

# Dynamic pricing in electricity supply

---

A EURELECTRIC paper

February 2017

***EURELECTRIC is the voice of the electricity industry in Europe.***

*We speak for more than 3,500 companies in power generation, distribution, and supply.*

***We Stand For:***

***Carbon-neutral electricity by 2050***

We have committed to making Europe's electricity cleaner. To deliver, we need to make use of **all low-carbon technologies**: more renewables, but also clean coal and gas, and nuclear. Efficient electric technologies in **transport and buildings**, combined with the development of smart grids and a major push in **energy efficiency** play a key role in reducing fossil fuel consumption and making our electricity more sustainable.

***Competitive electricity for our customers***

We support well-functioning, distortion-free **energy and carbon markets as** the best way to produce electricity and reduce emissions cost-efficiently. Integrated EU-wide electricity and gas markets are also crucial to offer our customers the **full benefits of liberalisation**: they ensure the best use of generation resources, improve **security of supply**, allow full EU-wide competition, and increase **customer choice**.

***Continent-wide electricity through a coherent European approach***

Europe's energy and climate challenges can only be solved by **European – or even global – policies**, not incoherent national measures. Such policies should complement, not contradict each other: coherent and integrated approaches reduce costs. This will encourage **effective investment to** ensure a sustainable and reliable electricity supply for Europe's businesses and consumers.

***EURELECTRIC. Electricity for Europe.***

# Dynamic pricing in electricity supply

A EURELECTRIC paper

February 2017

## CONTEXT

Electricity supply with dynamic pricing is a field of innovation in retail markets which is made possible by the development of efficient wholesale markets and the availability of smart meter data.

**The Clean Energy Package defines ‘dynamic electricity price contract’ as an electricity supply contract between a supplier and a final customer that reflects the price at the spot market or at the day ahead market at intervals at least equal to the market settlement frequency** (art. 2(11), Electricity Directive). It also requires Member States to ensure that every final customer is entitled, on request, to a dynamic electricity price contract by his supplier (art. 11, *ibid.*).

## KEY RECOMMENDATIONS

- **Dynamic pricing refers to retail electricity prices that pass through at least part of the wholesale price volatility to final end users. The EU definition of dynamic pricing should be extended to include time-of-use pricing (ToU), Critical peak pricing (CPP) and Real-time pricing (RTP).** The “dynamism” of these options depends on the length of pricing interval and on how prices are set within each pricing interval. If metered individual consumption load curves based on smart meter readings are used, a cohesive link between retail and wholesale markets can be established.
- **No customer should be obliged to take up a dynamic pricing offer.** Customers should be informed of the level of risk linked to price volatility when opting for highly dynamic pricing.
- **Whilst retailers should be allowed to offer dynamic pricing options, they should be able to decide if and how to do so. No retailer should be obliged to offer dynamic pricing to consumers.** It is up to competition between retailers to see which design is the most attractive for which customer. Furthermore, proper incentives are a prerequisite for consumers’ engagement in dynamic pricing.
- **Retail customers must be adequately incentivized to enhance their flexibility potential and interest in dynamic pricing offers.** 2/3 of the average EU retail electricity bill consists of non-energy components, namely network costs, taxes and levies (also referred to as policy support costs). There is a need to consider more capacity-based charging of these ‘regulated’ components as well as to carefully examine the potential for more dynamic charging of these components.
- **Technical capabilities of meters need to be taken into account.** Dynamic pricing is possible as long as smart meters with minimum requirements that allow reliable consumption readings in specific time slots matching with market intervals as well as corresponding IT infrastructure are available. The draft Directive enables consumers to opt for dynamic pricing offered by a retailer even in locations where the necessary metering functionalities are not in place to make it work because smart meters are not rolled out. In this case, customers should be entitled to such functionalities but may need to bear the costs of the roll-out.

## Table of Contents

---

1.	Introduction .....	1
2.	Forms of dynamic pricing in electricity supply .....	1
3.	Examples of today's dynamic pricing in electricity supply .....	3
4.	Why is the uptake of dynamic pricing in electricity supply not higher?.....	7
5.	How to facilitate increased uptake of dynamic pricing? – Key Recommendations .....	8

## 1. Introduction

**Demand response** can be defined as the possibility for end-use customers to change their electricity usage from their normal or current consumption patterns in response to market signals. In contrast to energy efficiency, which aims at reducing the overall energy consumption, demand response is mainly about shifting consumption to a different point in time. Customers' participation in all schemes must be always voluntary.

