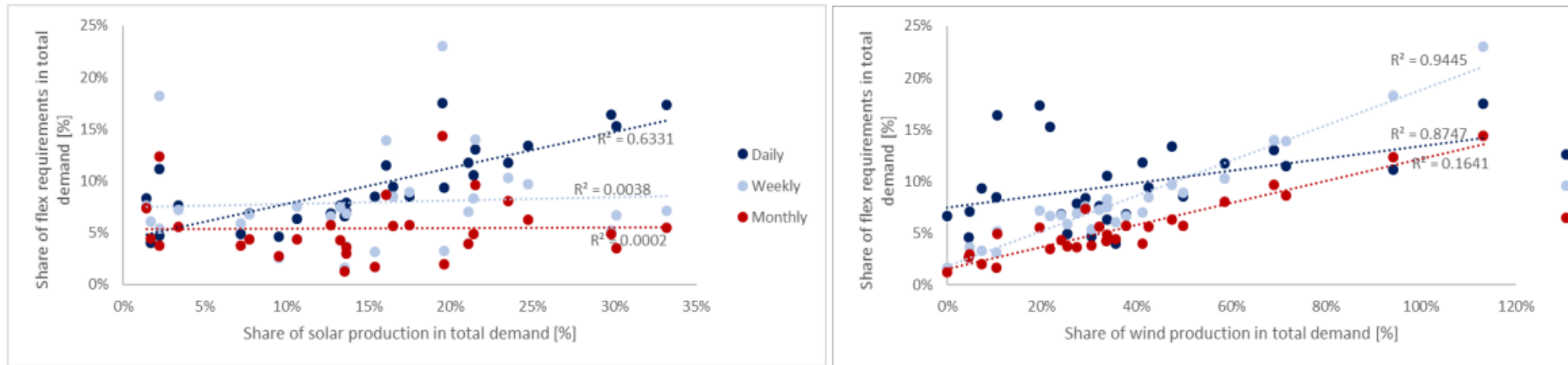
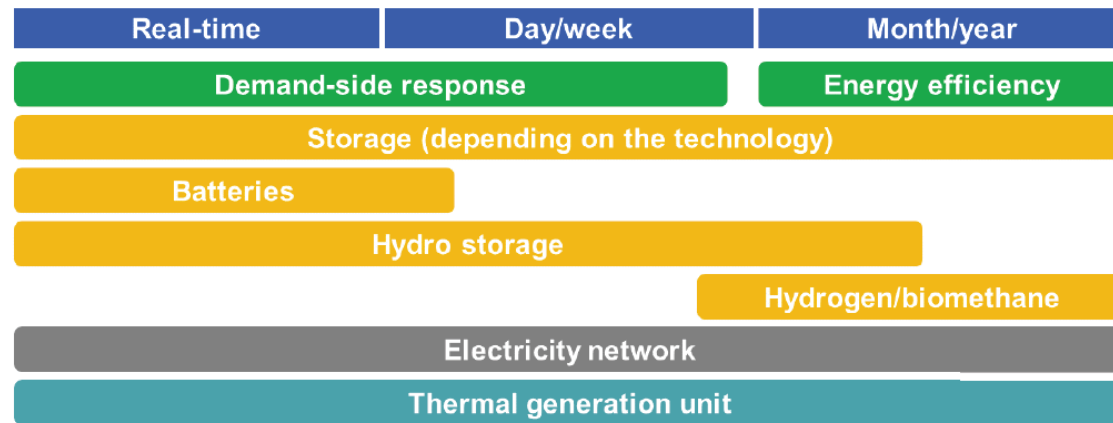


Figure: Share of daily, weekly and monthly flexibility requirements in total demand in relation to share of solar (left) and wind (right) production in 2030. Dots represent EU Member States, dotted lines are timescale trend lines.

Different flexibility solutions are needed

To cope with different needs such day-night generation differences, wind patterns fluctuations and seasonal patterns, various technologies will provide flexibility services.

