



European Union Agency for the Cooperation
of Energy Regulators

Tariffer, omstilling & markeder: Europæiske erfaringer og anbefalinger

Energiseminar 2023 - Forsyningstilsynet
København den 2. juni 2023

Christian Zinglensen, ACER direktør



- Kort om ACER's arbejde på tarifområdet
- Generelle refleksioner & enkelte 'tommelfinger-regler' (*med x gran salt*)
- 'Når den grønne omstilling rammer tarifferne ...': Gammel vin på nye flasker?
- (*'Bonusrunde': EU's elmarkedsreform: Nogle overvejelser*)

ACER's recent report & identifying 'best practices'

ACER

Report on Electricity Transmission and Distribution Tariff Methodologies in Europe

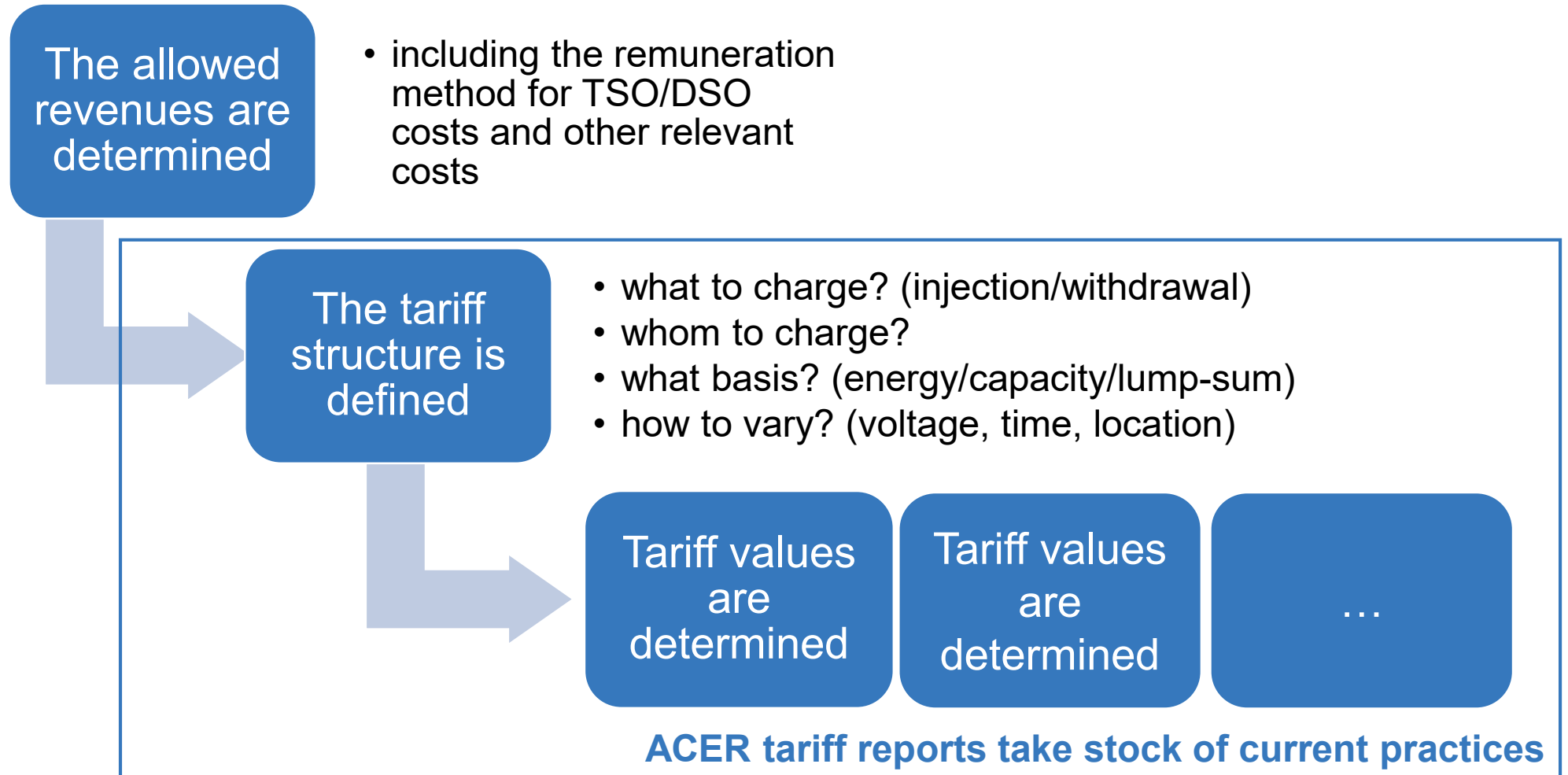
January 2023

PLEASE CONTACT ELECTRICITY@ACER.EUROPA.EU REGARDING THIS DOCUMENT FOR
ANY QUESTIONS YOU MIGHT HAVE.

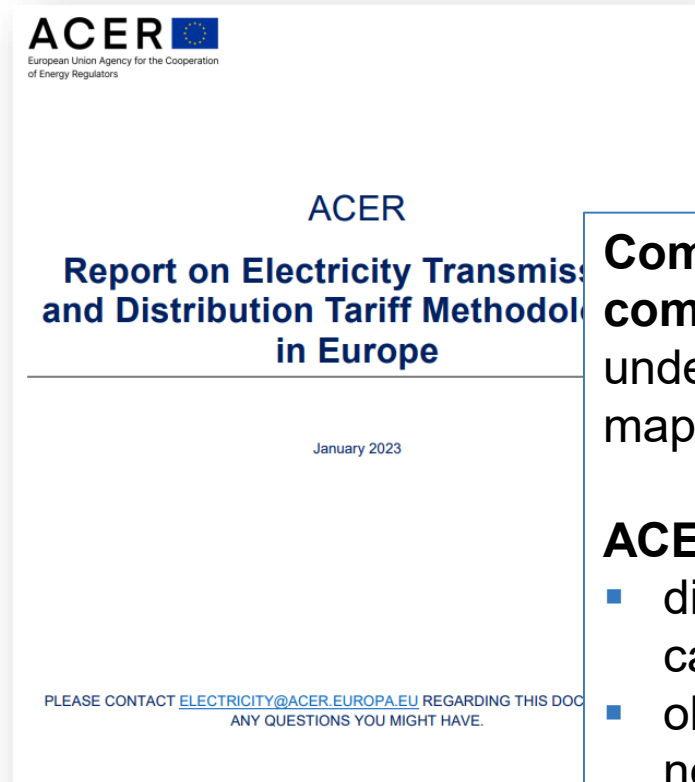
Current focus is to increase transparency and comparability in tariff-setting and identifying best practices:

- In 2019, ACER has been assigned to issue every 2 years a best practices report on network tariff methodologies. The issued reports focused on how the tariff structure is defined and how the tariff values are determined and NOT on how the allowed revenues are set. They reviewed all EU Member States + Norway.
- NRAs shall duly take it into consideration when fixing or approving tariffs or their methodologies

Three steps of tariff setting



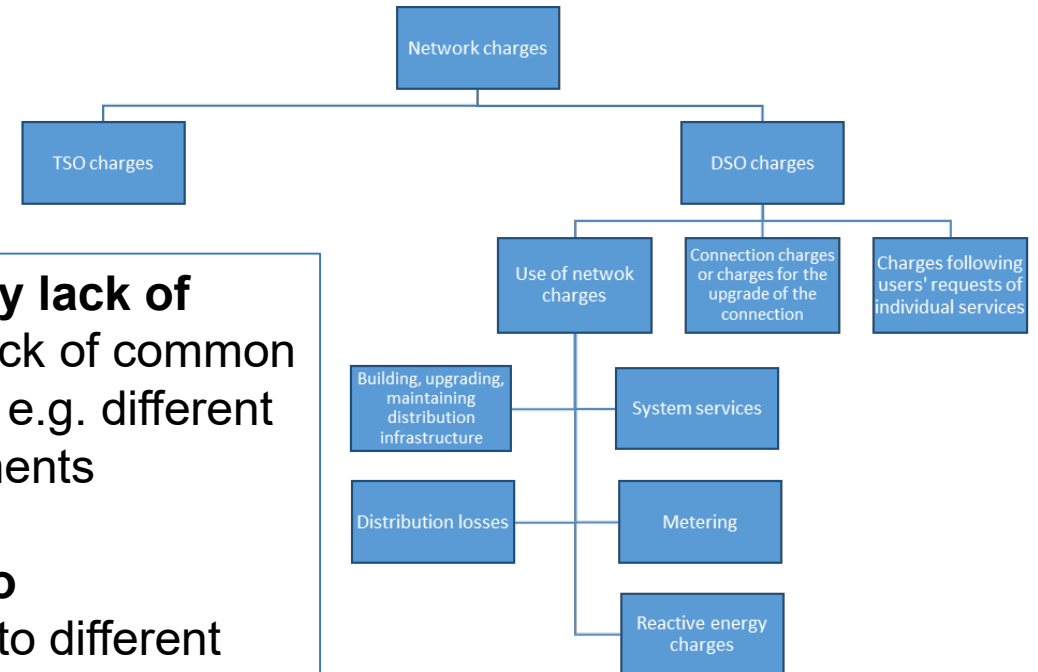
General reflections: Comparing across ...



Comparability is hindered by lack of common terminology and lack of common understanding of terminology, e.g. different mapping of costs to tariff elements

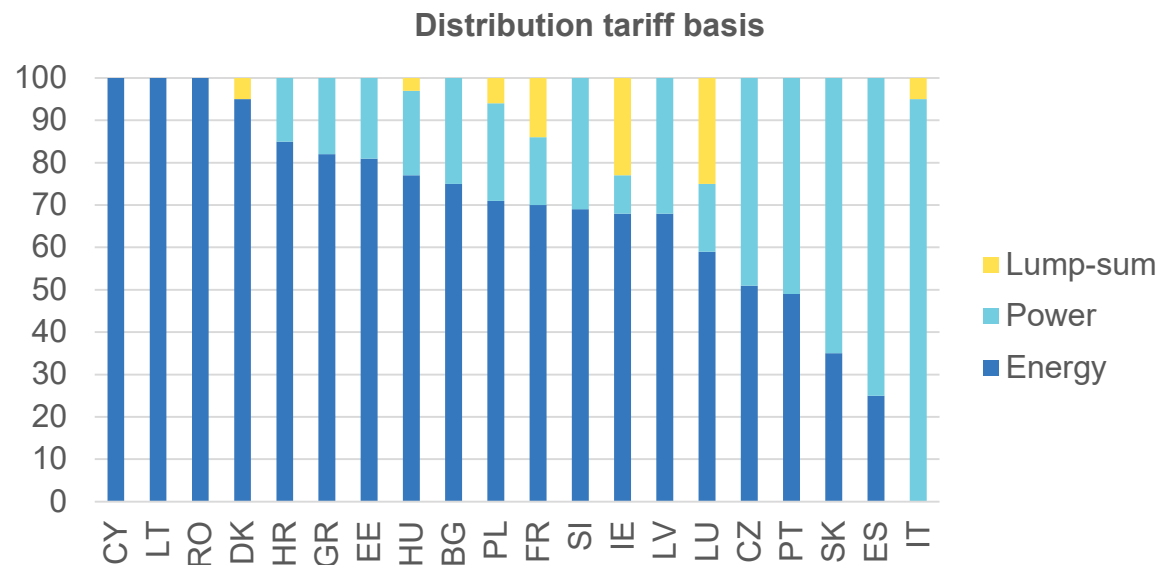
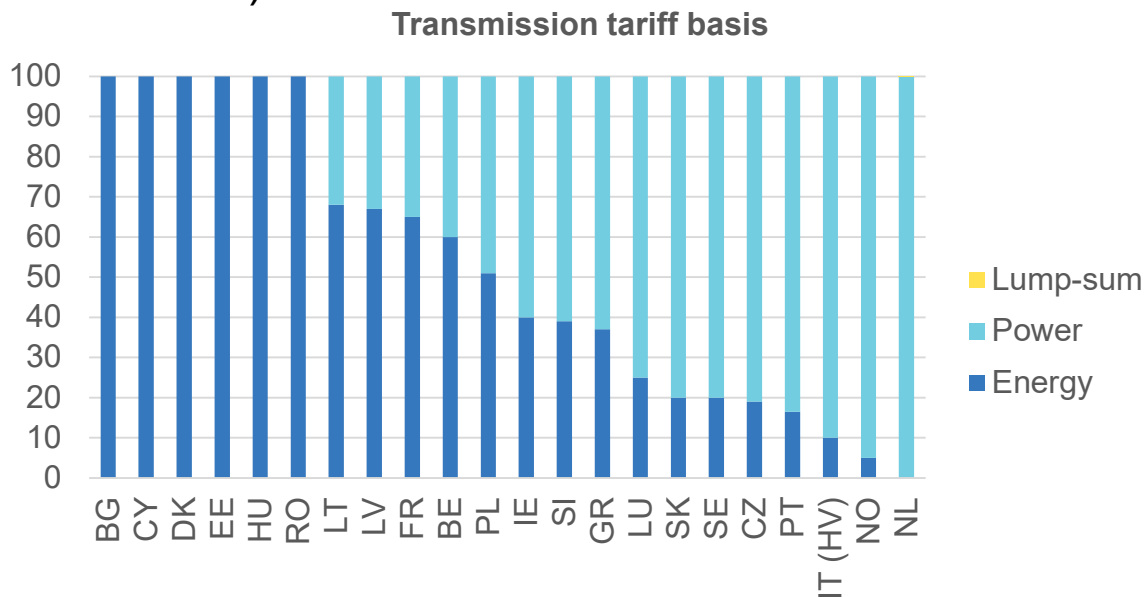
ACER recommends NRAs to