There are two major complementary approaches to demand response:

- Under **explicit demand response** schemes, the result of a demand response action is sold upfront in the electricity markets or as network service to system operators, either directly (for large industrial customers) or through demand response service providers/aggregators (supplier or a third party). Consumers receive a specific reward in exchange for their flexibility.
- Under **implicit demand response** schemes, consumers can choose to be exposed to time-varying electricity prices that intend to reflect the value and cost (real or expected) of electricity in different time periods. Armed with this information and with the possibility to control their load through automation, consumers can decide to shift their electricity consumption away from times of high prices. They are rewarded for their flexibility by reducing their electricity bill. They can have their appliances automated/programmed so that they can do it in a hassle-free manner.

**This paper aims at shedding light on dynamic pricing in electricity supply, which is an advanced type of implicit demand response. It contributes to the EU level discussions about the potential of this type of offers and it suggests how to overcome barriers in order to tap it.** It analyses the different possible forms of pricing that establish a link between retail and wholesale markets via the energy component of the retail bill and provides examples of dynamic pricing offers that have been applied in various ways across the EU member states to date. It explains the technical and regulatory preconditions for the development of such dynamic offers.

The paper also reiterates that 2/3 of the EU average retail bill consists of non-energy components, namely network costs, taxes and levies (also referred to as policy support costs). There is a need to lower the levies component in the bill and to consider more capacity based charging of these components as well as to carefully examine potential more dynamic charging of these components.

## 2. Forms of dynamic pricing in electricity supply

Pricing is one of the key components characterising a retail offering (besides the billing options, the form and level of customer service, the type of electricity etc.). **A variety of pricing offers allowing maximum choice and the best fit for customers is crucial.** Retailers prepare integrated electricity offers combining the three elements of the bill, i.e. energy, network costs and taxes and levies. While they effectively pass-through the network and taxes and levies charges, they have an option on how to design the energy component. Retailers should be able to propose to their customers a diversified price list that allows them to choose an optimal exposure to price volatility corresponding to their flexibility potential and risk aversion. Such products may include fixed-priced offers and different types of dynamic pricing.

**Fixed-priced offers** provide a fixed price of the energy component for a defined period of time, regardless of changes in the market price. Such offers are often indexed to average wholesale

market spot or forward prices. Consumers receive the same price every hour during the defined period and they are not exposed to price variations. These offers are suitable for consumers that prioritise having a clear idea of their electricity bill and no exposure to price volatility. In fact, fixed-priced contracts are becoming increasingly popular among household consumers, ACER found in their latest monitoring report.<sup>1</sup> Such consumer could still sell back the energy to the market via participation in explicit DR schemes. They could provide their flexibility to demand response aggregators (a retailer or a third party) to reduce their bill or in exchange for a payment.

Alternatively, **dynamic pricing refers to retail electricity prices that pass through at least part of the wholesale price volatility to final end users.** To varying extent, they link prices to the actual or anticipated variations in wholesale prices. In competitive markets, this marginal cost of generating electricity is expressed by spot prices in the short term and by forward prices for the long term. The more prices and pricing periods correspond to the prices on wholesale markets, in a timeframe that actually provides incentives to shape energy consumption behaviours according to the way wholesale prices evolve, the more ‘dynamic’ they are. The most common options include:

- **Time-of-use pricing (ToU)** is a rate where the price per kWh depends on the time when electricity is consumed. It can be a simple day and night price or e.g. on-peak and off-peak hours splitting the day into several slack periods. It can be also seasonal. Usually periods and prices are known well in advance, but offers where the definition of the day/night intervals may change according to the day-ahead spot price also exist. Prices can also be defined as average prices for different time periods but be directly indexed to the day-ahead spot price.
- **Critical peak pricing (CPP)** is a top-up rate whereby electricity prices substantially increase for the few days a year when wholesale prices are highest, but where prices are lower than average during the rest of the year. E.g. *French Tempo tariff* is a contract with a fixed price all year except for a maximum of 20 days with very high prices. These days are notified to customers the day before.
- **With real-time pricing (RTP)** wholesale electricity prices are directly passed through to final consumers and bills are calculated based on at least hourly metering of consumption, or with even higher granularity (e.g. 15 minutes). The price of such offers is composed of the wholesale price of electricity plus a supplier margin.