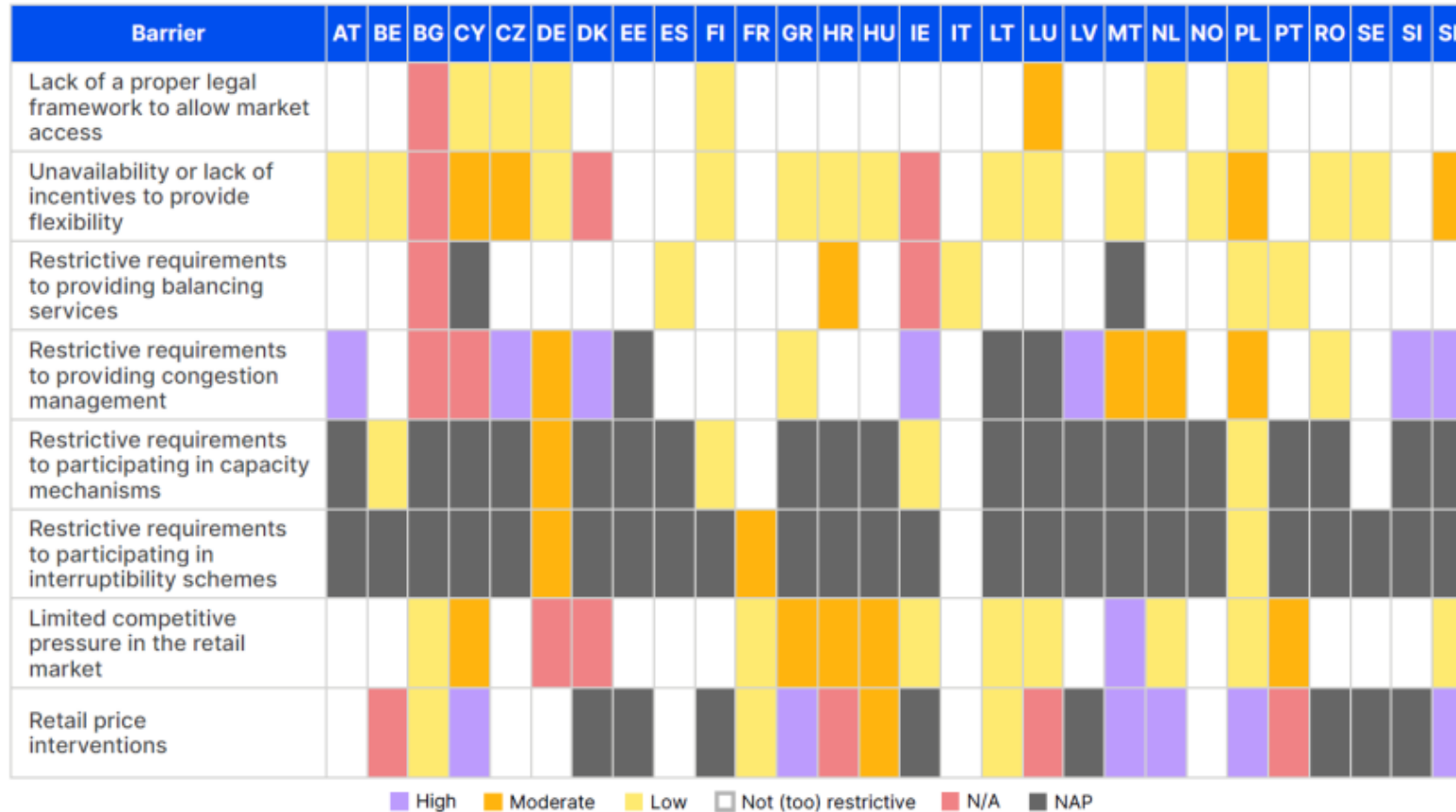
Figure 18: Flexibility services provided by various technologies



Source: ACER.

Note: The list of technologies is non-exhaustive (with e.g. the storage category covering several different technologies). As mentioned, coupling electricity with other energy sectors (sector integration) may provide significant flexibility services.

Diverse barriers to distributed energy resources



Source: ACER monitoring, 2024

The regulatory framework: What is ongoing to develop flexibility solutions?

The Clean
Energy Package

COM
recommendations
on storage

New network code
on demand
response

Electricity market
design reform

The implementation of the Clean Energy Package is still ongoing

The Electricity Regulation and Directive defines different provisions which are key for the development of flexibility.

Open the electricity markets to demand response, storage and other flexibility sources, incl. distributed

Use of flexibility by system operators, in particular in distribution networks

Active customer

Demand response through aggregation

Ownership of storage

Network development plans

COM recommendations on storage

- Consider the **double role of “consumer-producer” of storage**
- **Identification of flexibility needs** across different timescales, and consider flexibility potential in grid development plans.
- Fill financing gaps for storage and flexibility solutions
- Consider competitive bidding processes
- Potential improvements in the design of capacity mechanisms

This existing framework will be complemented with rules on Demand Response

Objective: Address remaining regulatory barriers for the development of demand side flexibility and other flexibility resources in the electricity market.

How: By introducing a new network code on demand response, including rules on aggregation, energy storage and demand curtailment

When: Draft to be submitted by ENTSO-E and EU DSO Entity by May 2024 to ACER, submission to EC by end of 2024.

- According to the current draft, the codes would cover in particular:
 - Market access (aggregation models, baseline, settlement)
 - Prequalification and process to engage in the market
 - Market design for congestion management and voltage control
 - TSO-DSO coordination, data exchange

In parallel, the reform of the electricity market design defines new flexibility provisions

Objective: Boost non-fossil flexibility: accelerate RES, impact positively the prices, bring system/grid services

New provisions:

1. Assessment of flexibility needs at MS level

- Based on a EU methodology
- ACER analysis at EU level and recommendations of cross-border relevance, including on removing barriers

2. Indicative national objective for non-fossil flexibility

- including specific contributions of both demand response and energy storage

3. Non-fossil flexibility support scheme

4. Enhance the use of flexibility services by system operators

- Network tariffs to incentivize the use of flexibility services
- Possibility to use data from dedicated metering devices