



European Union Agency for the Cooperation
of Energy Regulators

Electricity distribution network tariffs

with focus on network users who are
both injecting into and withdrawing from
the grid

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Public

- **Introduction**
- **Role of ACER**
- **Cost reflectivity and national practices**
- **Limitations to cost reflectivity**
- **Other recommendations**

- The electricity **networks play a key role in the energy transition.**
- Network tariffs aim to **recover the costs** incurred by TSOs and DSOs
- Network tariffs should **support overall system efficiency** by providing
 - appropriate incentives to the system operators and
 - appropriate price signals to network users.

- Network tariffs **can be designed in multiple ways**, depending on the principles pursued and balance between them.
- **Rapidly evolving energy system** (increased RES integration, demand by electrification, more active role of network users, ...) **makes tariff setting an even more complex task.**

- **No binding harmonisation** of electricity network tariff setting in Europe (except some general rules, tariff setting principles and cap on average transmission G-charge)
- Regulation (EU) 2019/943 assigns the duty to ACER to issue (and update every 2 years) a **best practices report** on network tariff methodologies.
 - Link to past ACER works on network tariffs :
https://www.acer.europa.eu/en/Electricity/Infrastructure_and_network%20development/Pages/Tariffs.aspx
- It should contribute to increase transparency and comparability in tariff-setting
- NRAs shall duly take it into consideration when fixing or approving tariffs or their methodologies

How to ensure cost reflective tariffs which support overall system efficiency?



- **Network tariffs should not include costs of renewable support schemes or other unrelated policy costs, in order to facilitate their cost reflectivity**

Some national practices:

In several Member States, RES support schemes or other policy costs are recovered

- as part of the distribution tariff (e.g. EV-recharging points operated by the DSO in LU, past employee downsizing costs in PT),
- as a separate tariff element within the distribution tariff (e.g. taxes, local retributions, pension scheme of DSO employees, public service obligations, cost of public lights in Flanders - BE) **Or**
- as additional surcharges, levies or taxes on network users (e.g. RES support in AT, SI, ES; CHP support in PL, energy efficiency in SI; stranded generation costs in ES; market operator costs in SI)

Network uses and caused/avoided system costs

- If a network user only withdraws or injects, in principle, only the costs relevant for withdrawal or injection should be attributed to this user. **If a network user both injects and withdraws, both should be considered, by properly taking into account cost-offsetting effect and overall cost impact to the network**