Table 1 summarizes possible variations of these options according to two criteria, namely:

- a) **the way of setting the pricing interval, that can be ‘fixed’ well in advance or ‘dynamic’.** The latter are announced day-before or closer to real time intervals or ex post, i.e. after consumption. It can correspond to the granularity of the period at which consumption is metered at different prices. This depends on the available infrastructure e.g. metering equipment and related IT infrastructure, billing processes and rules on reporting periods for meter values.
- b) **the way of setting prices within the pricing interval.** The dynamics of prices could range from average prices for a month or longer period to hourly pricing or even pricing at the interval of the imbalance settlement period (ISP) (15, 30 or 60 minutes). However, there are many possibilities in between where e.g. the day could be divided into two or more pricing periods.

---

<sup>1</sup> ACER/CEER Annual Market Monitoring Report 2015, Retail Markets, p. 18.

In addition, it theoretically assesses the options deriving from the exposition to price volatility and related risks, flexibility incentives provided to consumers and overall level of dynamism. Besides the design of the offering, the real incentive to adopt a flexible behaviour depends also on the price volatility of the wholesale market prices and on customers' risk aversion level.

The evaluation also assumes that the necessary metering functionalities and appropriate processing and billing are in place for implementing such 'dynamic' and 'very dynamic' offers. If metered individual consumption load curves are used for dynamic pricing, a cohesive link between retail and wholesale markets can be established, thus providing signals to consumers to change their consumption behaviour. Where hourly metering of consumption is not available, a pass-through of a published reference price (e.g. day-ahead price multiplied by an average consumer load profile) can be used as a transitional measure. However, average wholesale prices or real-time prices with average load curves do not reflect the true consumption patterns and do not create meaningful incentives for consumers to adapt their consumption behaviour.

Type of offer	Fixed	ToU	ToU	CPP	ToU	ToU	CPP	RTP
Prices	Fixed	Fixed	Fixed	Fixed	Dynamic	Dynamic	Dynamic	Spot/DA
Pricing period	Fixed	Fixed	Dynamic	Dynamic	Fixed	Dynamic	Dynamic	Hourly or shorter ISP
Exposure to price volatility	None/Low	Low	Low		Medium-High	High		Very high
Overall assessment	Not dynamic		Partly dynamic			Dynamic		

Table 1: Forms of dynamic prices

### 3. Examples of today's dynamic pricing in electricity supply

The acceptance of dynamic pricing and the incentive to offer flexibility differs between different types of customers due to their varying risk aversion levels, i.e. whether they are willing to become exposed to wholesale market price volatility or prefer stable energy prices.

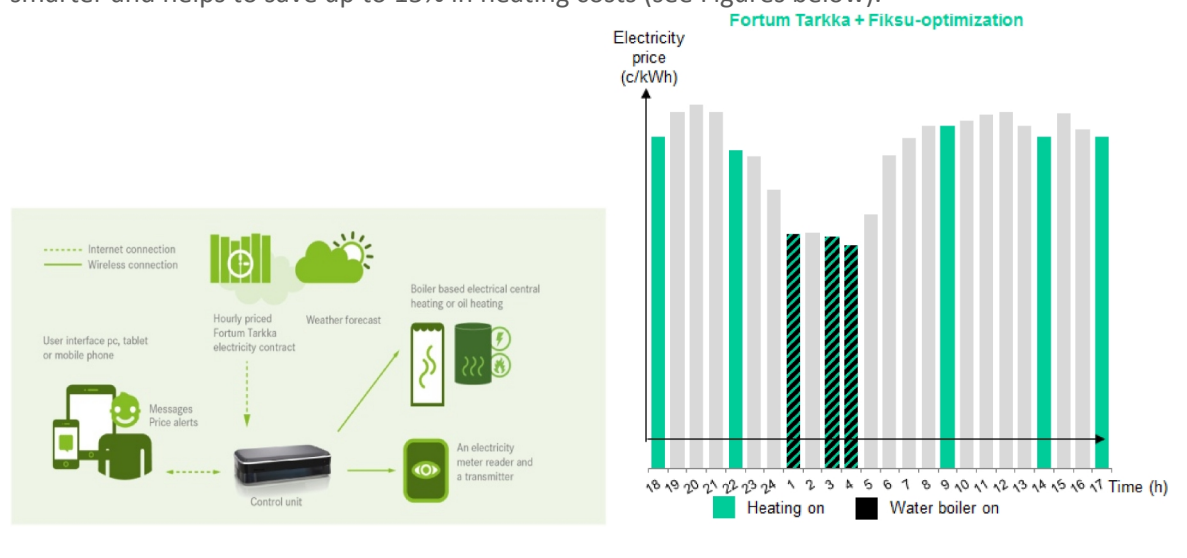
Dynamic pricing including real time spot based pricing has been quite commonly taken up by industrial customers. In a number of countries, household and small commercial customers have been offered simplified forms of ToU and CPP. So far, spot based pricing exists for residential consumers only in the Nordic, Estonian and Spanish electricity markets. The boxes below further explain the different approaches.

