LCP Delta

smartEn
SMART ENERGY EUROPE

2025 Market Monitor for Demand Side Flexibility

Insights from LCP Delta's 7th annual assessment of demand side flexibility markets

About LCP Delta

LCP Delta provides data-driven research, consultancy and technology products

Expertise across...

- Generation
- Storage
- Power trading
- Solar
- Networks
- Flexibility services
- Clean molecules
- EV charging
- Home energy management
- Electrification of heat

Supporting clients to invest in and navigate the energy transition

We provide mission critical data & insight

Enabled by our market leading technology

Across the value chain

Driving your strategic & investment decisions

+ Investors
+ Energy companies
+ Asset & infrastructure owners & developers
+ Governments & regulators
+ Product manufacturers
+ Power traders

Coverage	Energy experts	Clients	Offices
Pan-European focus for a global client base	130+	250+	Berlin Cambridge Edinburgh London Paris

How we help

- Business growth advice
- Revenue forecasting
- Due diligence
- Customer insight
- Market insights
- Policy & regulation
- Whole system modelling
- Trading optimisation

About smartEn

smartEn, representing the Flexible Demand Management Industry, is the European business association integrating the consumer-driven solutions of the clean energy transition.

We aim to create opportunities for every company, building and car to support an increasingly renewable energy system.

For further information please visit **www.smarten.eu**

Progress of Demand Side Flexibility has slowed since the crisis

A step-change is needed to meet the flexibility requirements for 2030

smartEn comment

Despite the growing need for flexibility across Europe's power systems, this year's Market Monitor reveals a surprising trend: a rollback of key reforms required to establish a framework for independent aggregation in Spain, ongoing negotiations in Germany to introduce a capacity market focused on thermal generation, and a broader stagnation of long-overdue reforms across Europe.

These developments are particularly striking given that nearly all the reforms necessary to achieve a fully "green" status across European countries—and to unlock the full potential of the Flexible Demand Management industry—were already enshrined in the Electricity Regulation and Electricity Directive of the 2019 Clean Energy Package. These provisions should have been implemented years ago.

Against this challenging backdrop, there is nonetheless a more encouraging signal. The forthcoming Network Code on Demand Response, although its final content remains under discussion, is expected to bring much-needed clarity and stronger European harmonisation, supporting the development of demand-side flexibility and enabling its monetisation through multiple commercial pathways.

Michael Villa, Executive Director, smartEn

LCP Delta comment:

The need for demand side flexibility is growing ever more urgent, with analyses across Europe recognising that 5 times more will be needed by 2030. The Iberian blackout in April brought into focus the potential impact of missing that target.

Despite this, in many countries the momentum from the immediate aftermath of the energy crisis has diminished as prices have declined. And despite being protected from those high prices, Norwegian households are now insulated from volatility after the introduction of the Norgespris.

Tariff based flexibility is just one way of unlocking the full potential of demand side flexibility, with access to local and national grid services, wholesale and capacity markets needed to warrant the increasing investor interest in the sector.

The Flexibility Needs Assessment will result in indicative national targets, but only in January 2027. Members States should not wait until then to remove barriers to flexibility and promote the entry of new non-fossil flexibility.

Jon Ferris, Head of Flexibility, LCP Delta

We would like to thank the following members of smartEn's Markets and Networks Committee for their input into this report:

Mattia Barbero

Jannis Burger

Paul Troughton

Jennifer Corradi

Jeremy Yapp

Guro Grøtterud

Contents

2025 Market Monitor for Demand Side Flexibility

Executive summary

The assessment for this market monitor covers the implementation of markets and the accessibility of demand side flexibility in:

- TSO Ancillary Services
- DSO Markets
- Wholesale Markets
- Capacity Markets
- Retail Tariffs
- Future Developments

This report provides a high-level overview of the current state of demand side flexibility (DSF) across Europe, highlighting that the need for flexibility is increasing more rapidly than participation in these markets.

Legal frameworks have opened the door to DSF in TSO markets, but practical barriers continue to limit access and participation.

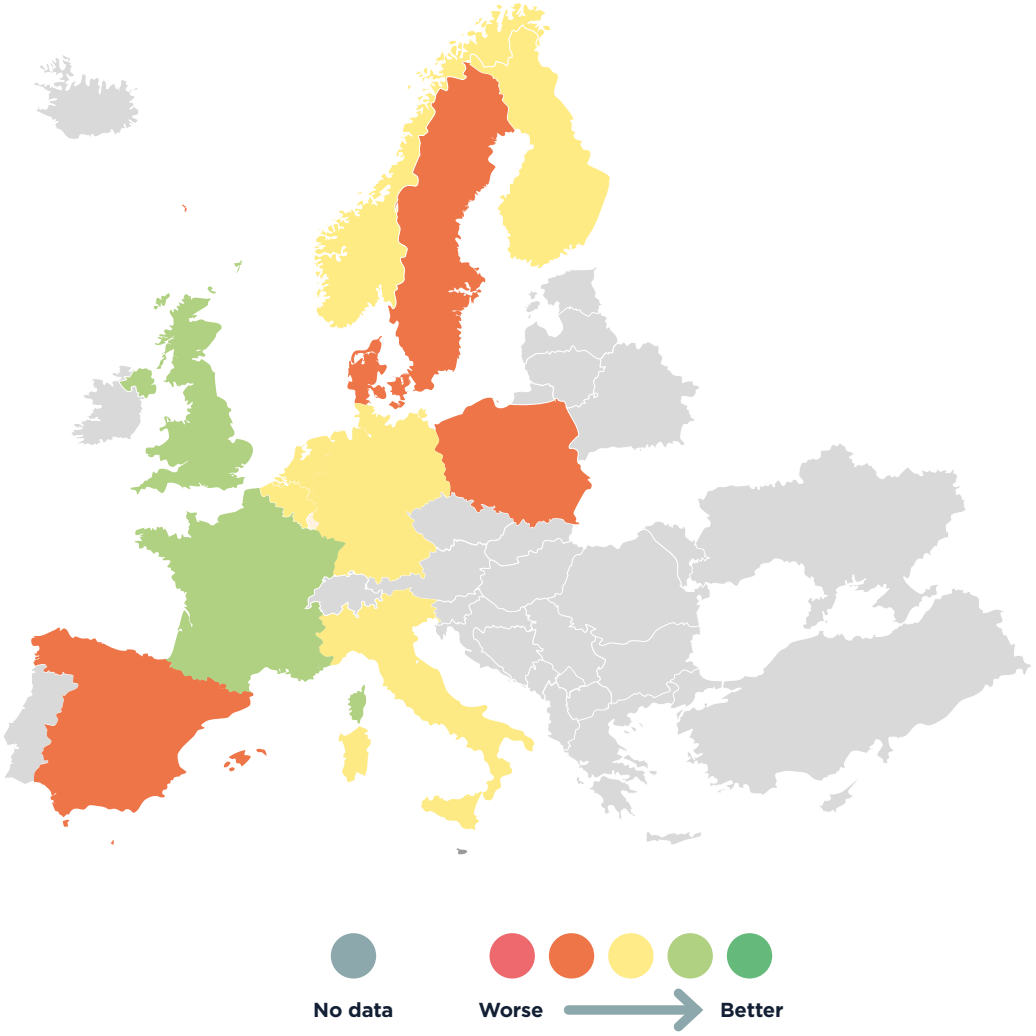
Most DSO markets are still confined to pilot projects rather than fully commercial operations.

Optimising flexibility in wholesale markets remains restricted, particularly for independent aggregators when compensation mechanisms and baselining methods are not always sufficiently integrated to enhance the development of DSF.

Although there has been some innovation in retail flexibility, such as time-of-use and dynamic tariffs, consumer uptake remains limited.

Capacity markets risk reinforcing the dominance of incumbent fossil fuel generators if DSF is not fully enabled to participate to the full extent.

Finally, some countries continue to delay implementation of measures that would support the growth of the flexible demand management industry.



Demand Side Flexibility Market Monitor

Purpose, scope and definitions

What the Market Monitor is, and how to use it:

This report provides an overview of the regulatory developments and market activity of demand side flexibility in electricity markets across Europe.

This year's edition focuses on 12 European countries, with a more extensive narrative to highlight specific areas of progress and identify opportunities to further develop the potential of demand side flexibility.

The findings are based on our primary and secondary research across each market. Our approach and research findings have been challenged by internal and external experts to validate and calibrate the ratings.

Scope of the Market Monitor:

The report focuses on the role of the Flexible Demand Management Industry in engaging demand side flexibility in market-based services and optimisation based on retail tariffs:

- DSF In TSO Ancillary Services Markets
- DSF In DSO And Local Flexibility Markets
- Independent Aggregator Access To Wholesale Markets
- DSF Participation In Capacity Markets
- Development Of Retail Tariffs For Flexibility
- Future Developments Supporting DSF

What is flexibility?

Flexibility is the ability of electrical generators and consumers to alter their output or consumption on demand. It can be provided by assets ranging from large front of meter generation to residential appliances.

What is Demand Side Flexibility?

DSF is the deviation from the planned consumption, generation and/or use of storage, in response to price signals or instruction, from residential, commercial or industrial customer sites, individually as well as through aggregation.

What is the Flexible Demand Management Industry ?