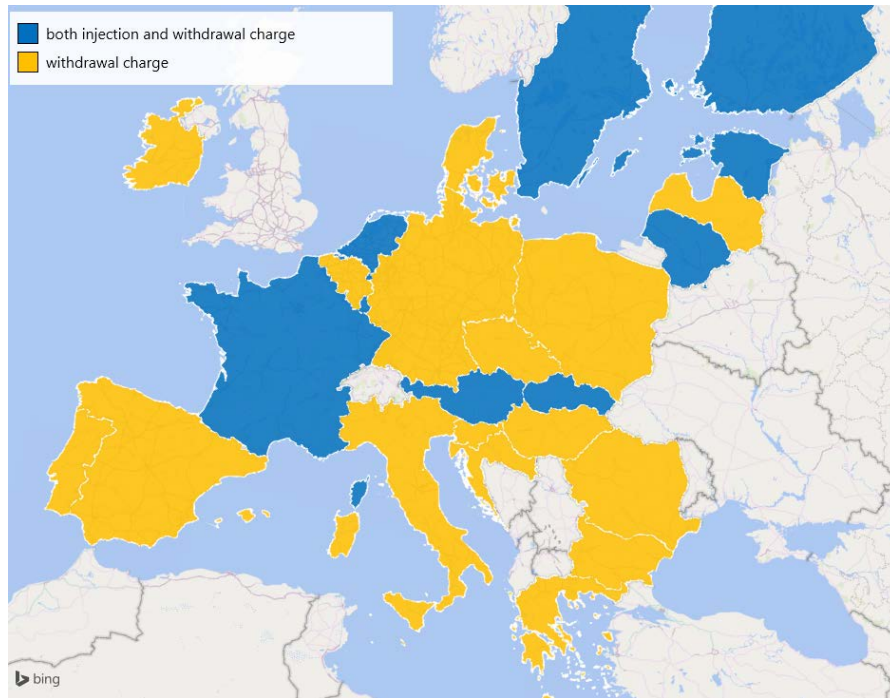
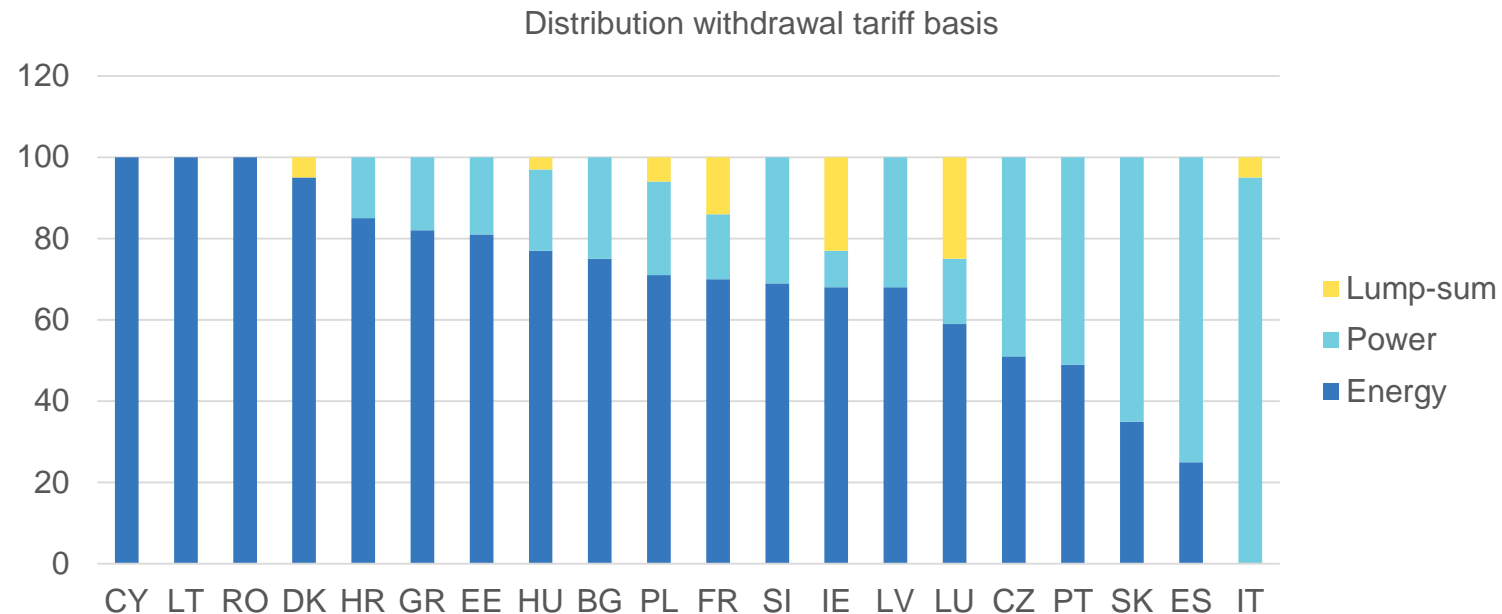


Figure 1: Distribution tariffs for (non-storage) network users who are both injecting and withdrawing (2020)

Figure 2: (Storage) network users connected to the distribution grid subject to neither injection nor withdrawal charges

	Member States
Hydro-pumped energy storage	BE, BG, HR, FI, IT, PL, ES
Other storage (e.g. batteries)	BG, HR, FI, IT, PL, SI, ES

- **A gradual move to increasingly power-based distribution tariffs to recover those costs which show correlation with contracted or peak capacity is considered appropriate by ACER**
 - Power-based tariffs, especially when referred to actual maximum power during peak load periods, may feature a higher complexity and can have a negative impact on some tariff principles, such as simplicity, predictability and transparency.
 - Time-differentiated tariffs with sufficient granularity may achieve similar cost reflectivity



Great variety in the applied tariff basis, but energy based charges tend to have a higher weight in the cost recovery

- **Energy-based charges should account separately for the electricity fed into the grid and the electricity consumed from the grid** (i.e. “no netting” - where the excess electricity injected into the grid is used to offset the a later withdrawal – ensuring that they contribute in an adequate and balanced way to the overall cost sharing of the system)