## Finland

In Finland, consumers can choose dynamic pricing for electricity. In practice this results in a price that is very transparently based on the Nord Pool spot price for the price area of Finland. The customer pays the hourly price + retailer's premium + typically a monthly fixed fee. Approximately 10 % of the customers are on this tariff (as of over 3.4 million metering points, about 340.000 customers).

The consumer can check the prices for each hour of the next day e.g. from the website. The prices are published according to the spot market timetable, so for the day-ahead at around 2pm the prices for next 24 hours starting at midnight are 'locked'. The customer pays according to his hourly consumption times the price for that particular hour. This requires that the customer has hourly metering, which is the case for practically every consumer in Finland nowadays.

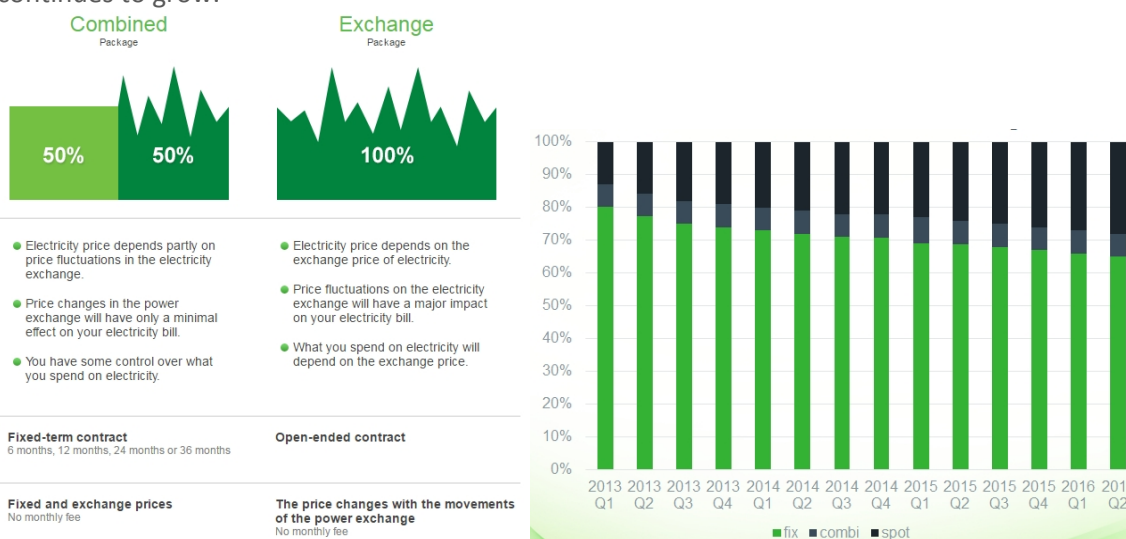
On top of that, some offerings available in the market allow for price optimized heating hours, based on actual heating capacity and weather conditions. This makes the existing heating system smarter and helps to save up to 15% in heating costs (see Figures below).





## Estonia

Smart meter roll-out in Estonia allowed for take up of products that are closely linked to the wholesale electricity market, including 'combined offers' and spot based 'exchange' offers (see description below). The number of spot agreements has more than doubled in 3 years and continues to grow.



## Norway

About 65% (80TWh/year) of the electricity delivered in the Norwegian market is on dynamic pricing based on spot prices with hourly metering. This is mainly due to the fact that industrial customers using 100.000 kWh/year or more already apply spot pricing with hourly metering.

All Norwegian households will have hourly metering by 31 December 2018. Dynamic prices for households without smart meters are calculated based on different models:

1. Average monthly spot price;
2. Average spot prices for shorter periods;
3. Dynamic prices based on spot as well as the traded short term products in the futures market, e.g. a mix of spot, weekly and monthly contracts. This product is comparable to banking markets' competition in the market for interests. Suppliers offering these contracts are obliged to give the customer one to two weeks of warning before changing their prices.