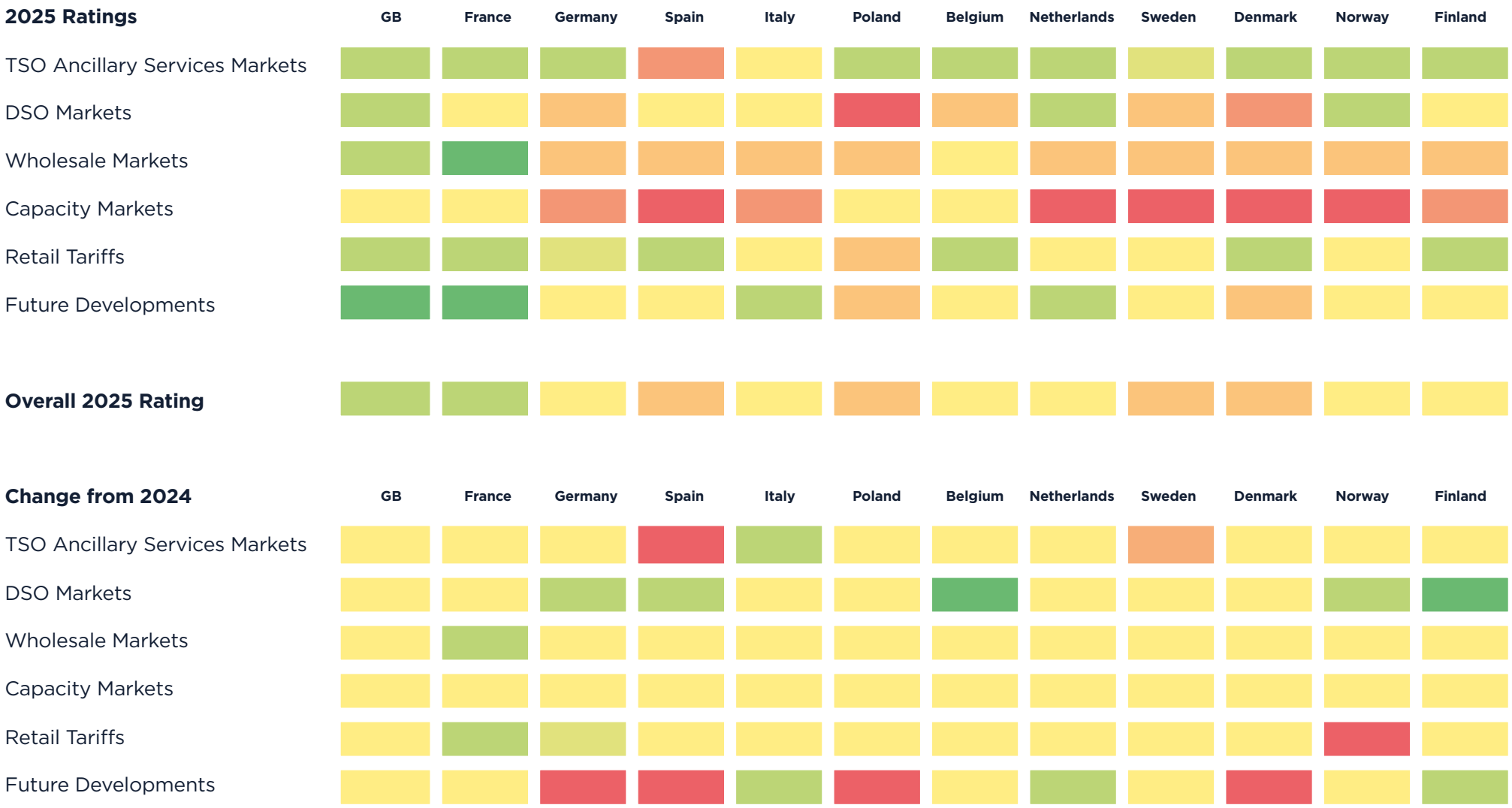
The Flexible Demand Management Industry (FDMI) encompasses companies offering technologies and services designed to unlock the demand-side flexibility (DSF) potential of all connected end-users, including buildings, electric vehicles (EVs), and industrial consumers such as energy-intensive industries.

Overview of Assessment Methodology

Category:	Feature:	Description:
TSO Ancillary Services	• Existence and openness of FFR, FCR, aFRR, mFRR markets • DSF participation • Pan-European market integration • Independent aggregator access	Markets scoring highly indicate that not only are markets open to DSF, but that independent aggregation is allowed and an agreement with a balancing responsible party (BRP) is not required. If the score is low then DSF is either not permitted or only with high barriers to entry.
DSO Markets	• Presence of trials and markets • Geographic coverage • Volumes contracted • Number of providers	High scoring countries have both accessible, commercial DSO offerings and high volumes of produced flexibility. Pilots, trials and regulatory sandboxes are given merit, but enduring markets and business as usual regulation score higher.
Wholesale Markets	• Access for independent aggregators (direct or through supplier) • Legal and regulatory barriers	Direct access to wholesale markets for distributed, flexible assets from industrial and residential consumers. Default correction and compensation mechanisms are seen as beneficial.
Capacity Markets	• Existence of capacity market • DSF eligibility and participation • Aggregation allowed • Auction details	Existence of capacity markets, and ability for demand side assets to participate. Excessive de-rating of demand side capacity is a negative, as is a demonstrable lack of participation.
Retail Tariffs	• Take-up of dynamic/ToU tariffs • Variable network charges • Smart meter deployment	Existence and customer uptake of dynamic and time of use tariffs, including both time varying wholesale and network charges. The existence of diverse consumer offerings demonstrate market competition, while smart meters are a facilitator of flexibility.
Future Developments	• Known and expected regulatory/market changes • Timelines for implementation	Legislation either in draft or passed in law but not yet implemented, regulations announced or in consultation.

2025 Market Monitor for Demand Side Flexibility

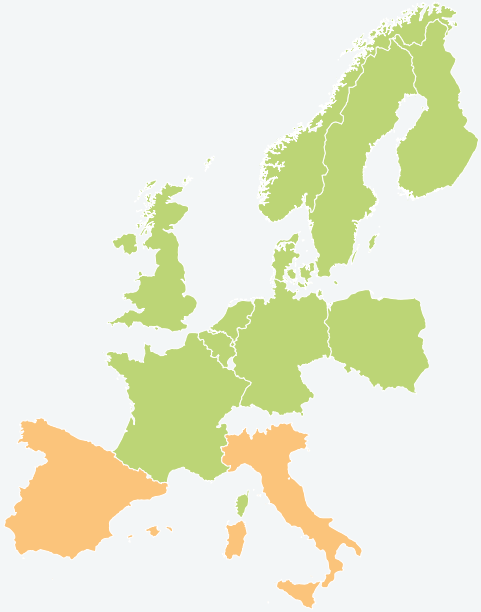
Summary


2025 Ratings
GB
France
Germany
Spain
Italy
Poland
Belgium
Netherlands
Sweden
Denmark
Norway
Finland
TSO Ancillary Services Markets
DSO Markets
Wholesale Markets
Capacity Markets
Retail Tariffs
Future Developments
Overall 2025 Rating
Change from 2024
GB
France
Germany
Spain
Italy
Poland
Belgium
Netherlands
Sweden
Denmark
Norway
Finland
TSO Ancillary Services Markets
DSO Markets
Wholesale Markets
Capacity Markets
Retail Tariffs
Future Developments

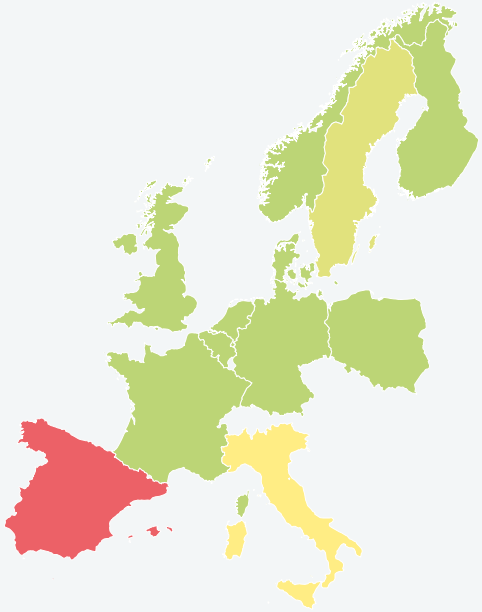
TSO Ancillary Services Markets

- Although the preliminary phase of the TIDE reforms in Italy was implemented, more is needed for DSF
- Spain's Royal Decree 997/2025 lacked the support for DSF from the repealed Royal Decree Law 7/2025
- The implementation of Independent Aggregation in Sweden was delayed again, now expected in 2029

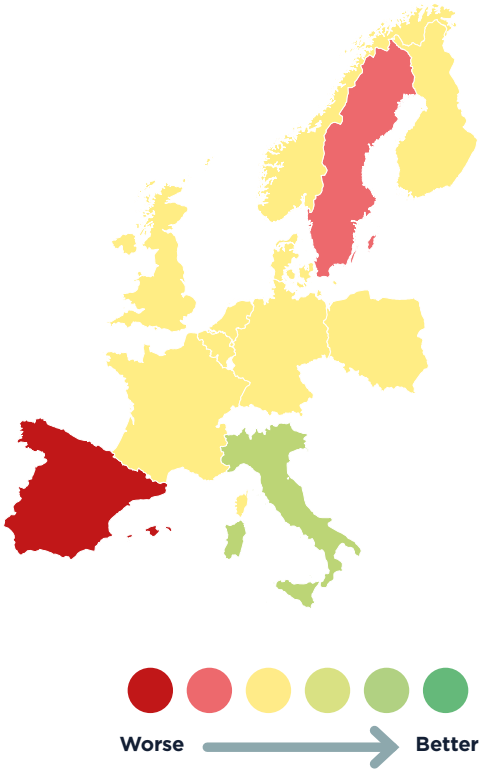
TSO Markets 2024



TSO Markets 2025



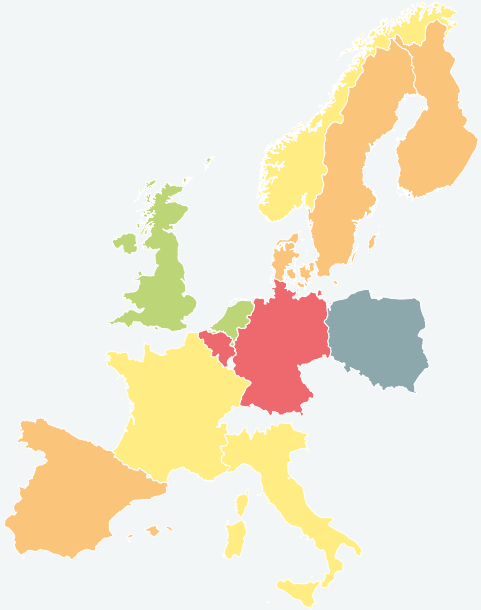
TSO Markets Change 2024-25



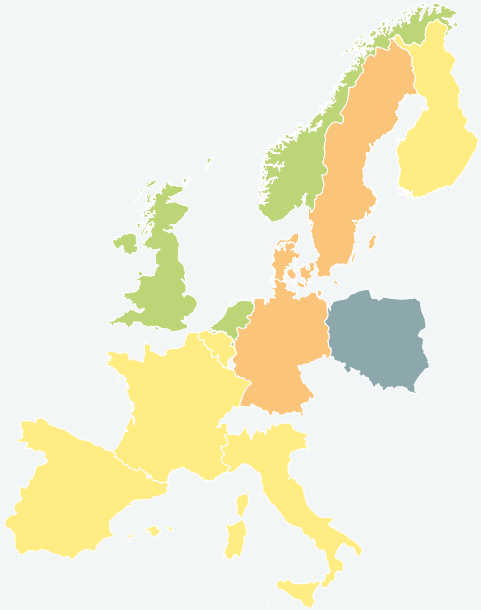
DSO and Local flexibility Markets

- More trials and pilots, but few countries have enduring commercial markets
- FinFlex is used for congestion management at both national and local level, but is for now still a pilot
- A number of pilots have gone live in Spain, while activations in Belgium have been limited