Some national practices

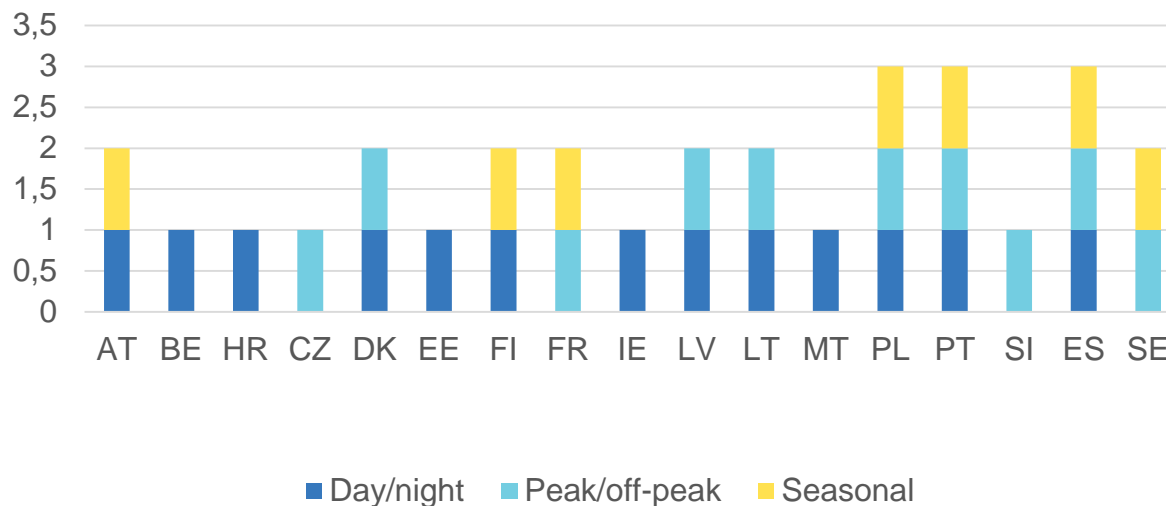
Tariff is based on net withdrawal	Tariff is based on gross withdrawal
CY, DK, HR*, HU, LT, PL, SI**	AT, BE-BRX, DE, EE, GR, MT, PT

*only for some household prosumers

**only for self-consumers or self-consuming communities with contracted capacity up to 43 kW

- **Time-of-use tariffs can be a useful tool for reducing system peak-load, which is a main driver for network investments.**
 - Time-of-use gains a higher importance than in the past by increasing distributed generation, electricity demand and capability of network users to respond to time signals.
 - Care should be given to the potentially conflicting time signals given by the time-of-use energy prices

Time-signals in distribution tariffs



Most Member States apply time-of-use distribution tariffs. Different time-signals often co-exist.

- **Network tariffs shall be non-discriminatory** (Not discriminate positively or negatively between production connected at the distribution and transmission level or against energy storage or aggregation; not create disincentives for self-generation, self-consumption or for participation in demand response.)
- Exemptions, partial exemptions or discounts may be reasonable in certain instances, but they shall be applied in a non-discriminatory manner and only if justified reasons exist. The necessity of any different treatment should be carefully considered and reassessed over time.

Some examples of exemptions/discounts for network users which are both injecting and withdrawing

AT	PHES receives a discount on withdrawal charge. Reasoning: PHES units contribute to grid balancing and stability and provide reserves. Under 5 MW capacity no injection charge.
DE	PHES and non-PHES storage under specific conditions (capacity increase, commissioning date) are exempted for 10 or 20 years from the payment of withdrawal charges.
PT	Self-consumers / RES energy communities acting as collective self-consumers can benefit from a deduction of the tariff components at the higher voltage level. Conditional on the non-observation of reverse power flows (from lower to higher voltage levels).
SI	Small RES and CHP producers (up to 50 KW) pay only the volumetric part of the distribution tariff for withdrawal, due to relatively low connection capacity for withdrawal.
SE	RES prosumers and producers with less than 1500 kW installed capacity pays only parts of the injection tariff to ease the burden for small producers and to promote small scale renewable generation.)