- differentiate network costs to different categories (at least those in the chart);
- obtain sufficiently granular data on network development and system operation;
- identify for each of these cost categories the most appropriate cost drivers.



General reflections: Withdrawal charges

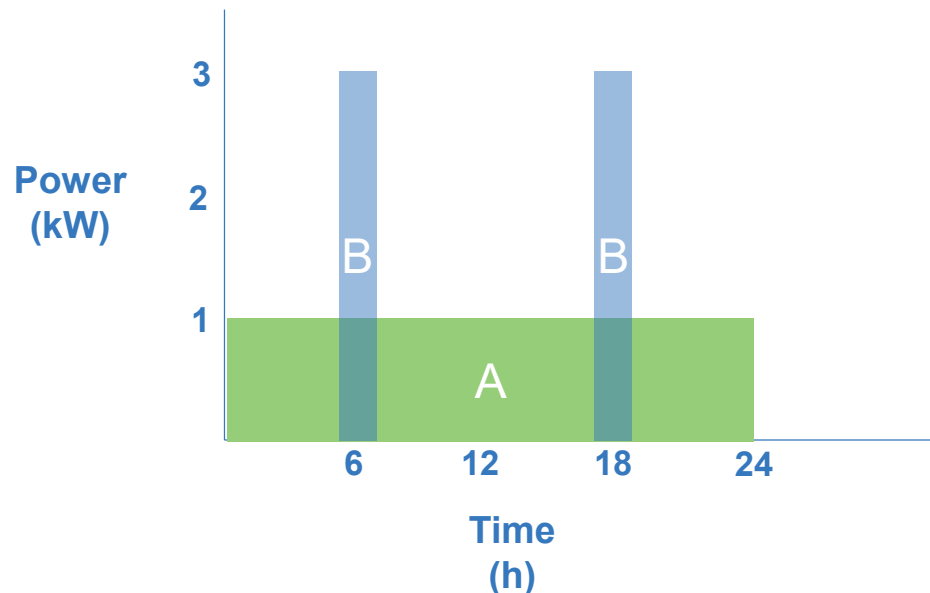
- Network users in most countries are charged both based on the power (capacity) and the energy (volume) withdrawn
- ACER considers **appropriate a gradual move to increasingly power-based (capacity) tariffs** to recover those costs which show correlation with contracted or peak capacity (but there are some caveats)



*AT, BE, FI, DE MT, NL, NO, SE are energy, power and lump sum based;

However, in view of new emerging users ...

