

Dynamic Tariffs

An essential component of future electricity markets?


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Foreword

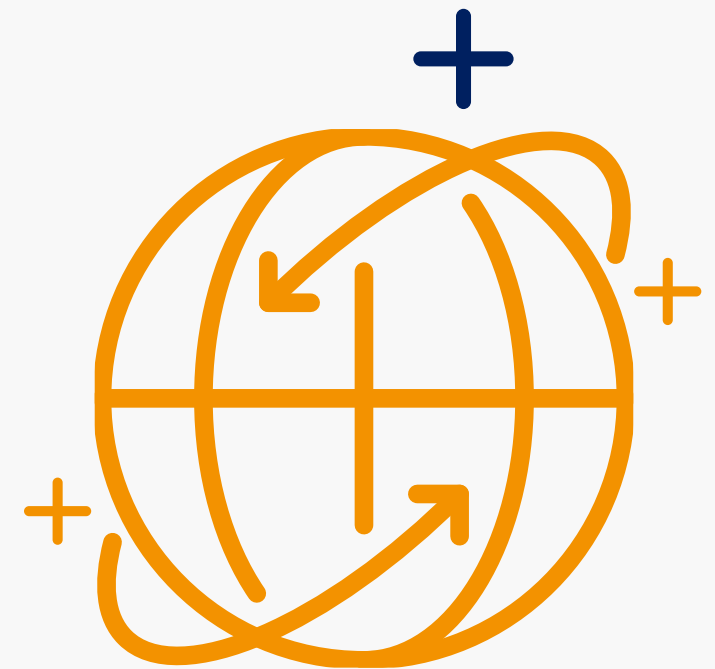


Dynamic Tariffs have been a hot topic of the energy sector for the past few years. Often presented as a key element of future energy markets, they have been pushed forward by European regulators since the Clean Energy Package. The 2021/2022 energy crisis however showed a level of price volatility rarely seen before.

*In this context, dynamic tariffs would be a **terrible idea for most customers**. But the future of dynamic tariffs is not all bleak – **integration and automation are the key**, and they can help deliver real change to sophisticated customers.*



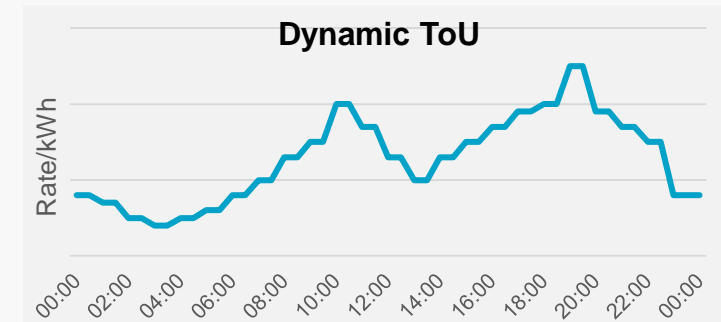
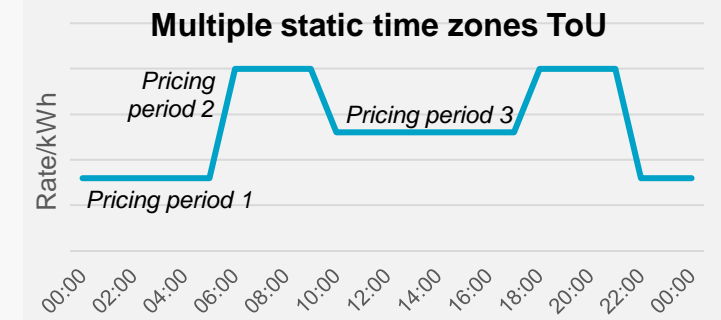
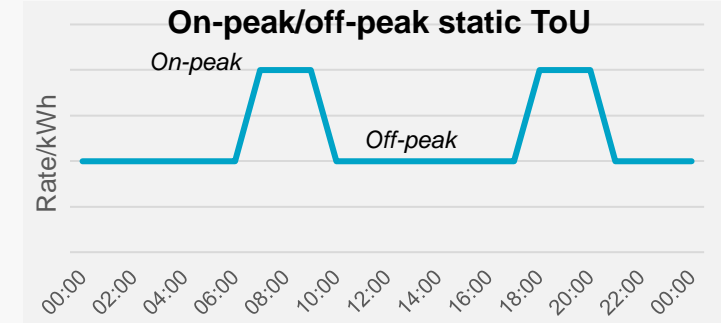
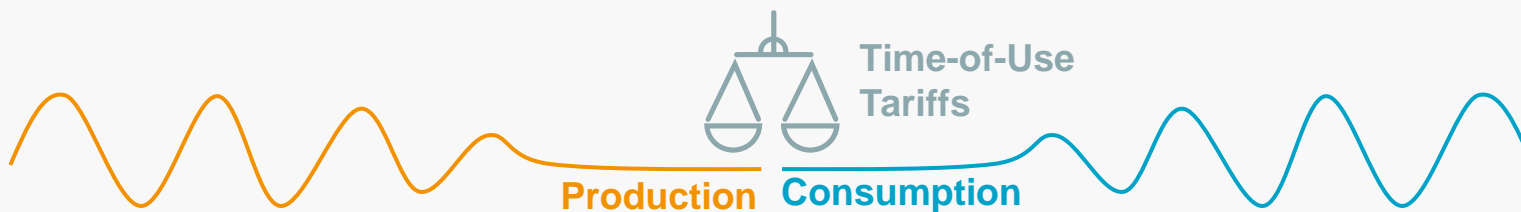
What are Dynamic Tariffs?