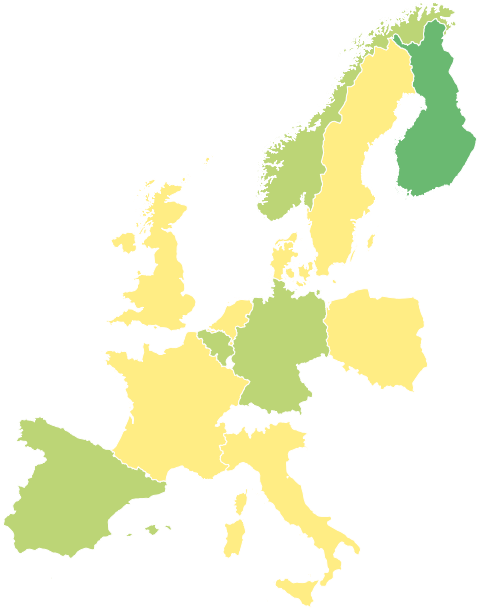
DSO Markets 2024



DSO Markets 2025



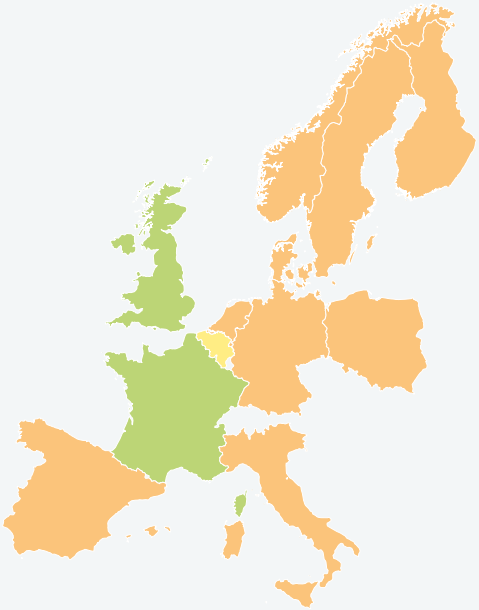
DSO Markets Change 2024-25



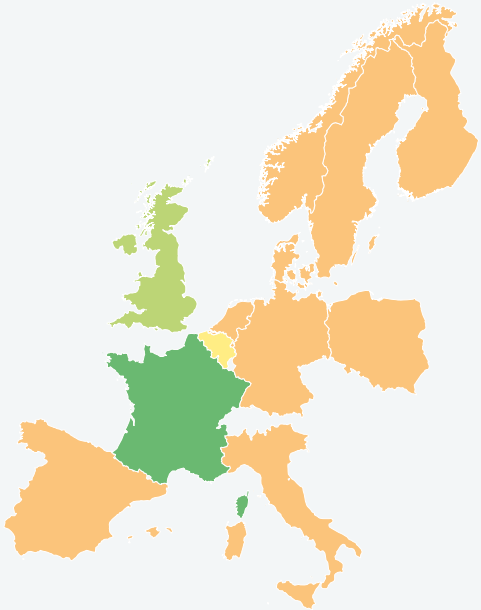
Independent Aggregator Access to Wholesale Markets

- NEBCO has enabled demand turn-up actions in the French wholesale market
- The implementation of P415 in GB has been extended to households without smart meters
- Limited progress elsewhere on independent aggregator frameworks

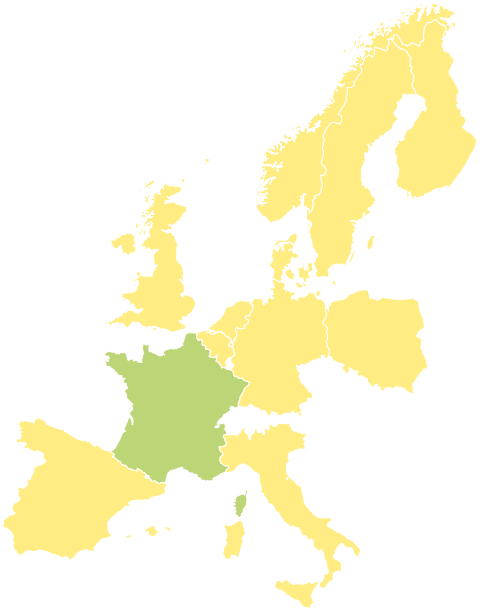
Wholesale Markets 2024



Wholesale Markets 2025



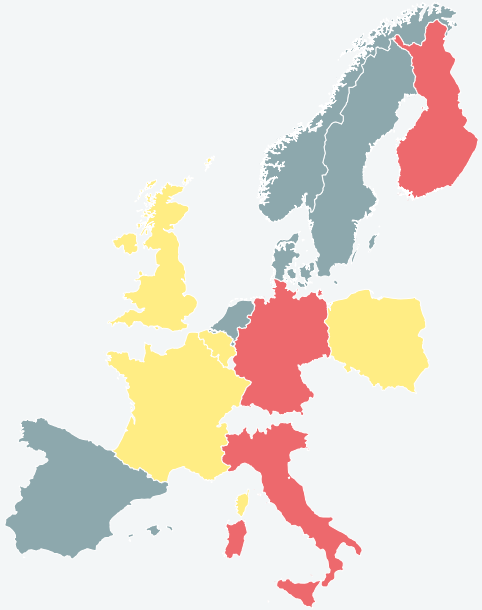
Wholesale Markets Change 2024-25



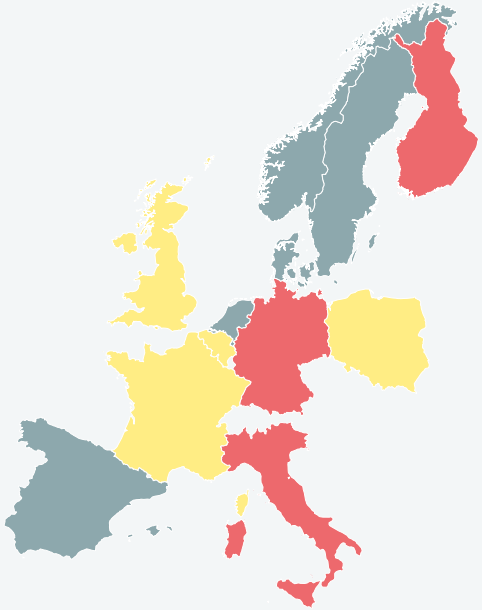
DSF Participation in Capacity Markets

- There has been little significant change, and demand side flexibility remains under-represented
- Many countries still have no Capacity Market, despite expectations in Spain and Germany
- Germany still plans a capacity mechanism, after supporting new CCGTs in the Power Plant Strategy