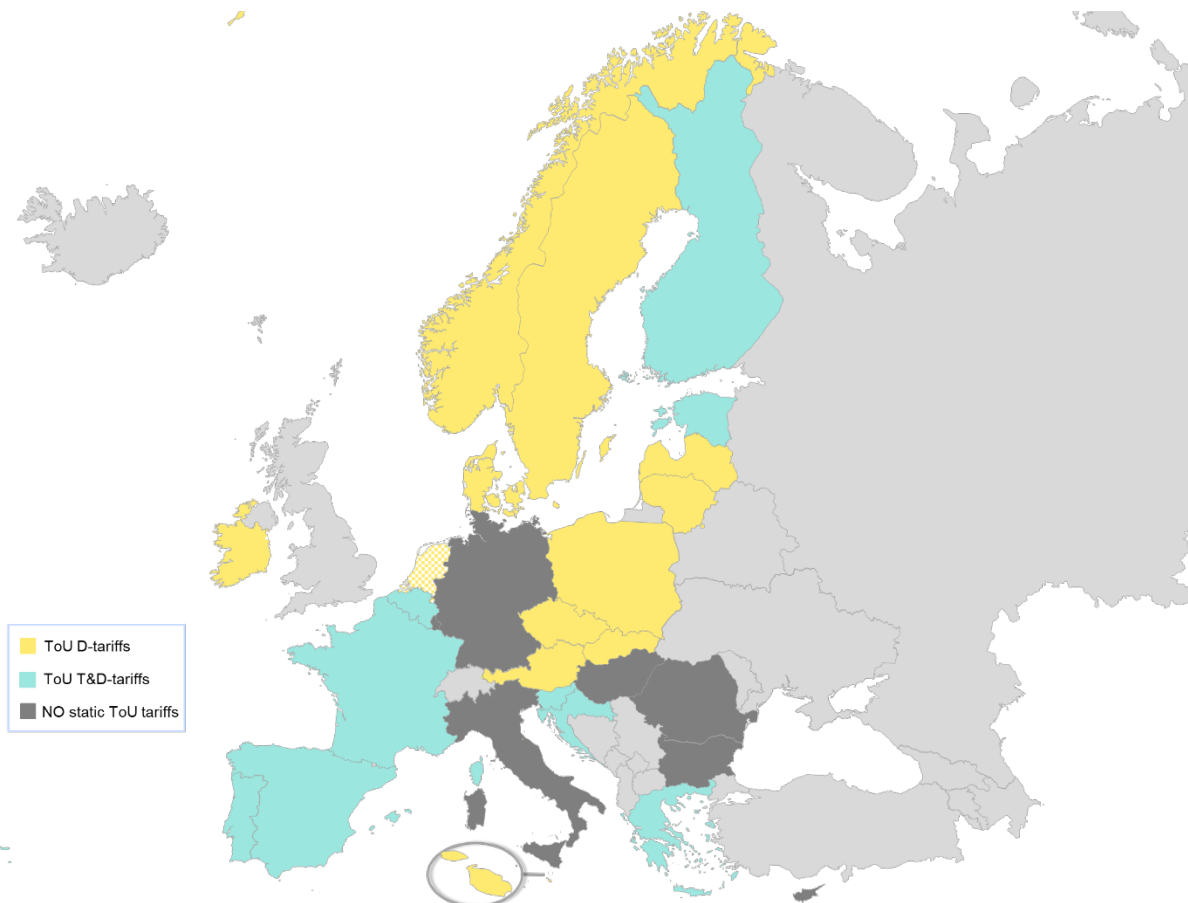
- Vast majority apply the same tariff structure to public re-charging points for EVs as to other users. Differentiated tariffs were introduced in some countries, typically providing “more energy-based” tariffs. See case studies of Italy, Portugal, Spain
- Since such public re-charging points may face low utilisation at the beginning, such tariff solutions can provide an incentive for investing in public charging infrastructure. (see chart below)
- **WARNING!** Such solutions may not be cost reflective. Exemptions, partial exemptions or discounts from the payment of the reflective costs by a network user are provided only if justified reasons exist. Necessity should be carefully considered and reassessed over time.



- Network user A has a load of 24 kWh and a capacity use of 1kW, Network user B has a load of 6 kWh and a capacity use of 3 kW
- In a volumetric tariff system (EUR/kWh), A would pay 4 times what B would pay
- In a capacity-based tariff system (EUR/kW), B would pay 3 times what A would pay

Time-of-use signals 1/2

- **Static time-of-use tariffs are widely used in distribution: 75% of the countries**



- For withdrawal charges and typically embedded in the energy-based component
- Most commonly used signals differentiate within the day (day vs. night, peak vs. off-peak) – often coexist with other signals (seasonal, weekend)
- Dynamic network tariffs are rather complex, require a sufficient level of automation – very rare
- Network users often have the possibility to opt-in or opt-out to being exposed to the time signals.

Note: In the Netherlands (NL), time-of-use distribution tariffs apply, but to a very limited extent

Time-of-use **gains a higher importance** than in the past (distributed generation, increasing demand and capability of network users)

- Useful tool for **reducing system peak-load**, which is a main driver for network investments (Effectiveness depends on multiple factors)
- Care should be given to the potentially conflicting time signals coming from **dynamic wholesale energy prices**
- Alternatives or complements to time-of-use tariffs exist, but no wide use of such instruments so far.
- Pilots, impact / evaluation **studies** on time-of-use tariffs are **often not performed**

(258) **ACER recommends that:**

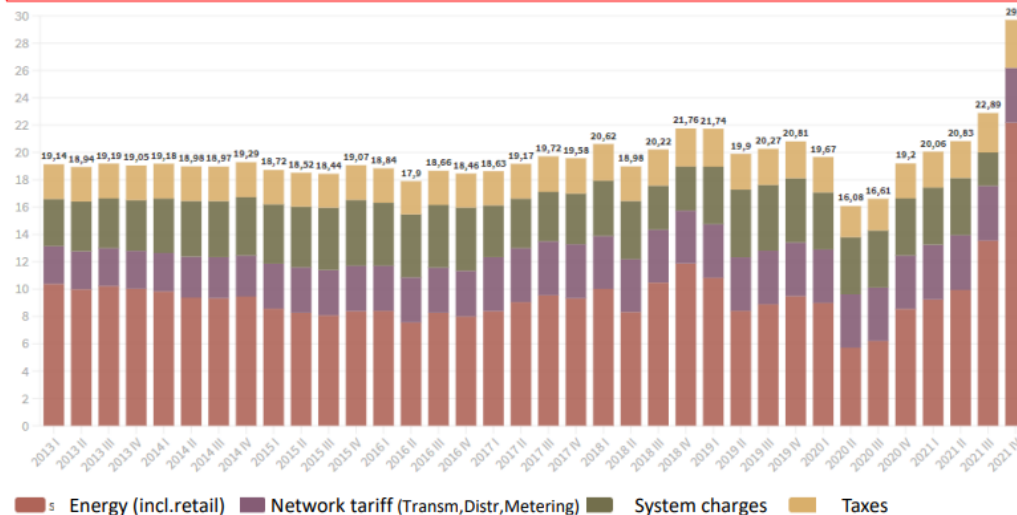
- a) Where time-of-use tariffs are introduced to reflect system costs, the network tariff structures and the signals should be mandatory for all network users, without a possibility to opt-out from them. Optionality may be temporarily reasonable when transitioning to a new time-of-use schedule in order to limit tariff impacts on network users.
- b) Where no time-of-use signals are applied, NRAs should investigate the need from cost-efficiency and/or network congestion point of view to introduce such signals. Such studies should aim to identify which elements (that may be local) affect the effectiveness and efficiency of time-of-use signals in order to justify a decision to apply such signals or not in a given context. Where time-of-use is already applied, the NRAs should evaluate their impacts and the appropriateness of the applied time bands and tariff signals on a regular basis.
- c) NRAs should improve data collection and analysis regarding individual network users, subject to the rollout of fit-for-time-of-use meters (i.e. meters which are capable to record time-of-use, e.g. different time bands), in order to support the design of more cost-reflective time-of-use tariffs, by also allowing higher granularity in their temporal differentiation.
- d) Where fit-for-time-of-use meters are largely missing, as a temporary solution, NRAs may design network tariffs by determining for different user profiles their contribution to the system peak.