## Dynamic pricing as a form of default tariffs

### Spain

The Voluntary Price for Small Consumers (VPSC) (<https://www.esios.ree.es/en/pvpc>) came into force in April 2014. It can only be contracted by small consumers (contracted power equal to or less than 10kW) through so-called 'reference retailers'. It is a default tariff of which consumers can opt out and subscribe to another supplier or contract structure. Roughly 12.1 millions of customers from the total of 25.7 million of eligible customers are on this tariff today.

The VPSC is calculated for each day and hour by adding up the following three components: (i) hourly electricity price in wholesale markets, (ii) regulated network charges, and (iii) a regulated retail margin. All customers pay the energy at the hourly spot price plus balancing costs. Applicable hourly prices are published at 8.15pm of the previous day by the TSO.

As for the energy component, customers with smart meter and VPSC are billed according to their actual hourly consumption. Customers without smart meter are billed based on profiles published and continuously updated by the TSO, i.e. these customers are charged an average price rather than actual hourly prices. At the moment, smart meter roll-out is at around 70% of customers and should reach 100% by the end of 2018.

As for the regulated access tariffs<sup>2</sup>, and for capacity payments, customers can select between three types of tariff structures:

1. *General flat rate*, i.e. the time variation of prices is exclusively due to changes in spot prices. In general, electricity prices vary little throughout the day depending on the spot price, but are cheaper at night most of the year.
2. *Night time rate*: The access tariff is time dependent; peak (in the morning) or off-peak (at night), with different peak and off-peak periods in winter and in summer.
3. *Super valley rate*: In addition to peak and off-peak access tariffs, there is a cheaper time period from 1am to 7am called 'super valley'. This access tariff is conceived for EV charging.

### Denmark

Spot based default contracts for household customers will be introduced as of 2017. Customers can opt out of these (but fixed prices are generally more expensive). 80% of customers will have smart meters by next summer. Retailers are supportive of these developments.

---

<sup>2</sup> Access tariffs in Spain include the grid charges, as well as energy policy costs that include mainly RES and CHP support and recovery of previous years' tariff deficit.

#### 4. Why is the uptake of dynamic pricing in electricity supply not higher?

As outlined above, dynamic electricity price contracts linked to the wholesale market are only available for commercial/residential consumers in some EU countries. More complex forms of dynamic pricing such as real time pricing are likely to further develop in the years to come and could be more suitable as the system moves to higher shares of RES with limited predictability in the power system. Offering dynamic electricity prices is also interesting for retailers as it provides them opportunity to reduce their hedging costs. Nevertheless, there are a number of challenges to overcome in order to make such offers available and sufficiently attractive for consumers:

- Lack of awareness of risks & benefits; convenience requirements:

Consumers can be interested in dynamic pricing if they are well informed and if the schemes are designed in an easy-to-use way to make savings in the bill achievable. Without information about their level of exposure to price volatility, i.e. knowing when electricity prices increase, consumers may potentially face significant increases in their bills during certain months. E.g. in the case of RTP with a direct exposition to spot prices, customers should be aware that they could on one day pay more for their electricity than for the rest of year.

- Insufficient or even no savings to be made, due to:

- a) **Weak price signal to shift consumption:** Firstly, prices in the wholesale market may not be high and volatile enough (*refer to ACER/CEER MMR 2016*). Secondly, the 'energy component' represents only one third of the average EU retail consumers' bill. The remaining 2/3 of the bill are regulated charges, including network costs and taxes & levies (policy support costs). A continuously increasing tax burden and other policy costs financed by electricity provides the wrong signals as they create incentives to switch to other forms of energy, at the expense of decarbonisation goals, and it blurs the benefits of dynamic pricing.

- b) **Limited consumers' potential to shift consumption:** Experiences from the Nordic countries are not easily transferable to all EU markets as the shifting potential is relatively high in this region due to higher average consumption, in particular in winter. In countries like France, where high shares of retail consumers are equipped with electrical heating and electrical water heating, the deployment of smart meters will allow for the development of innovative pricing beyond the existing ToU and CPP tariffs. In other countries, the uptake of heat pumps and electric vehicles that provide considerable shiftable load potential might determine if a significant number of residential consumers will engage in dynamic pricing and other demand response schemes. However, the uptake of those technologies is still uncertain. The fact that consumers in most European countries pay regulated charges mainly based on their consumption, i.e. kWh, even though the costs underlying these charges are largely independent of the volumes consumed, discourages consumers from investing in electric heating and cooling appliances as it contributes to increasing electricity prices for consumers who cannot cover part of their consumption e.g. by self-generation.