Capacity Markets 2024



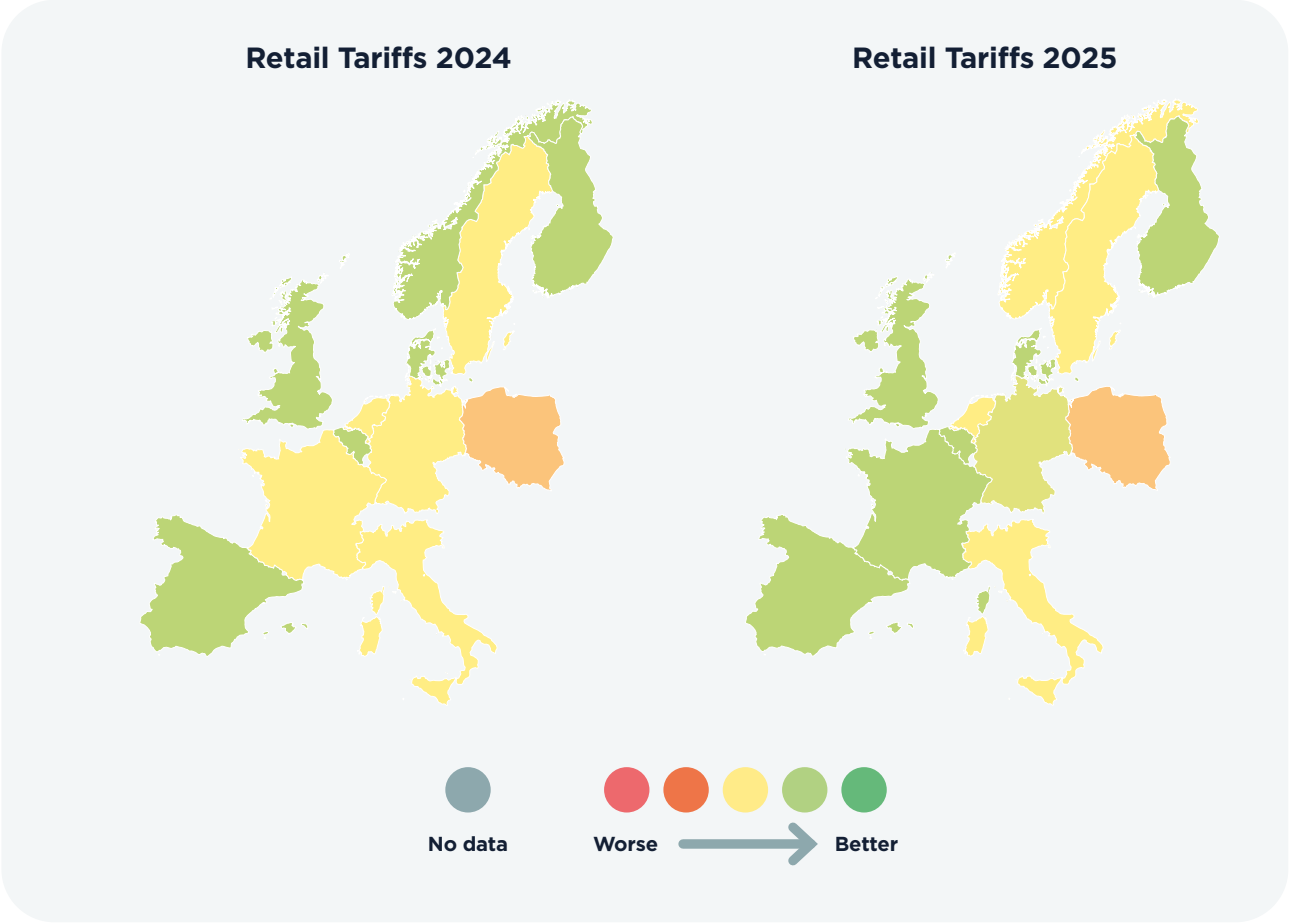
Capacity Markets 2025

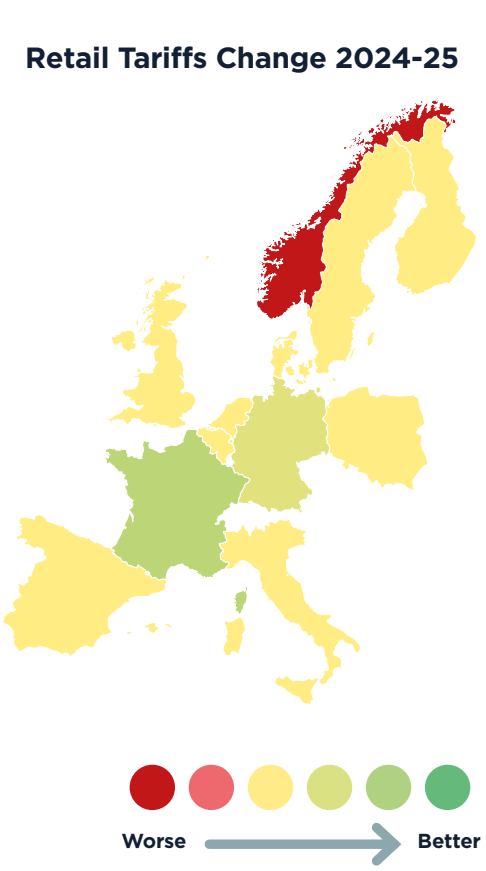


Capacity Markets Change 2024-25

Development of Retail Tariffs for Flexibility

- Norgespris has led to more than 46% of Norwegian households switching to the discounted fixed price
- TURPE 7 introduces benefit for flexible assets in zones with congestion from excess solar or demand peaks
- V2G tariffs are starting to emerge, with some countries having significant growth in smart charging tariffs

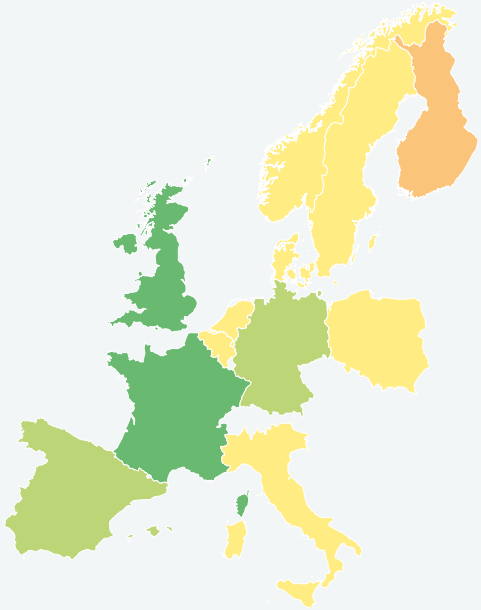




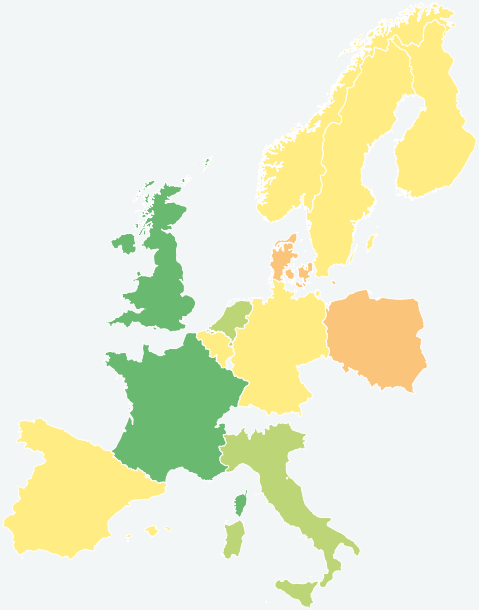
Future Developments Supporting DSF

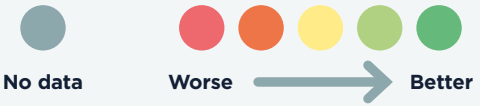
- Further implementation of legislation expected in France, Italy, Finland, and the Netherlands in 2026
- Meaningful participation of DSF in Poland remains limited since the 2023 Energy Act
- Delays to anticipated developments negatively impacting Spain and Germany

Future Developments 2024

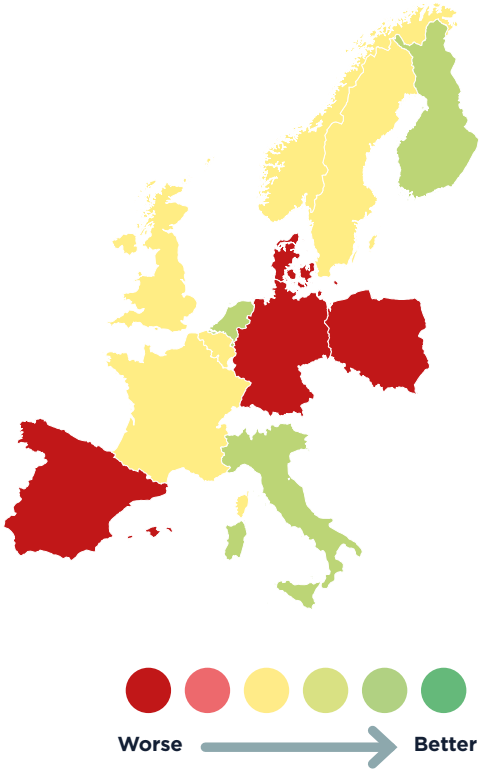


Future Developments 2025





Future Developments Change 2024-25

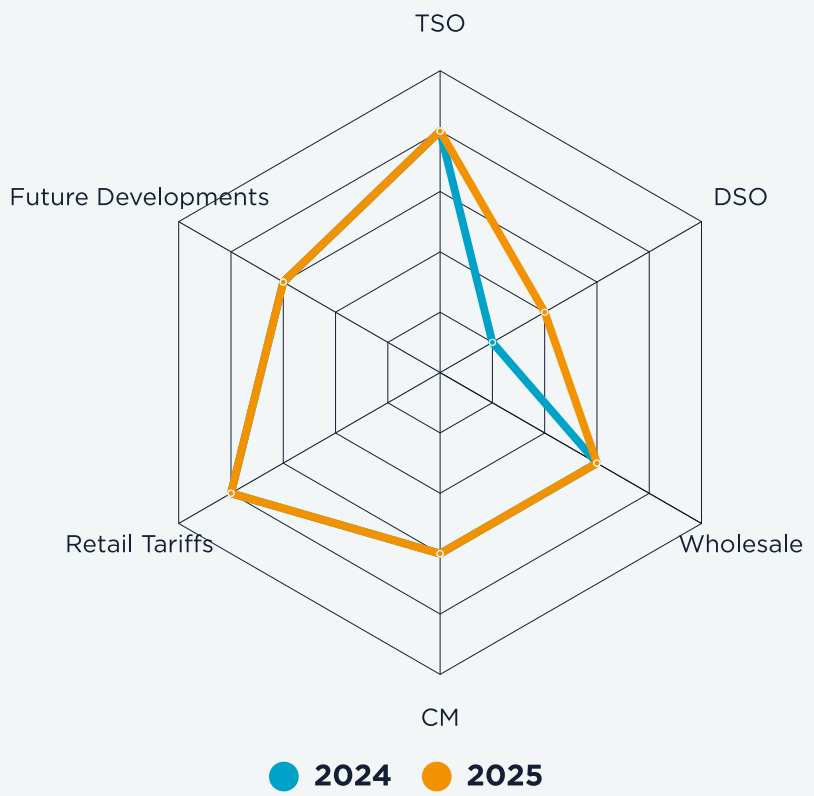


Country Profiles

Twelve European country profiles, assessing six key pillars to highlight progress, challenges, and investment opportunities. A traffic light system shows how supportive each market is for Demand Side Flexibility: green means highly supportive, amber indicates some barriers, and red signals limited support.

Belgium

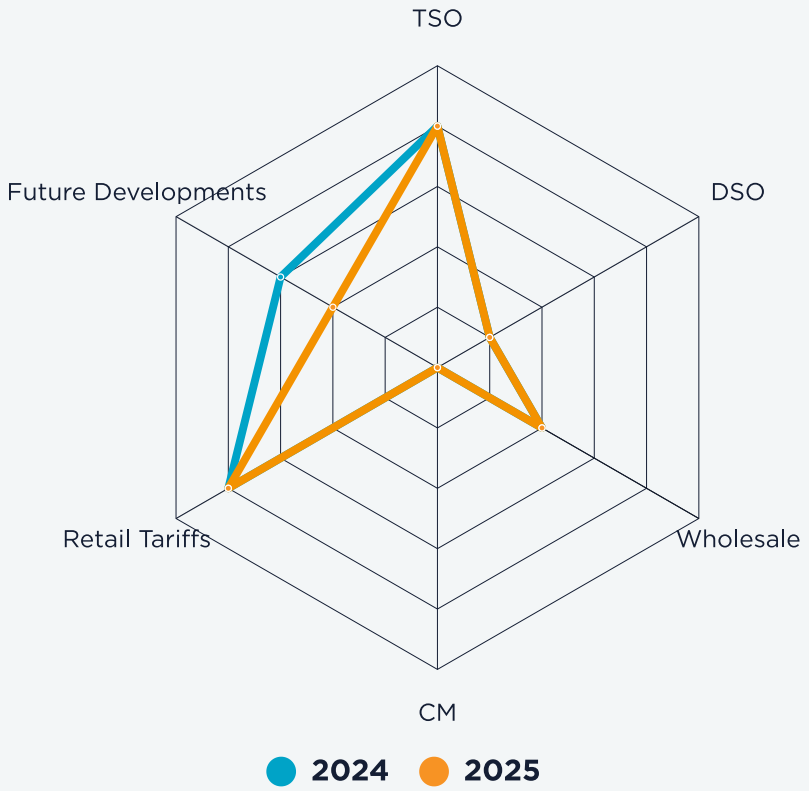
Belgium offers well-developed TSO flexibility markets and broad aggregator access, but limited DSO activity, low smart meter penetration, and limited dynamic tariff uptake continue to constrain the growth of residential demand-side participation.