- **Pursuing cost reflectivity is not always easy. There are several challenges and limitations:**
 - Identification of costs attributed to a particular user and its cost drivers
 - Ability or willingness of network users to react to signals
 - Competition of generators across borders in the EU internal market
 - Potential conflict with other tariff principles (e.g. cost recovery, predictability, transparency)
 - ...

- NRAs to directly set the distribution tariff methodology or as a strict minimum approve the methodology;
- Systematic use of public consultations to interact transparently and inclusively with stakeholders;
- Publishing at least a minimum set of tariff information on annual tariff values, the methodology with covered cost categories, and the amounts recovered by each tariff element;
- Distinguishing the following tariffs / tariff elements: distribution (separate element for losses), transmission, purchasing system services, metering services;
- Setting the tariff methodology for at least 4 years;
- Tariff values to be updated yearly based on variations of the drivers defined by the tariff methodology and on inflation

Thank you. Any questions?

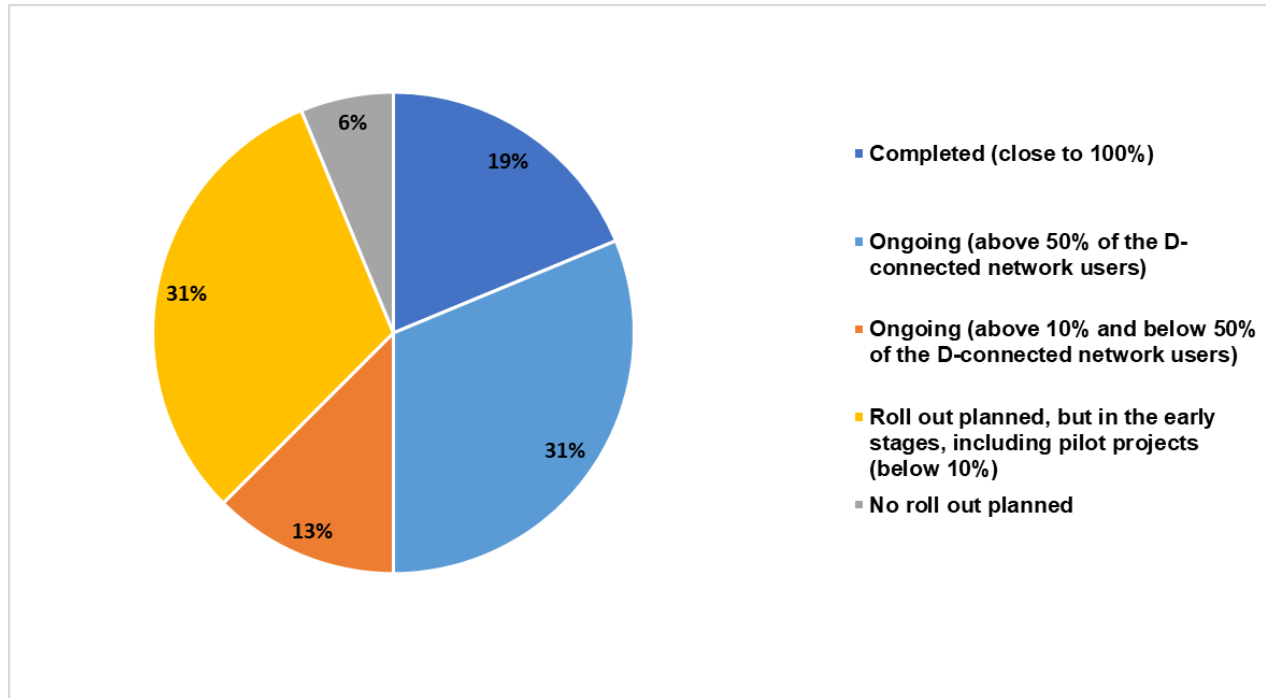


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The status of roll-out of smart metering systems:



- EE, FI, ES: roll-out of smart metering system is fully completed
- DK, FR, LV, MT, SI: for above 50% of the distribution-connected network users
- AT, PT and Flanders (BE): for between 10 and 50% of the users
- HR, CZ, IE, LT, SE and Wallonia (BE): the roll-out is planned but still in early stage (less than 10% of the users, or under the form of a pilot project)
- PL did not plan any roll-out

Figure: Stage of development of smart metering systems in the Member States with time-differentiated distribution tariffs (end 2019)