What are Dynamic Tariffs cont.?

Time-of-Use tariffs are tools to help better balance production and consumption. Dynamic tariffs aim to do so exactly as the network needs.

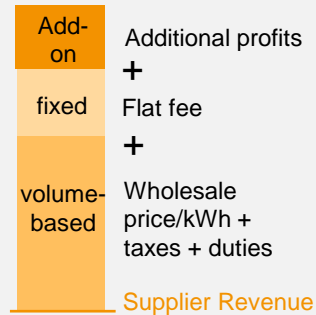
- **Time-of-Use (ToU) tariffs** are instruments to help better **match consumption to production**. By adjusting kWh charges based on the time of the day, they use price signals to reflect the state of the electricity network to the consumer, to incentivise them to increase or decrease their consumption as needed.
- A **Static ToU tariff** breaks up the day into a few time zones that are priced differently. These time zones are agreed in advance and unlikely to change over a certain period (they are static). The time zones are set to reflect **general trends in wholesale energy prices, and incentivise general shifts in consumption patterns** usually from peak-demand periods to off-peak demand periods.
- **Dynamic ToU tariffs** (or Dynamic Tariffs), also called Real-Time Pricing, take this concept to the extreme: prices vary over much shorter intervals, with each interval being priced differently. Currently, almost all dynamic tariffs offered in Europe have hourly price granularity based on day-ahead wholesale energy prices, **meaning each hour within a day is priced differently and these prices are updated every day**. This allows suppliers to reflect variations in wholesale energy prices much more closely, and incentivise the customer to **change their consumption exactly as the network needs**.



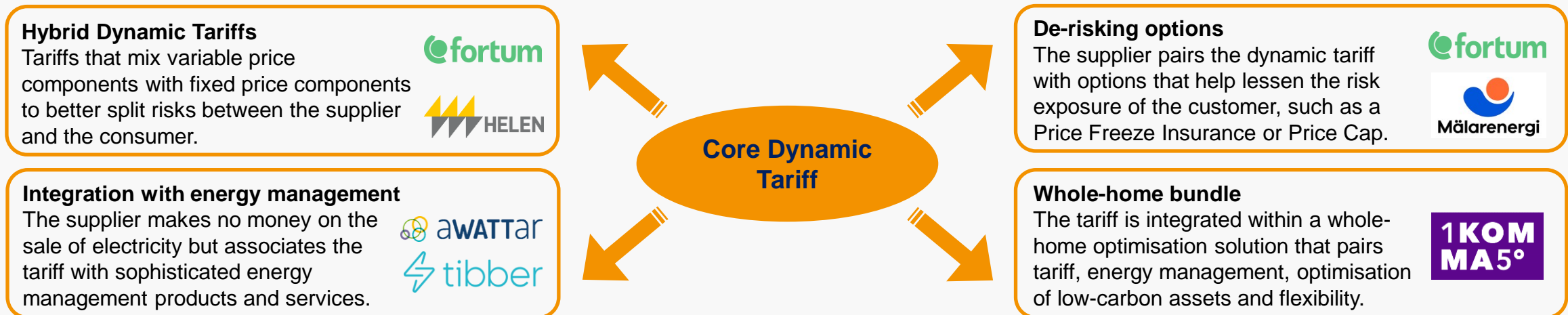
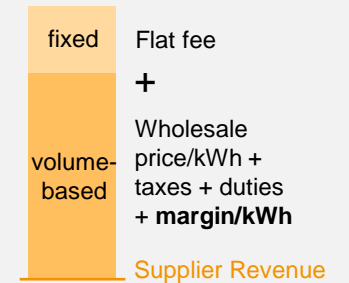
There are different types of Dynamic Tariffs