Source: ACER network tariff report (2023), p. 67.

NB: ToU network tariffs vs ToU energy prices (Italy)

THE RELATIVELY SMALL IMPACT OF NETWORK TARIFFS ON THE FINAL PRICE (HOUSEHOLDS)

Household electricity prices in Italy, per quarter
(reference customer: **3 kW** capacity, **2700 kWh/year**, resident)



- **Network tariffs (violet bar)** account for around **20%** of the price in “normal” times
- In the recent high- price period, the network tariff impact is much lower, **down to 13%**

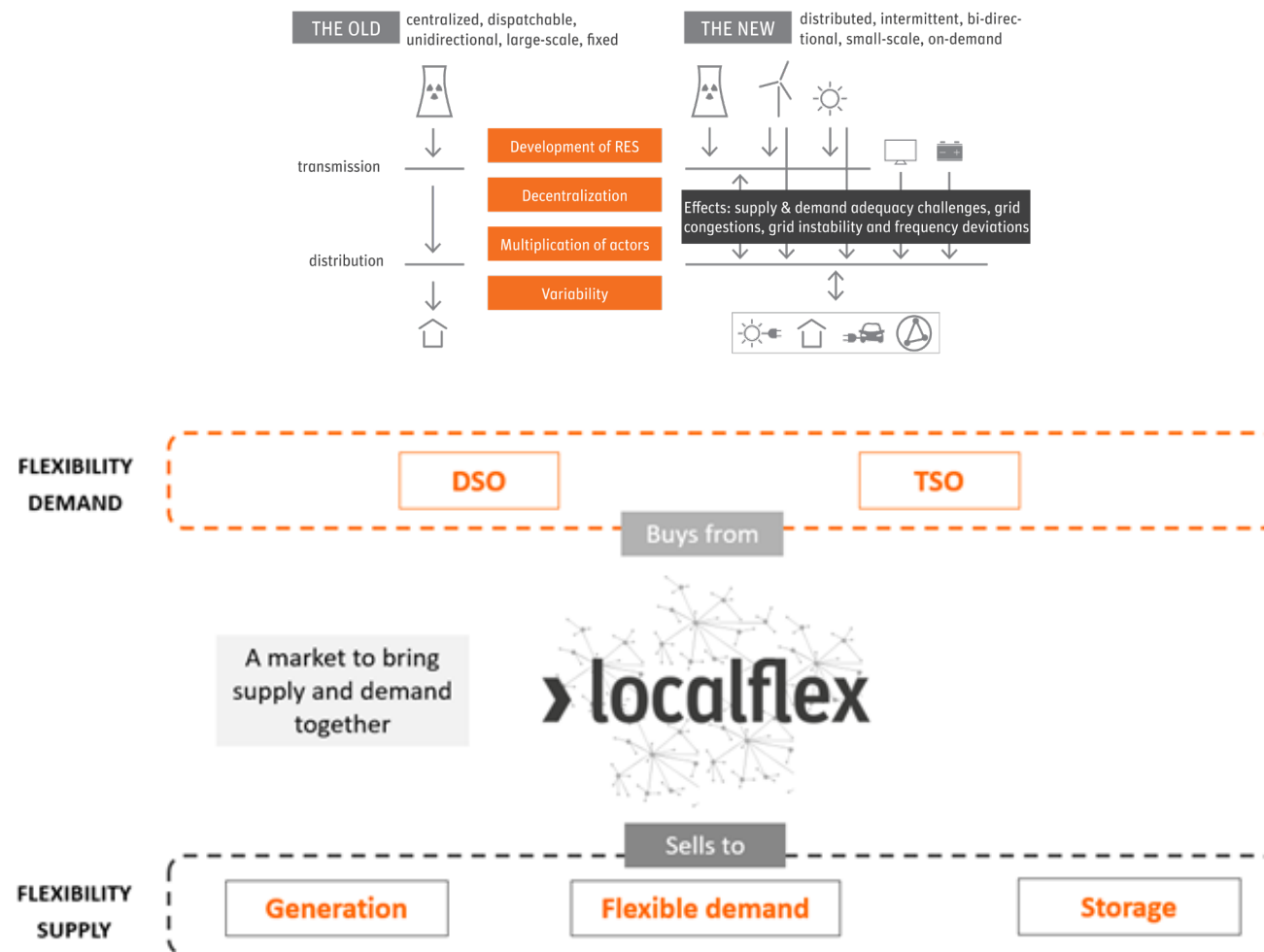
The effectiveness of ToU signals depends on multiple factors including its weight in the final electricity bill (e.g. low share of network charges may reduce willingness of network users to react to their cost signals)

Local flexibility mechanisms can be complementary

- Local flexibility mechanisms (including “local markets”, i.e. where service providers offer products for system operation services) gain in importance.
- They aim to mitigate local congestion in a cost-efficient way (e.g. instead of network reinforcement or expansion) and as such they may form an alternative or complement to using ToU network tariffs.