- Belgium's ancillary services are broadly accessible to Commercial and Industrial consumers, with FCR, aFRR, and mFRR all open to demand-side participation. The country is fully integrated into the European balancing platforms (live on PICASSO, MARI, and FCR Cooperation), and also operates a redispatch service, though this is not yet open to demand-side units. Independent aggregation is permitted across all markets, but participation in aFRR currently requires a BRP agreement, creating a significant barrier for independent aggregators.
- Distribution level flexibility remains limited to a small number of DSO pilots. In 2025, Fluvius activated 626 MWh of flexibility through its shortFlex product and reserved 2.95 GWh via MaxUsage, signalling early but modest progress toward local flexibility procurement.
- Independent aggregators can access the wholesale market for medium- and high-voltage customers, and must designate a BRP under the Transfer of Energy (ToE) regulated compensation framework. However, no ToE activation has been registered in these markets.
- Belgium operates an established capacity market, where demand-side flexibility participates actively and has been exempt from the payback obligation since 2024. However, the high derating factor for DSF limits participation.
- Retail market conditions remain mixed: dynamic tariff uptake is negligible, smart meter penetration is still relatively low at 53%, and both residential and C&I consumers face variable network charges. Heat pump and EV tariffs are available, though V2G offerings are not.
- With no major changes over the past year, the key development ahead is the extension of ToE rules to aFRR and low-voltage assets in mFRR from 2026, widening access for smaller-scale flexibility providers by removing the requirement for a BRP agreement.

Denmark

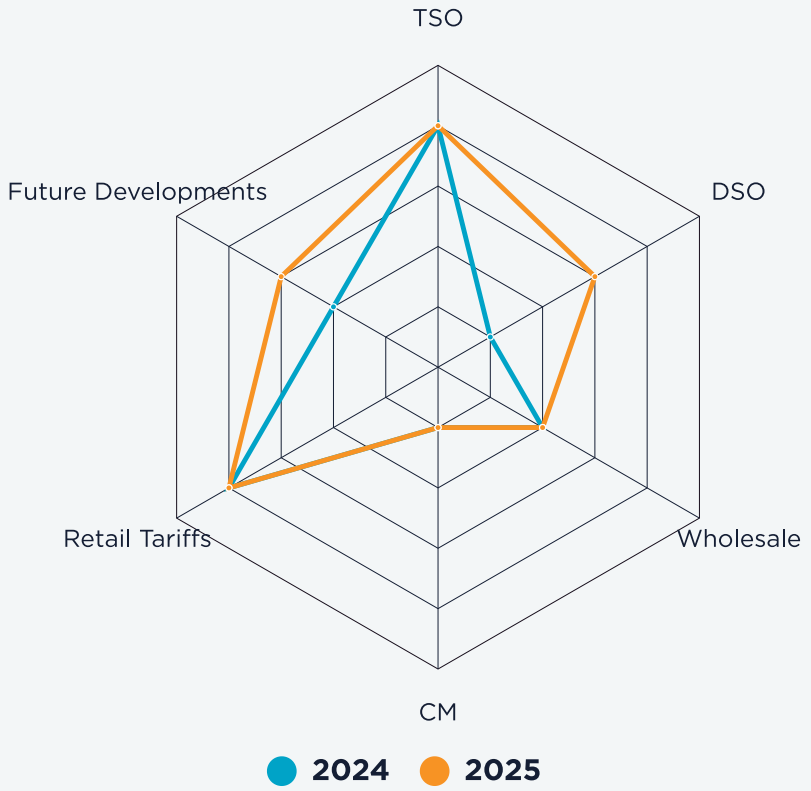
Denmark's flexibility landscape is shaped by the split between European and Nordic electricity systems. Despite strong participation in European balancing platforms, it remains limited in terms of market diversity and access routes for aggregators.



- Western Denmark (DK1) offers FCR, aFRR, and mFRR, while Eastern Denmark (DK2) provides a broader suite - FFR, FCR-N, FCR-D, aFRR, and mFRR, reflecting the historical separation between the continental and Nordic systems. The country is already live on PICASSO and is preparing to join MARI in 2026, further aligning its ancillary services with EU markets. Independent aggregators are recognised and can participate in these existing services, providing a clear pathway for demand-side flexibility.
- At the distribution level, however, flexibility is far less developed. Denmark does not yet have business-as-usual DSO markets; instead, activity remains limited to pilots, including the e2flex trial, with no clear plans for wider rollout.
- Independent aggregators face a major barrier in that they cannot access the wholesale market, restricting their ability to optimise customer assets across multiple value streams.
- Denmark currently has no capacity market and no plans to develop one.
- Flexibility for retail customers is widespread: smart meter coverage is 100%, and tariff structures designed for EVs and HPs use ToU models to encourage off-peak consumption. A V2G pilot was led by Nissan over a decade ago.
- With no significant changes since last year and no major developments expected, Denmark's flexibility framework remains stable, with strong aggregator access at the TSO level but limited opportunities elsewhere.

Finland

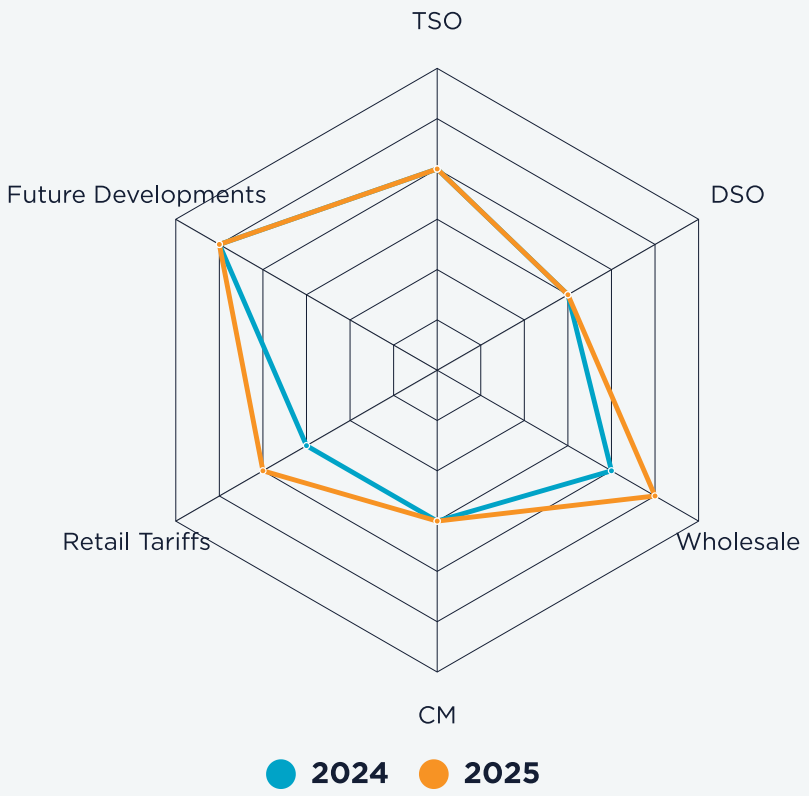
Finland has a comprehensive set of TSO flexibility markets and strong Nordic integration, but a lack of clarity over wholesale market rules, emerging access for independent aggregators, and a developing DSO marketplace continue to restrict broader demand side participation despite high smart meter penetration and growing adoption of dynamic tariffs.



- Finland's flexibility landscape is well-developed at transmission level, with all TSO ancillary services open to DSF. The country is already live on PICASSO, plans to join MARI in 2027, and participates in the joint balancing arrangements shared with Sweden, Norway, and Eastern Denmark. IAs are recognised and can participate across most TSO markets, with access to mFRR expected from autumn 2026.
- At distribution level, flexibility is still in its early stages, with procurement not yet business-as-usual and currently centred around the country-wide FinFlex trial, which also enables Fingrid to buy flexibility for congestion management from new resources.
- Independent aggregators are legally allowed to access the wholesale market, but due to IA regulations not being fully established, the absence of clear implementing rules presents a significant barrier to meaningful participation.
- Finland currently has no capacity market, but operates a strategic reserve that demand-side flexibility can contribute to, though no capacity has been contracted since 2020.
- On the retail side, Finland benefits from 100% smart meter rollout and relatively high dynamic tariff adoption (25%), with both residential and C&I users facing variable network charges. However, asset-specific tariffs remain underdeveloped, with no heat pump, EV, or V2G flexibility products available.
- With no major changes since last year, future developments hinge on Finland joining MARI in 2027, enabling independent aggregators participation in mFRR, and the planned introduction of the Nordic mFRR Capacity Market from 2026.

France

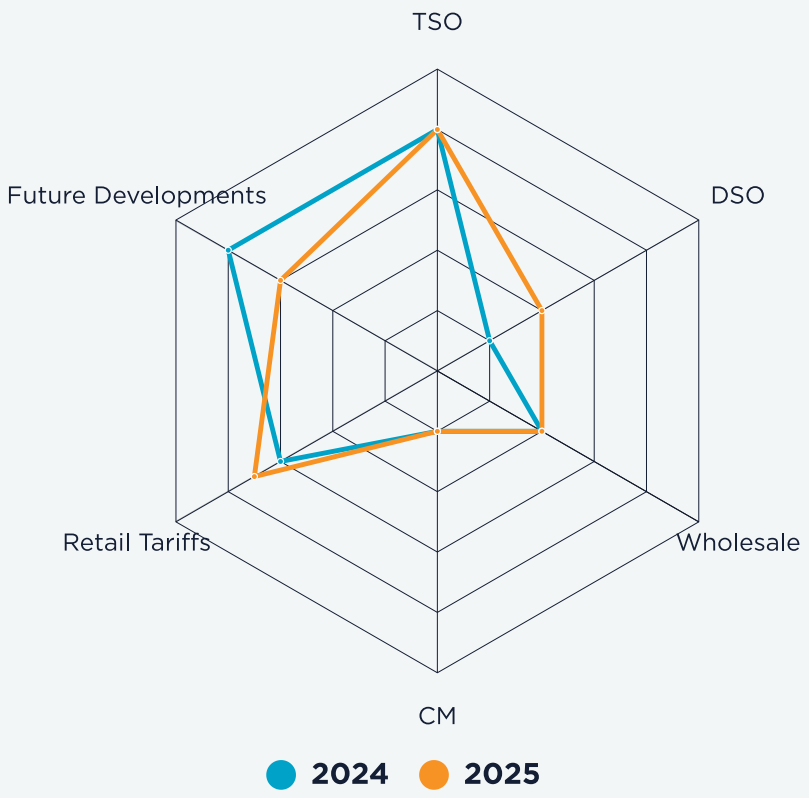
France has made notable progress in developing a mature and accessible flexibility ecosystem, though key reforms remain underway. NEBCO extends wholesale market access to demand turn-up, while TURPE 7 introduces incentives for flexibility in network tariffs.