Although they offer less leeway for different designs than other types of tariffs, dynamic tariffs are not a monolith. There are two main types of dynamic tariffs, which can then be stretched into different directions.

- **Pass-through dynamic tariffs**, in which suppliers offer electricity at cost and don't make any margin on the volume of kWh sold. Instead, suppliers charge a flat monthly fee to cover operational costs and any margin, usually coupled with add-ons including home energy management and low carbon products and services, which is where the supplier will derive profits.



- **Mark-up dynamic tariffs**, in which suppliers add a marginal fee to the wholesale price/kWh such that they make volume-based profits on electricity sales. A flat monthly fee is also usually added. Of the ~100 dynamic tariffs studied, **85% are mark-up tariffs and only 15% are pass-through.**



What are the benefits and limitations of Dynamic Tariffs?



The Benefits of Dynamic Tariffs

Thanks to their ability to pass price signals down to the customers, dynamic tariffs can have many benefits.



Customers

Dynamic tariffs give customers an opportunity to make **energy and cost savings** by **taking control of their consumption**. By shifting large loads away from times when prices are expensive to times when energy is cheaper, they can pay less for the same amount of kWh used. The rate/kWh also tends *on average* to be cheaper for dynamic tariffs than for other types of tariffs, as suppliers don't need to include a hedging premium in the energy rate to cover for market risks. Dynamic tariffs also provide customers with **more transparency over their energy bill**, especially in the case of pass-through dynamic tariffs.



Suppliers

Dynamic tariffs are the **least risky type of tariffs** for suppliers since all price, volume and supply risks are passed down to the customer. The energy crisis showed that suppliers can considerably suffer, and even go bust, if they cannot pass price risks down to customers. Dynamic tariffs are the way to do so entirely.



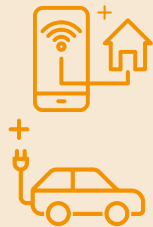
The Electricity System

Time-of-Use, and especially dynamic tariffs, are important instruments to **help consumption better match production**. By passing price signals down to consumers, they **incentivise households to adjust their consumption** according to the needs of the system. By thus reducing peak demand and matching demand to renewable generation, dynamic tariffs can **help alleviate grid constraints and reduce renewable curtailment**. In the short to medium term, this is instrumental to the success of the energy transition.

The Limitations of Dynamic Tariffs

While they do have many benefits, it would be mistaken to think that dynamic tariffs are the silver bullet of the energy transition.

On the customer-side

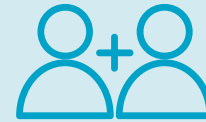


Dynamic tariffs only really allow energy and cost-savings for customers: (i) who are ready to be engaged with their consumption, (ii) who own large loads, (iii) who can closely monitor and control their consumption, and (iv) who are able to shift demand. This means that **only highly sophisticated, usually “deep-green”, customers can reap the value of dynamic pricing**. For customers who don't fit this profile, the savings brought by dynamic tariffs are likely to remain limited.



Not only this, but dynamic tariffs also involve a **much higher level of risk** than other types of tariffs. They might help customers save costs on their energy bill, but are these savings **risk-adjusted** (to both perceived and real risks)? In a post-energy crisis world, this is a question that we cannot ignore. We currently lack the hindsight and reliable enough historical price data to conclude that dynamic tariffs **bring more savings than they involve risks**, especially in comparison with other Time-of-Use or Type-of-Use tariffs.

On the supplier-side



Dynamic tariffs arguably make little sense because they make it much **harder for suppliers to differentiate, and to attract and retain customers**: contracts are non-binding, all dynamic tariffs involve the same level of risk and customers can easily see which supplier has higher mark-ups. In Norway where almost all tariffs offered are dynamic, suppliers are differentiating on minute differences on the surcharge/kWh and monthly fee, as well as by creating partnerships with housing associations for example. But **opportunities for differentiation are few and competition much harsher**.