Other alternatives / complements:

- discounts for shifted load or a less varying withdrawal profile,
- options to contract different power levels at different times or
- direct/remote control by a system operator of the consumption by activating specific appliances (e.g. heat boilers)



Consultatie specificaties voor de aankoop van marktflexibiliteit, ondersteunende diensten en netverliezen 2023

Fluvius organiseert een marktbevraging over de specificaties voor marktflexibiliteit ten behoeve van congestie, ondersteunende diensten voor aansturing van reactief vermogen, en de van netverliezen.

Source: Fluvius, DSO Belgium, <https://partner.fluvius.be/nl/openbare-raadplegingen/consultatie-specificaties-aankoop-marktflexibiliteit-ondersteunende-diensten-netverliezen>



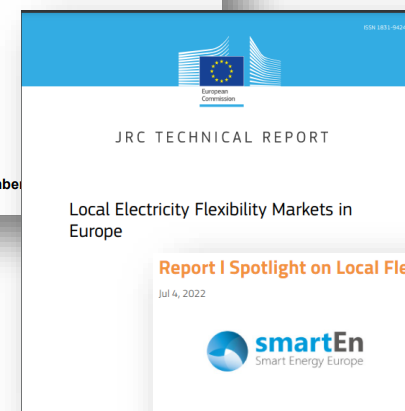
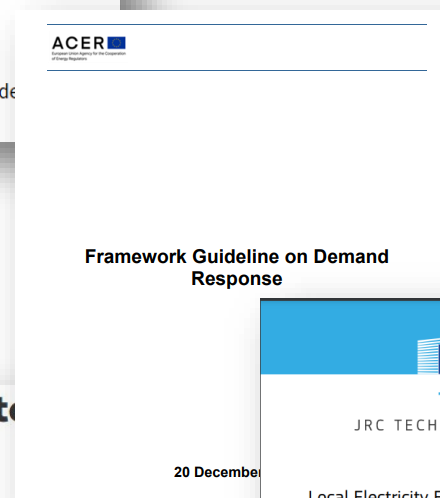
Source: <https://www.euractiv.com/section/electricity/news/eu-eyes-billions-worth-in-flexibility-from-local-electricity-grids/>

Slovenian power distribution firm invites consumers to offer flexibility services



Published February 21, 2023
Electricity distributor Elektro Ljubljana has invited its customers to apply for providing flexibility services.

Source: <https://balkangreenenergynews.com/slovenian-power-distribution-firm-invites-consumers-to-offer-flexibility-services/>



Report I Spotlight on Local Flexibility Markets
Jul 4, 2022



Local Flexibility Markets
smartEn Spotlight

Local flexibility markets across Europe are still in an infancy stage due to the slow implementation of Article 32 of the Electricity Directive. Nevertheless, a few best practices can be found in Great Britain, the Netherlands and Norway, where initiatives of national regulators, system operators and joint projects with market participants have created a positive environment to develop innovative marketplaces.

Energy transition & emerging network users

- In the context of the energy transition, power-to-X facilities, publicly accessible recharging points for electric vehicles (EV) and energy communities have gained attention for their potential to improve overall system efficiency. (Note: may also increase the capacity needs in distribution grids and thus the costs).
- Specific tariff regime or measures implemented or planned in some countries for these emerging users, except for P2X, where only Austria reported specific tariff treatment (i.e. exemption from withdrawal charges for the first 15 years after installation). Ongoing work/studies were reported for several other countries.
- As a general rule, if a network user both *withdraws from* and *injects into* the grid (e.g. storage, prosumers), both network uses should be considered when setting the tariffs, by properly taking into account the potential cost-offsetting effect and the overall cost impact to the network.

EV-charging (Publicly accessible recharging points or private):

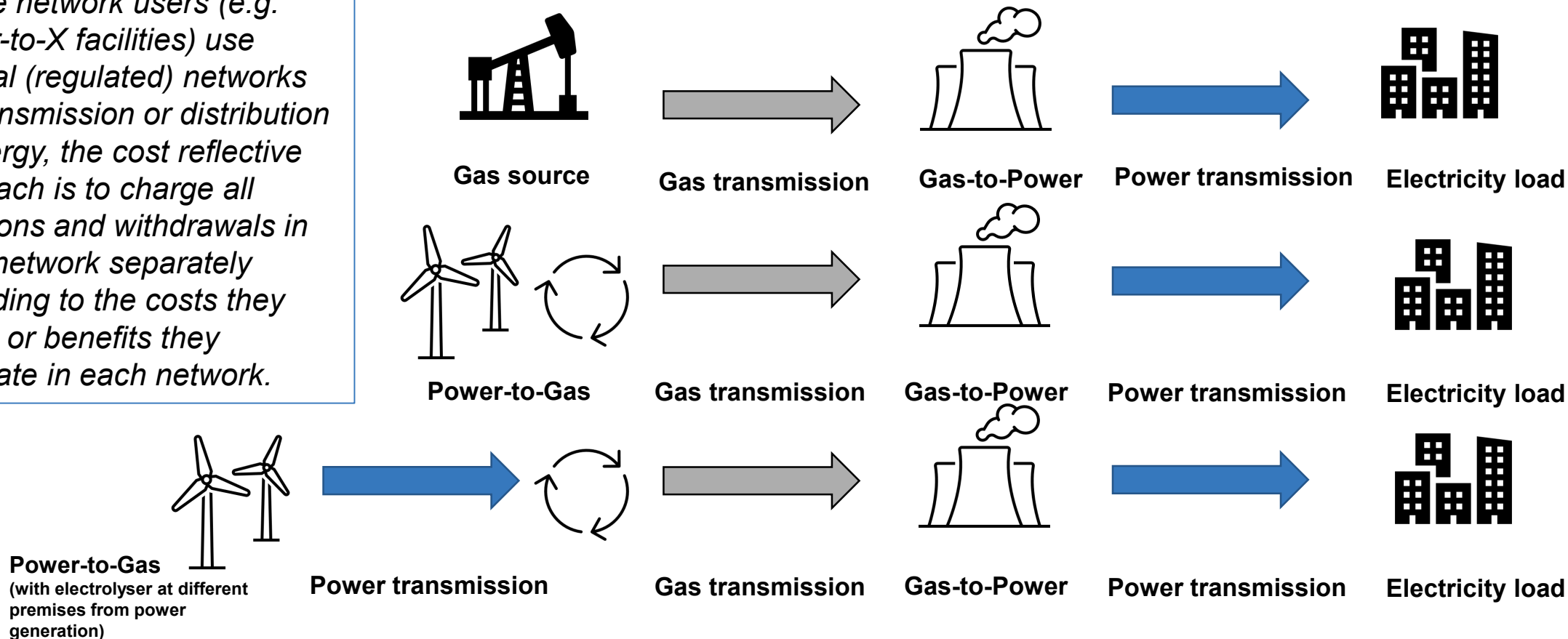
- Specific tariff for publicly accessible EV recharging points (SK)
- Different tariff structure (i.e. energy-based vs. mixed) or similar structure with a greater weight of the energy component (IT, PT, ES)
- Off-peak withdrawal charge for EV recharging (CZ, MT)
- DSO right, under defined conditions, to interrupt EV charging in case of network congestion (CZ)
- Special increase of “technically available capacity” for private EV charging (IT-experimental initiative)
- Vehicle-to-grid (V2G) (PT - pilot project in Azores).