- Independent aggregators can participate freely across all markets without requiring a BRP agreement, making France one of the more open markets in Europe. The country participates in FCR co-operation and PICASSO, with access to MARI scheduled for March 2026, and it is currently an observer in ALPACA. While France does not operate a market for FFR, it continues to run its long-standing Interruptible Load Programme, providing an additional TSO-level avenue for flexibility but with limited access for aggregation.
- At the distribution level, DSO flexibility procurement is already business as usual, however, only 46 MW were contracted in 2024.
- Independent aggregators may also access the wholesale market, but they must attach themselves to a BRP's balancing perimeter for volumes activated on NEBCO. Bilateral arrangements are possible but not common, as scaling them across multiple BRPs or customer sites can be administratively complex.
- The capacity market is fully established and there is a separate capacity allocation for DSF. However, dramatic price drops in the past year have negatively affected contracted volumes and impacted remuneration.
- Although there has been little uptake of dynamic retail tariffs to date, France has achieved a 94% smart meter rollout, and both residential and C&I customers face time-of-use-based variable network charges, creating a foundation for more advanced pricing models. Electrification products show mixed availability: EV and V2G offerings are established, but heat pumps are not yet supported in flexibility programmes. TURPE 7 has introduced reforms incentivising flexibility to address congestion.
- Looking ahead, suppliers with over 200k customers will be obligated to offer dynamic tariffs from July 2026. France also plans a new capacity market design, full integration into MARI, and continued implementation of TURPE 7 through to 2027, positioning the country for further expansion of accessible, market-based flexibility.

Germany

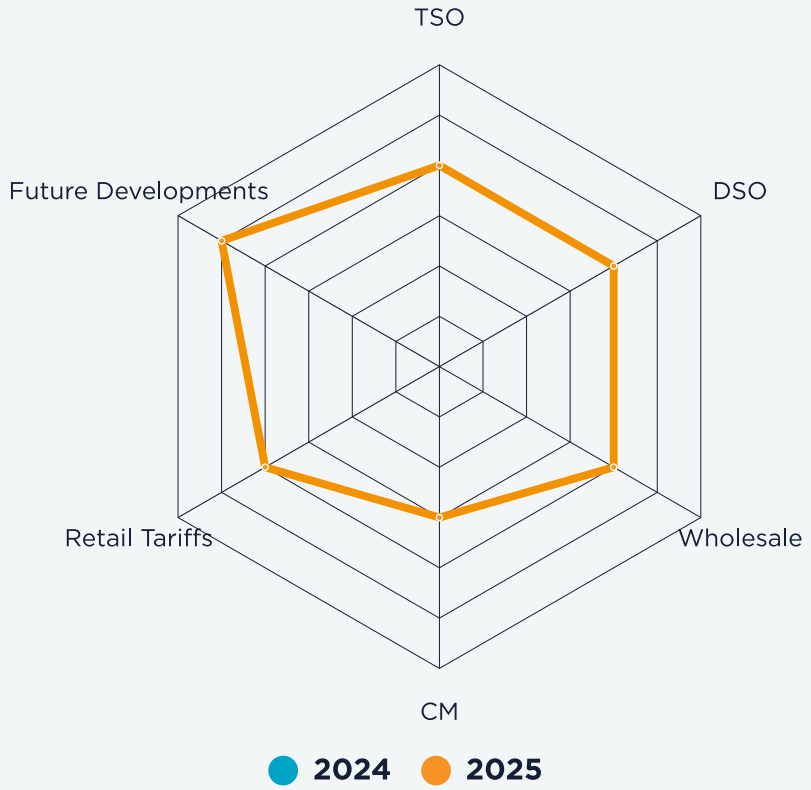
Germany has limited retail flexibility and slow smart-meter deployment continues to constrain DSF growth.



- Germany provides a wide range of TSO flexibility options, participating in FCR Cooperation, PICASSO, MARI, and ALPACA. Though it still lacks an FFR market, it will be implementing a market for inertia. Beyond the European platforms, TSO 50Hertz has recently opened competitive reactive power tenders specifically targeting BESS and renewables. Independent aggregators are recognised, but standardised agreements are not yet available; instead, an acknowledgement from the relevant BRP is required for pre-qualification.
- On the DSO side, a handful of pilots have launched since last year, but activity remains far from business-as-usual. Article 14a of the Energy Industry Act gives DSOs the right to temporarily reduce load to reduce local congestion. With 800 DSOs, this can present coordination complexity for aggregators.
- Independent aggregators require a compensation agreement in place with the supplier to access wholesale markets.
- Germany still operates without a formal capacity market, relying instead on the Capacity Reserve and Network Reserve. Although a Capacity Market is planned within the next couple of years, and it is expected that DSF will be able to access it, the current government's Power Plant Strategy is tendering for 10GW of gas plants as a bridge to the Capacity Market.
- Retail flexibility remains limited: dynamic tariff uptake sits at just 1%, and smart meter rollout is only at 4%. HP, EV, and V2G tariffs are available, and the removal of double charging of grid fees for electricity fed back into the grid will support the growth of bidirectional charging.
- Aside from new DSO trials, there have been no major changes this year. Looking ahead, discussions about introducing a Capacity Market in 2028 continue—though implementation appears unlikely—and mandatory smart meter rollout targets will begin to ramp up, aiming for 50% by 2028, and 95% by 2030. There was a target of 20% by 2025, but this has not been reached.

Great Britain

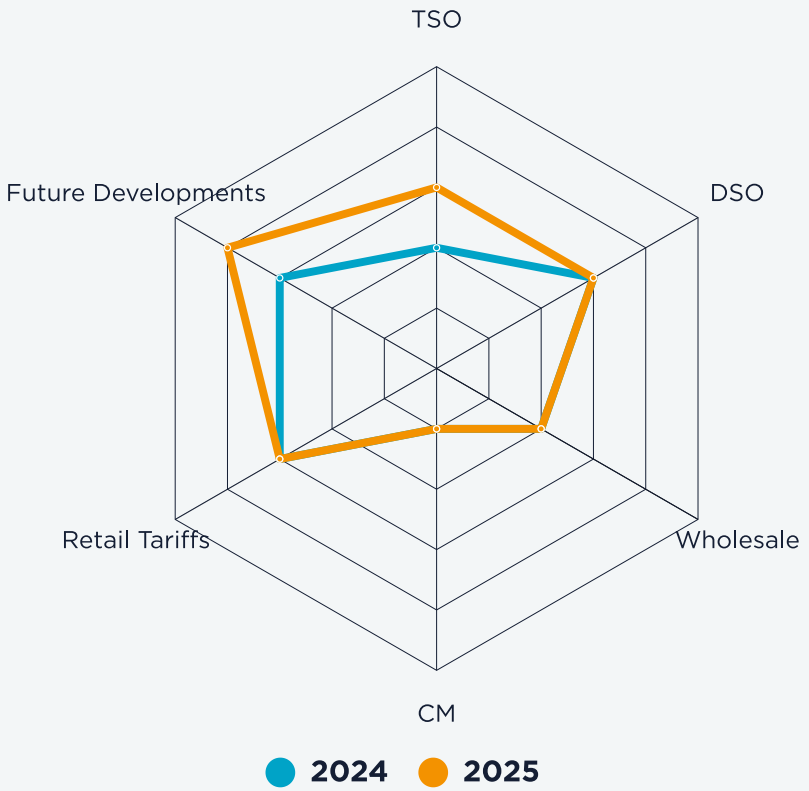
Great Britain has a broad suite of flexibility markets and a regulatory environment that is generally supportive of demand side participation, though some structural constraints remain. The appointment of a Flexibility Commissioner and Elexon as the Flexibility Market Facilitator will further drive the development GB's flexible energy system.



- NESO (National Energy System Operator) operates FFR, Quick Reserve, Balancing Reserve, and STOR (Short-Term Operating Reserve), all of which are open to DSF. However, GB remains outside the pan-European balancing platforms. Independent aggregators are formally recognised, yet geographic constraints within GB's zonal network make it challenging for them to assemble the minimum 1 MW required for many services. The Demand Flexibility Service (DFS) provides an additional route for demand-side flexibility assets.
- On the distribution side, flexibility procurement is firmly business-as-usual, with an impressive 9 GW contracted since 2024, underscoring GB's position as one of the most advanced DSO flexibility ecosystems in Europe.
- Market access for independent aggregators is also supported at the wholesale level through P415, enabling them to trade on behalf of customers. The effects are now being seen, with multiple active players trading demand-side volumes.
- The capacity market is well-established and sees active participation from DSF. However, there are some concerns about the potential for obstructive derating factors for DSR.
- Smart meter rollout sits at 68%, and both residential and C&I customers can access TOU network charges, supporting more dynamic consumption behaviours. Heat pump, EV, and V2G products are widely available, reflecting strong electrification trends.
- With no major regulatory changes since 2024, the sector is relatively stable, though significant adjustments to products and co-optimisation at day-ahead will mark the next evolution in GB's ancillary services framework. GB will also introduce mandatory half-hourly settlement for all consumers. The UK and the European Commission have also concluded exploratory talks on the UK's participation in the EU's internal electricity market. They will now negotiate the framework for that participation.