Energy suppliers thus need to **keep their margins minimal** if they want to be able to attract customers, meaning they make **very little profit on dynamic tariffs**. A wider shift towards dynamic tariffs will accelerate the decrease of volume-based commodity revenues for suppliers, reducing their already low margins on energy supply.

Dynamic Tariffs within Future Electricity Markets

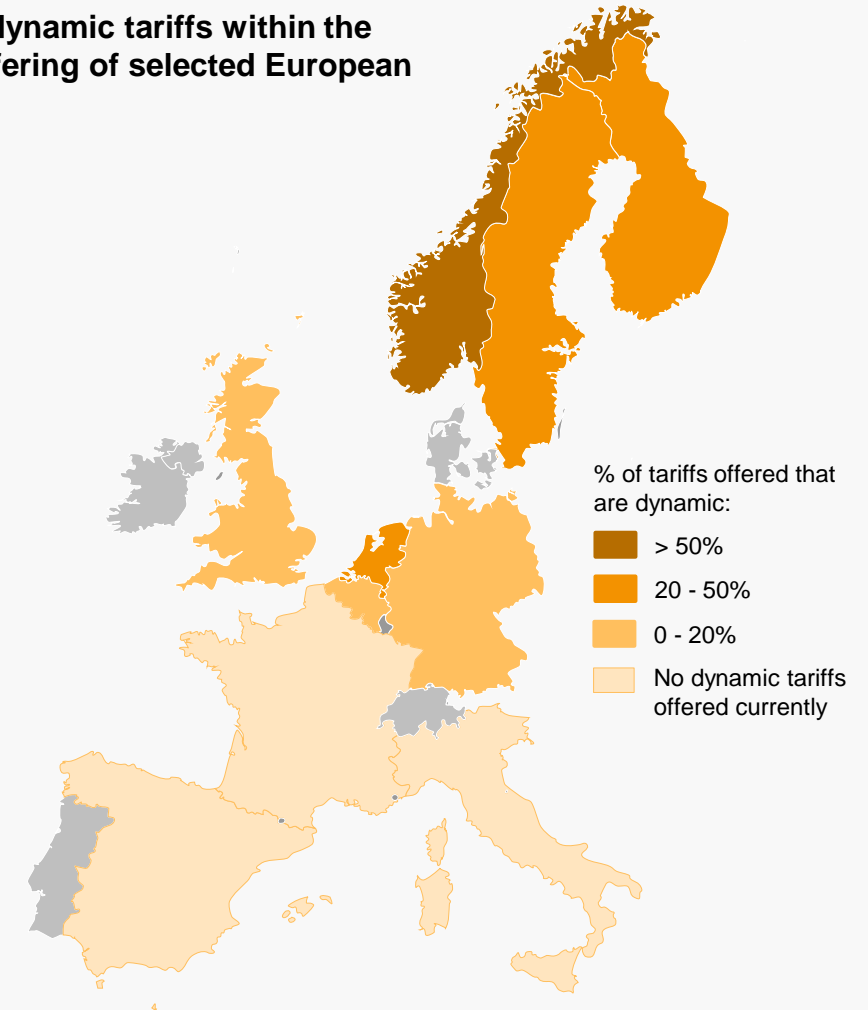


Dynamic Tariffs in Europe

There are very significant country-by-country variances which will impact the value, risk and ultimately uptake of dynamic tariffs.

- Ultimately, the **uptake of dynamic tariffs will vary widely between countries**. Out of 600 tariffs studied in our Tariff Database, around **17% of the tariffs offered are dynamic**. While they have shown to be successful in Norway and the Nordics, it is important to remember that this is primarily thanks to **country-specific factors**. In the case of Norway, these include very high heat pump and EV penetrations, lower price volatility owing to the dominance of hydropower and overall higher trust and risk-tolerance thanks to the supportive stance of the government.
- Better matching consumption to production is key to the success of the energy transition in all countries, but it is important to remember that (i) not all consumers are able to shift their consumption, (ii) dynamic tariffs are only one of many ways to incentivise consumers to do so.
- In most European countries, **other forms of cost-reflective pricing hold greater mass market appeal** to incentivise implicit demand response with far less risks involved. Even fixed and subscription tariffs have their place in the electricity market of the future for customers who seek protection first and foremost. Ultimately, what makes sense for customers will **vary widely between each market and between customer segments within a given market**.