Energy Communities

- A specific tariff regime for energy communities implemented (PT)
- Reduced system utilisation charges for participants in renewable energy communities (AT)
- Exemption of network tariffs for the part of the RES produced and consumed within communities (LU)
- Regional regulator is allowed to grant tariff exemptions for a limited duration (pilot projects, BE-Brussels region)

Power-to-X vs. X-to-power: Something new under the sun?

Where network users (e.g. power-to-X facilities) use several (regulated) networks for transmission or distribution of energy, the cost reflective approach is to charge all injections and withdrawals in each network separately according to the costs they cause or benefits they generate in each network.



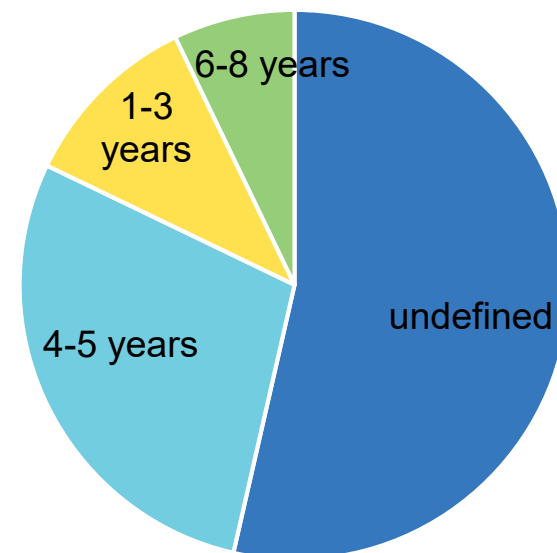
To close: Predictability and stability still ‘in fashion’

- Tariff stability appears to have been so far a key objective. Several ongoing and planned changes, often related to better controlling network investment costs, seem to be triggered by energy transition.

Frequency of setting D-tariffs

- **ACER recommends that**

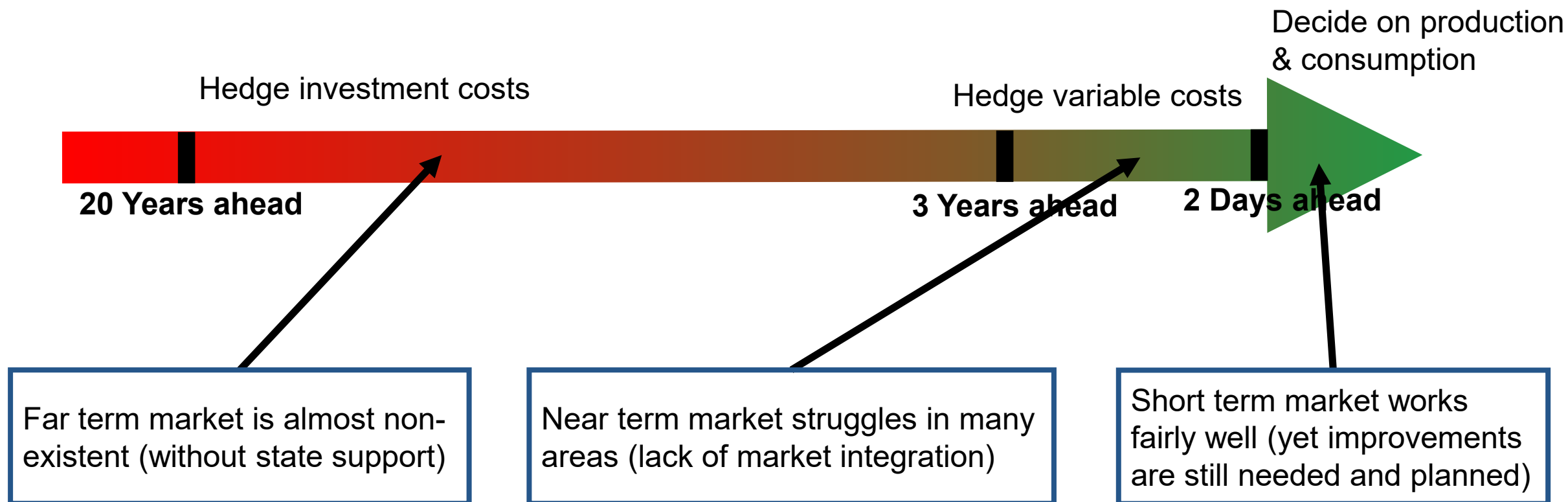
- The length of the tariff methodology period should be at least 4 years (the set methodology may be subject to revision before, due to rapid changes in the sector, if duly justified).
- Network tariff values should be updated at least yearly based on variations of the drivers defined by the tariff methodology and on inflation.
- A multi-year transition process should be preferred when changes in the tariff methodology significantly impact the tariff values for individual grid users.