Italy

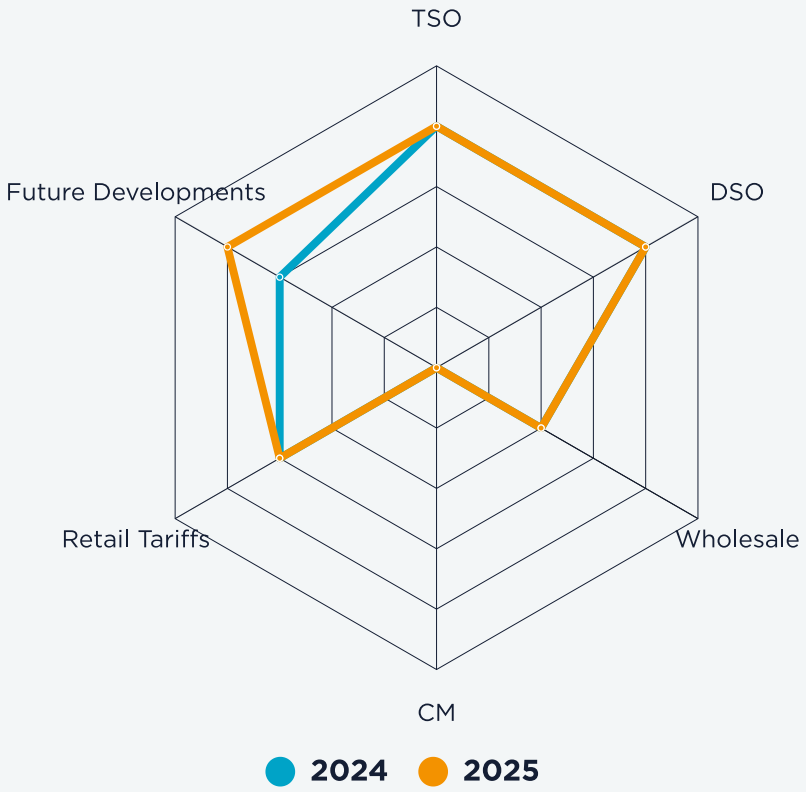
Italy's flexibility markets are evolving, but progress remains uneven across different parts of the system. The TIDE reform (Italy's major multi-year overhaul of dispatching, imbalance management, and market design) has now entered its consolidation phase, driving improvements in transparency and alignment with EU standards. Full implementation is expected by 2028, alongside a shift to market-based FCR procurement in 2027.



- At the transmission level, Italy continues to operate its legacy balancing markets. Aggregation is formally allowed in aFRR, mFRR and RR under the UVA framework developed during the UVAM pilot. However, market access for new independent aggregators is temporarily frozen –no new BSPs or aggregated units can join until February 2026, following the closure of UVAM auctions at the end of 2024. Italy is also integrating with European balancing platforms, having rejoined PICASSO in late 2025, and is planning to join MARI in spring 2026.
- At the distribution level, flexibility remains limited. A handful of DSO pilots (EDGE, ROMEflex and MINDflex) are underway, but these are far from business as usual and show no major progress compared with previous years.
- Independent aggregators also still lack access to wholesale markets, which continues to be a structural barrier to scaling distributed flexibility.
- While Italy operates a capacity market that technically accommodates demand-side flexibility, participation is minimal due to stringent requirements and limited financial incentives.
- On the retail side, high smart-meter penetration (98%) has enabled variable network charging for customers, but adoption of dynamic tariffs remains extremely low: 0% among households and only 3% among C&I users. Heat pump and EV-specific tariffs are available.
- Despite the ongoing TIDE reform and upcoming European platform integration, practical access and utilisation of flexibility, especially at the DSO level, remain constrained.

Netherlands

The Netherlands has mature TSO flexibility options and an active constraint-management platform, but limited independent aggregator access, low dynamic-tariff uptake, and the absence of a capacity market keep DSF participation relatively modest.



- The Netherlands offers a broad set of TSO flexibility services and currently operates its own national mFRR design (mFRRda), which will transition to the standard European product following TenneT joining MARI in December 2025. The country is already live on PICASSO and FCR cooperation and acts as an observer in ALPACA, while GOPACS provides an additional platform for resolving local grid constraints. Independent aggregators are formally recognised but still need a BRP agreement to participate in aFRR and mFRRda.
- DSO procurement is well-established, with around 1,280 MWh secured by DSOs via GOPACS since 2018.
- Independent aggregators remain unable to access wholesale markets.
- The Netherlands currently has no capacity market and no plans to develop one.
- Retail flexibility remains comparatively limited: dynamic tariffs are taken up by only 4% of households and 9% of C&I customers, despite smart meter penetration reaching 89%. C&I tariffs include variable network charges, and while there are no dedicated HP or EV tariffs, though smart charging add-ons are offered for dynamic tariffs. V2G trials are underway.
- No significant changes have occurred since last year, but major updates are on the horizon: the Netherlands will go live on MARI in December 2025 with a standardised mFRR product, and from January 2026 the new Energy Act will require suppliers to offer dynamic tariffs, prioritise renewable networks, and introduce new protections for consumers.

Norway

Norway has well-established TSO flexibility markets and strong adoption of dynamic retail tariffs, but limited aggregator access, evolving DSO arrangements, and delayed integration into European balancing platforms continue to constrain overall flexibility participation.

- Norway has a full suite of TSO markets, all of which are open to DSF participation, but practical access remains limited by regulatory and market design constraints. The country is not yet integrated into the pan-European balancing platforms, with participation limited to the joint Nordic market alongside Sweden, Finland, and Eastern Denmark. However, this will change over the coming years, with Norway scheduled to join MARI in 2027 and PICASSO in 2028. Independent aggregators are recognised, however can only participate in FFR, restricting their access to the broader suite of balancing products.
- At the DSO level, Norway continues to develop its flexibility through Nodes, the national procurement platform operator. Recent changes to its LongFlex tenders will allow providers to participate across multiple markets, improving revenue stacking and increasing system value.
- Independent aggregators may also access the wholesale market indirectly via a customer's supplier, but direct access is not yet available.
- Norway currently has no capacity market and no plans to develop one.
- On the retail side, the country has one of the highest levels of tariff flexibility in Europe: supported by a 99% smart meter rollout, 45% of customers use dynamic tariffs under a regulated framework, down from around 90% since the government introduced the Norgespris in October 2025. Residential customers have access to variable network charges, and commercial users experience seasonal price variation. Electrification support is uneven—there are no heat pump or V2G products, but EV tariffs are available.
- With the Norgespreis spelling a huge shift in the retail space, the sector still remains stable, and the main future developments centre on Norway's upcoming integration into MARI and PICASSO, which will reshape its role in the European balancing landscape.

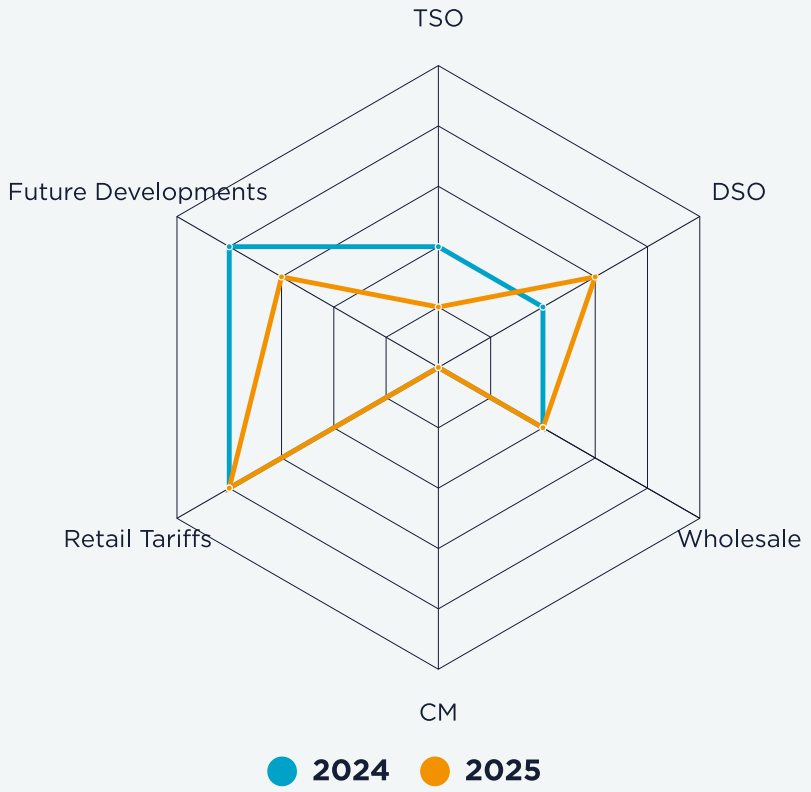
Poland

Poland has opened TSO flexibility markets and a functioning capacity market, but the absence of independent aggregation, DSO flexibility, wholesale market access, and widespread smart metering keeps demand-side participation minimal despite gradual progress toward broader digitalisation.

- Poland's flexibility framework remains limited despite having a full suite of TSO ancillary services open to demand side participation, as high entry costs continue to deter meaningful engagement. The country is already live on PICASSO and plans to join MARI in July 2026, and it operates the IRP service as an additional TSO-level flexibility mechanism.
- There are no DSO markets in Poland and no planned trials.
- Independent aggregators remain unable to access wholesale markets.
- Demand-side flexibility is largely confined to the existing capacity market, where participation does occur, with 1.6GW contracted over 2025.
- Retail and customer-side conditions also remain underdeveloped, despite the availability of variable network charges for both residential and C&I users. Dynamic tariffs have no uptake, and although smart meter penetration has risen from 28% to 35%, it remains far below European norms. Electrification-driven flexibility is still nascent, with no heat pump, EV, or V2G products, aside from a few small-scale V2G pilots for fleets.
- With few changes since last year, the main area of forward momentum is Poland's plan to reach 80% smart meter coverage by 2028, which could eventually enable more widespread and accessible flexibility participation. The TSO is also developing a flexibility information system, which is aiming to be available to TSO markets from mid 2026.