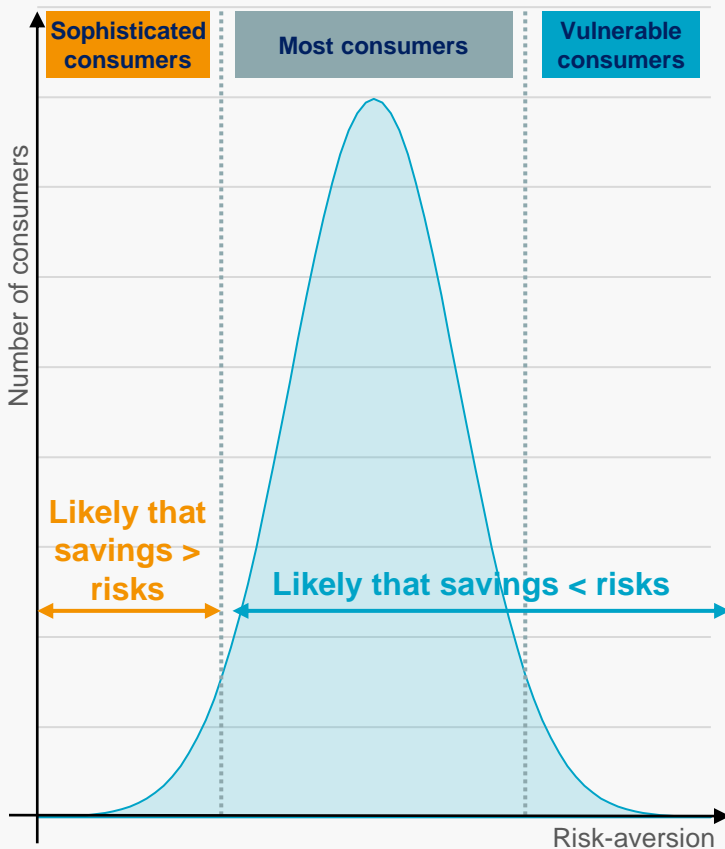
Penetration of dynamic tariffs within the current tariff offering of selected European countries*



*Data from the [NEBMS tariff database](#), a database looking at 600 tariffs in Europe.

What future do we want for dynamic tariffs?

It is undeniable that dynamic tariffs are interesting tools to support the success of the energy transition. However, they are no silver bullet.

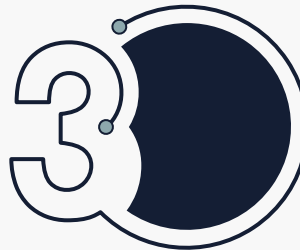


Dynamic Tariffs will remain a niche market

Real-time dynamic tariffs remain **too risky**, and most consumers are likely not ready to take on the price risks entailed, especially after the energy crisis. In most European countries, dynamic tariffs are likely to remain a **specialist option for sophisticated, risk-tolerant customers**, for whom dynamic tariffs can bring more savings than they entail risks.

A diverse tariff environment is crucial

The focus of European and national regulators shouldn't be on how to accelerate the rollout of dynamic tariffs, but on creating a tariff environment that is **varied enough** to provide a **balance between risk, protection and demand response incentives** for all customer segments.



Integration and automation are key to deliver value

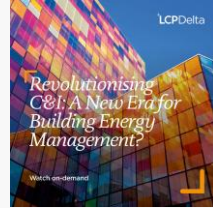
For customers willing and able to derive value from dynamic tariffs, **integration and greater automation of home energy optimisation** will become increasingly key to fully unlock the potential of real-time dynamic pricing. Suppliers like Tibber, Vibb or aWATTar are showing the way forward with pass-through dynamic tariffs that are integrated with energy management and smart home bundles. Ultimately, **the future of dynamic tariffs lies in deeply integrated propositions** similar to what [1KOMMA5° has started offering in Sweden](#), where 'residual' grid electricity is free for those who combine solar, storage, demand-side flexibility and a home energy management system.

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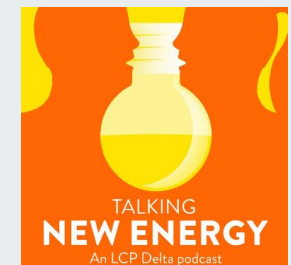
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