Source: ACER network tariff report (2023)

EU electricity market design under debate: Some reflections

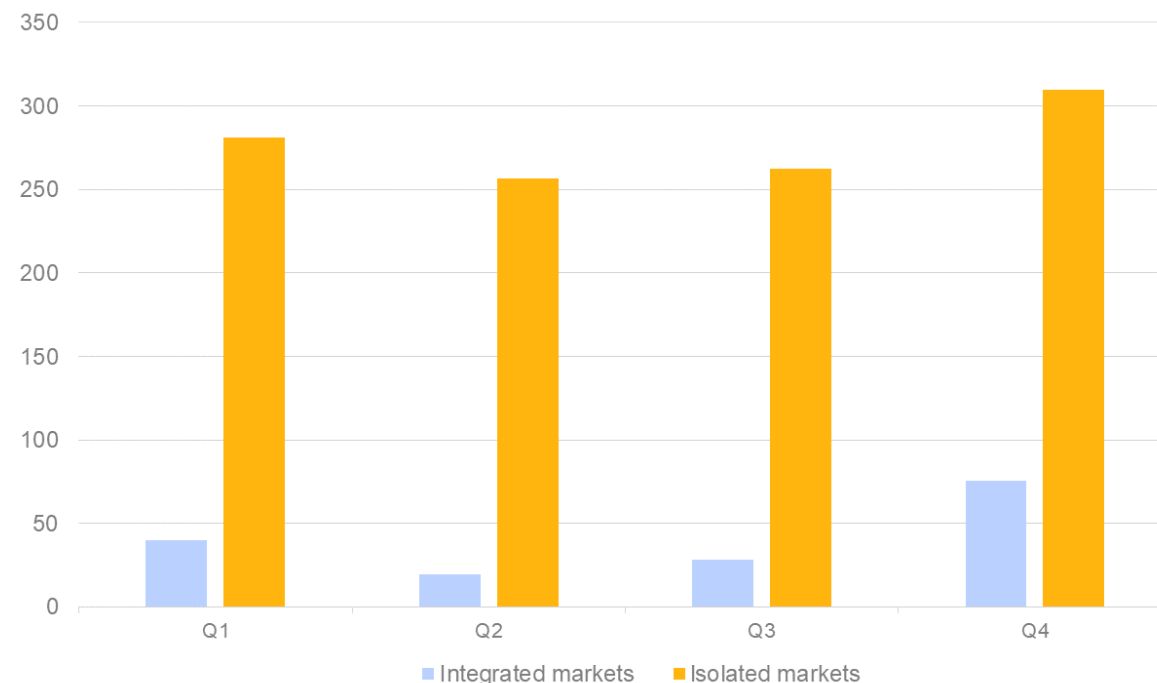
Electricity market diagnostics



Key tools to tackle price volatility

- Improved forward markets
- Longer-term contracting may play a role (if done well, avoiding distortive effects)
- **Preserve price signals: today's volatility triggers tomorrow's flexibility (technologies)**
- Strengthened EU market integration
- Consumer protection remains key

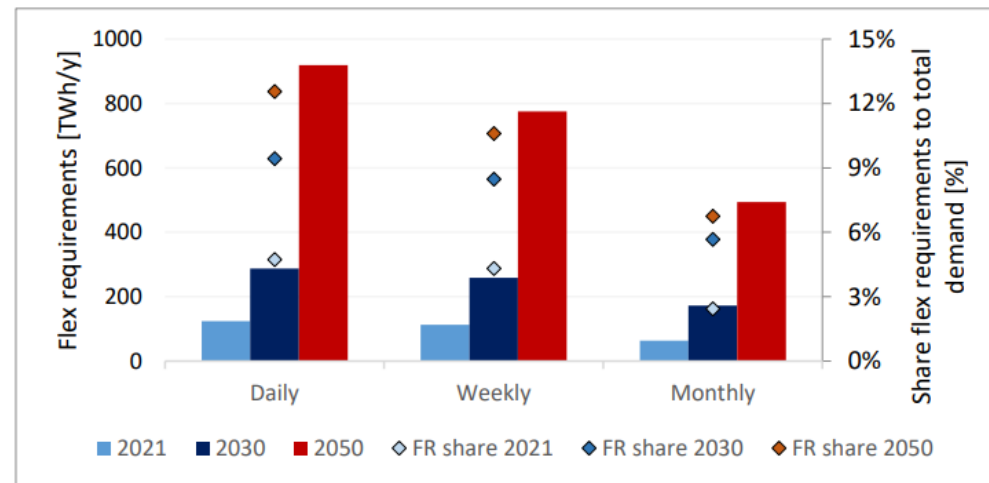
Price volatility (EUR/MWh) in integrated and isolated electricity markets in the EU in 2021



How to manage volatility? – Flexible resources

- The need to cushion daily, weekly and monthly swings will grow heavily by 2030 & multiply by 2050.
- Flexibility needs vary. In some jurisdictions support schemes may initially speed up deployment.
- **...BUT**, markets remain key to scale and ensure affordable prices in the mid- and long-term.
- **ACER suggests to add an EU view to national flexibility assessments to calibrate wider needs.**
- **Focus in particular on dismantling barriers for flexible technologies to enter the market.**

Figure 6: Daily, weekly and monthly flexibility requirements and their share to total demand (FR share) in the EU for 2021, 2030 and 2050.



Source: JRC analysis.

EU-ACER @eu_acer · 21 Dec 2022

ACER sees scope for #GridOperators to simplify their #Electricity balancing prequalification processes to
 ➡ enable new and small #market participants including #DemandResponse provide flexibility

***Tak for muligheden.
Ser frem til diskussion.***