Spain

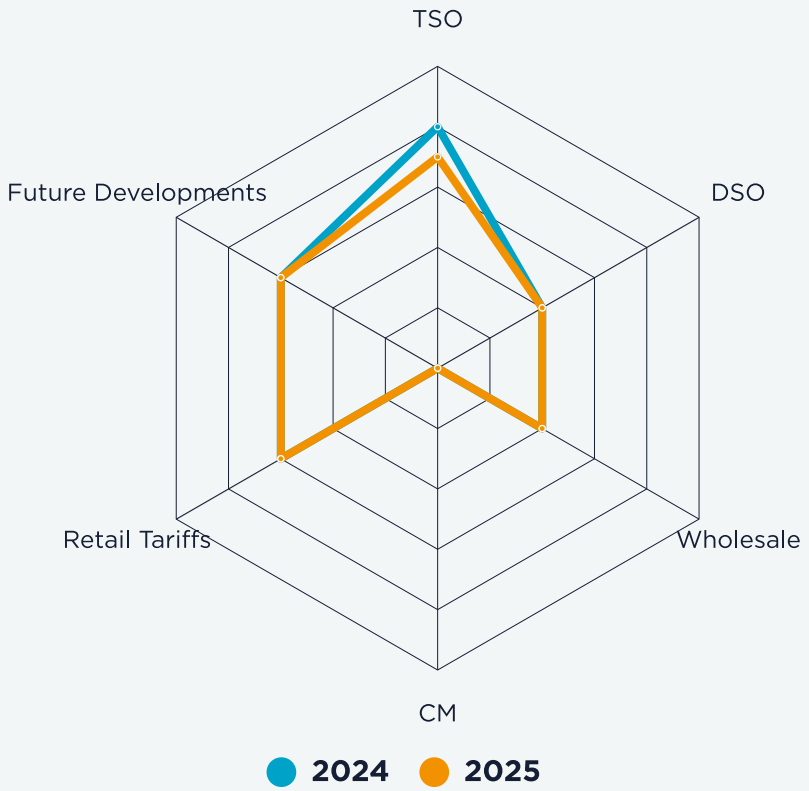
Spain's flexibility landscape shows gradual technical progress but continues to face major structural obstacles, particularly around market access. Though the Iberian blackout brought demands to accelerate the introduction of a Capacity Market and rules for independent aggregation, legislation to implement these was repealed, stalling progress further.



- While Spain participates in PICASSO and MARI, it has no market for FCR. aFRR is technically open to DSF, but participation is effectively blocked by the 100MW minimum portfolio requirement, limiting access to only the largest players. mFRR is more accessible with a 1MW minimum bid size, and Spain also operates SRAD, an additional TSO flexibility mechanism. Despite these developments, independent aggregation remains unrecognised, and although legislation intended to enable them was proposed in response to the Iberian blackout, it was ultimately repealed. While there was some hope that independent aggregation could gain recognition by the end of 2025, this was not in the Royal Decree passed in November.
- Several DSO pilots have gone live over the past year including Citizen storage, I-flex, Flexability, and Energia del Prat. However, Spain is still far from mainstream DSO flexibility procurement.
- Independent aggregators remain unable to access wholesale markets directly on behalf of customers, though they may do so indirectly through a supplier.
- Spain currently does not have a capacity market, though a proposal is awaiting EU approval. Progress is stalled because the government has not yet provided the necessary information, including clarity on the future of nuclear generation.
- On the retail side, smart meter rollout is complete, enabling both residential and C&I customers to face variable network charges. Adoption of dynamic tariffs remains limited (2% for households and 19% for C&I), though broader time-of-use tariff uptake is estimated at 20–25%. 40% of households are on PVPC, the regulated dynamic tariff, but incorporation of the future market price in addition to the hourly spot market since January 2024 have dampened hourly volatility. Heat pump and EV-specific products are available.
- The Royal Decree approved in November 2025 did not include independent aggregation or DSF provision that was proposed in the Royal Decree-Law in July. With no other significant changes since 2024, Spain's framework for demand flexibility remains constrained by regulatory inertia.

Sweden

Sweden's flexibility landscape is shaped heavily by strict technical requirements and its Nordic market integrations. While there have been numerous DSO markets, few have endured beyond the trial phase.



- While the country participates fully in PICASSO, MARI, and broader pan-Nordic ancillary service coupling, including a trilateral mFRR capacity market with Denmark and Finland, its strict performance requirements limit the scope of demand-side participation. FFR and FCR services require ≤4s reporting, and aFRR and mFRR demand one-second resolution, excluding many demand-side assets and systems that do not yet have the necessary communication and metering capabilities. Independent aggregators are only formally recognised in FFR, preventing broader participation across the ancillary service suite.
- At the distribution level, flexibility remains experimental, with a lot of activity in pilots. However, these have not endured: StockholmFlex and JämtFlex have both stopped, though Effekthandel väst continues in its fourth season.
- Independent aggregators can access wholesale markets indirectly through a customer's supplier, and work is underway to enable direct market access, though this reform remains in progress.
- Sweden does not operate a capacity market; instead, it has a temporary Strategic Reserve. However, no bids were received for winter 2025, so a revised approach has been approved for EU state aid eligibility for 2026.
- On the retail side, the country is fully enabled from a metering perspective, with 100% smart meter rollout, but practical tariff flexibility remains limited: only 12% of residential and C&I customers use dynamic tariffs, there are no ToU tariffs, and only a few DSOs apply seasonal variations. Electrification offerings are also relatively underdeveloped—there are no heat pump or EV flexibility products, though V2G trials are underway.
- With no major changes since last year, Sweden continues on a steady but cautious trajectory. Looking ahead, a new Resource Adequacy Mechanism may launch in late 2027, and independent aggregators are expected to gain full recognition from 2029. Additionally, a list of standardized products for local flexibility will soon be adopted.

Glossary - country specific terms

Country	Acronym	Name	Description:
	AS	Ancillary Services	Services procured by the transmission system operator to support the transmission of electric power from generators to consumers. They are used to maintain the proper flow and direction of electricity, address imbalances between supply and demand, and help the system recover after a power system event.
	BRP	Balancing Responsible Party	Entities responsible for maintaining supply and demand on the energy markets. Each BRP must strive to be balanced in real time, and that BRP is financially responsible for the imbalances to be settled with the connecting TSO.
	BSP	Balancing Service Provider	A market participant providing balancing services to its Connecting TSO.
	DSO	Distribution System Operator	The operating managers (and sometimes owners) of energy distribution networks, operating at low, medium and, in some EU member states, high voltage levels (LV, MV and HV).
	IA	Independent Aggregator	Independent Aggregators provide flexibility to the power system from multiple end-users without premission from the user's retailer.
	TSO	Transmission System Operator	The operating manager of the transmission system and party responsible for system balance.
		Congestion	Congestion is when the capacity of the grid is insufficient to handle the demand for or generation of electricity at any given time. This may lead to unserved demand, or curtailment of generation.
		Dynamic time of use tariff	Customer tariff based on wholesale prices. Prices vary at least daily with price reflective on hourly wholesale prices. This is in contrast to other variable tariffs with day/night or 3 or 4 hourly bands.
EU	CEP	Clean Energy Package	A set of eight EU directives and regulations aims to provide an update to the European energy policy framework, aiming at facilitating the energy transition and providing a modern European energy market.

Glossary - country specific terms

Country	Acronym	Name	Description:
BE	ToE	Transfer of Energy	The Transfer of Energy framework in Belgium aims to unlock explicit flexibility in the energy system, particularly for smaller, decentralized assets. This framework allows grid users to valorize their flexibility via a Flexibility Service Provider (FSP) independently of their energy supplier.
DE		Power Plant Strategy	Germany's Power Plant Strategy aims to tender 12 GW of new dispatchable capacity in 2026, to begin operations no later than 2031.
FR	TURPE 7	Tarif d'Utilisation des Réseaux Publics d'Électricité	TURPE 7 sets network tariffs in France for 4 years from August 2025. It introduces dynamic incentives to encourage demand responsiveness, energy efficiency, and the deployment of flexible storage assets, with a more granular geographic classification of consumption zones and injection zones to better reflect local grid constraints.
FR	NEBCO		The NEBCO mechanism replaced NEBEF in 2025, introducing new rules allowing the monetisation of both consumption reductions and increases.
GB	P415		P415 enables Independent Aggregators to participate in wholesale electricity markets. The change allows flexibility providers to monetize their onsite energy through VLPs, rather than their energy supplier. P415 facilitates the trading of Demand Side Response (DSR) and other forms of flexible energy.
IT	TIDE	Testo Integrato del Dispacciamento Elettrico	TIDE is a major reform of Italy's electricity market to align with EU standards. It aims to better integrate renewable energy sources, encourage participation from distributed energy resources, and improve market efficiency.
NO		Norgespris	Norgespris offers households a fixed price of 0.40 NOK per kWh from October 2025. It is an optional scheme that households must actively sign up to.

Thank you for reading

For further information please contact our team.

Jon Ferris
Principal
+44 (0)1223 800 300
jon.ferris@lcp.com

Alexandra Urushadze
Associate Consultant
+44 (0)1312 851 782
alexandra.urushadze@lcp.com

About LCP Delta

LCP Delta is a trading name of Delta Energy & Environment Limited and Lane Clark & Peacock LLP. References in this document to LCP Delta may mean Delta Energy & Environment Limited, or Lane Clark & Peacock LLP, or both, as the context requires.

Delta Energy & Environment Limited is a company registered in Scotland with registered number SC259964 and with its registered office at Quartermile 2, 2 Lister Square, Edinburgh, EH3 9GL UK.

Lane Clark & Peacock LLP is a limited liability partnership registered in England and Wales with registered number OC301436. All partners are members of Lane Clark & Peacock LLP. A list of members' names is available for inspection at 95 Wigmore Street, London, W1U 1DQ, the firm's principal place of business and registered office. Lane Clark & Peacock LLP is authorised and regulated by the Financial Conduct Authority for some insurance mediation activities only and is licensed by the Institute and Faculty of Actuaries for a range of investment business activities.

LCP and LCP Delta are registered trademarks in the UK and in the EU.

https://www.lcp.com/en/important-information-about-us-and-the-use-of-our-work contains important information about LCP Delta (including Lane Clark & Peacock LLP's regulatory status and complaints procedure), and about this communication (including limitations as to its use).

Disclaimer and use of our work

This work has been produced by LCP Delta under the terms of our written agreement with smartEn (Client) for the Client's sole use and benefit, subject to agreed confidentiality provisions, and for no other purpose. To the greatest extent permitted by law, unless otherwise expressly agreed by us in writing, LCP Delta accepts no duty of care and/or liability to any third party for any use of, and/or reliance upon, our work. This document contains confidential and commercially sensitive information. Should any requests for disclosure of information contained in this document be received, LCP Delta request that we be notified in writing of the details of such request and that we be consulted and our comments taken into account before any action is taken.

Where this report contains projections, these are based on assumptions that are subject to uncertainties and contingencies. Because of the subjective judgements and inherent uncertainties of projections, and because events frequently do not occur as expected, there can be no assurance that the projections contained in this report will be realised and actual events may be difference from projected results. The projections supplied are not to be regarded as firm predictions of the future, but rather as illustrations of what might happen. Parties are advised to base their actions on an awareness of the range of such projections, and to note that the range necessarily broadens in the latter years of the projections.