- High upfront cost of smart home equipment:

Some pilot projects proved that consumers engage in the market and adjust their consumption if they have access to advanced information or energy management tools and that ultimately, only automated solutions will be interesting for most customers. Otherwise, consumers may find dynamic prices and responding to them too invasive and complex,

resulting in response fatigue and only very limited behavioural changes.<sup>3</sup> As the internet of things develops, home automation including smart thermostats and other smart appliances within the smart home will improve consumers' experience. Customers will remain in command – retaining the ultimate control of their appliances – and will be able to benefit from dynamic offers without impacting their lifestyle. Recent studies show that there is already a high level of interest amongst customers in the adoption of smart home devices, but they still do not fully value them. Cost is the greatest barrier to the purchase of such devices.<sup>4</sup> However, a number of retailers already offer products that help consumers bring down the upfront cost of the initial hardware investment. Different financial models are possible, including bundling with other services, or leasing.

- Absence of enabling technology (metering equipment & related ICT infrastructure) and processes:

Development of pricing options adjusted to the existing meters or the smart meters presently under deployment together with smart appliances such as energy boxes that are already offered by suppliers and ESCOs can test households and commercial consumers' interest in more volatile pricing option. Dynamic pricing is possible as long as smart meters with minimum requirements that allow reliable consumption readings in specific time slots matching market intervals are available.<sup>5</sup> Nevertheless, smart meters have been already rolled-out or are planned to be rolled-out in only 14 EU member states. In addition, corresponding consumption records, data processing and billing procedures need to be put in place which requires investment in IT infrastructure. In countries where they are rolled-out, smart meters are mostly not able to dynamically identify a particular time, or set certain hours as critical. Therefore, Energy Management Systems should also be developed to be integrated with the telemetry software that allows the creation of multiple tariffs and tariff periods adjusted to different load curves, identifying peak periods and opportunities for savings in consumption.

## 5. How to facilitate an increased uptake of dynamic pricing? – Key Recommendations

Pricing differentiation can be an important competitive advantage. As smart metering roll-outs progress, dynamic pricing offers will increasingly emerge and may be of interest to consumers, provided that price signals from the wholesale markets are strong enough. At the same time, alternative retail offerings more similar to today's broadband offerings are likely to appear as the share of decarbonised power production, from wind and solar in particular, grows in the electricity generation mix. Retailers could also help overcome customer resistance to purchase of smart home devices by offering customized payment plans (e.g. instalments) and bundled packages of services.

The following measures are necessary in order to incentivize the appearance of dynamic pricing offers in the market and ensure their acceptance by customers:

---

<sup>3</sup> See e.g. Linear Intelligent Networks (2014) "*Demand Response for Families*".

<sup>4</sup> European Utilities: The Smart Home...Reality or Mirage? Key findings of Bernstein Smart Home Survey, 2016.

<sup>5</sup> However, the technological prerequisites for advanced demand response services are not yet installed, even in countries where smart meters are being rolled out. E.g. for participation of users in explicit DR schemes in balancing markets, smart meters with a reading interval corresponding to the settlement time period are a technical prerequisite. The cost of this additional functionality should be taken into account and cost benefit analysis is necessary in this case as automatic updates and upgrades that constantly bring improvements at smart phones users' fingertips are not replicable here.

- Empowerment through information:  
Customers should be adequately informed about the opportunities and risks of dynamic pricing contracts. As these contracts become more commonplace, consumers' awareness and learning will further increase with their participation or the participation of someone they know.
  
- Open door to innovation, less regulation:  
**Participants in the liberalised market shall have the freedom to design their offers, including the freedom to decide whether and how to offer dynamic pricing contracts.** Where smart meters are (being) rolled-out, offering such contracts is or will be commercially attractive for suppliers. However, mandating certain price offerings conflicts with the idea of competitive markets with value proposals linked to consumer preferences. Obliging suppliers to offer specific contracts or even intervening in the way they are designed would imply re-regulating the market. If the supplier margins within such offerings are regulated and set below the cost of the related service as in the case of the Spanish VPSC tariff,<sup>6</sup> such 'regulated dynamic pricing' can actually limit competition by preventing customers from switching to competitive offers or incentivize customers to switch from competitive offers back to regulated offers.<sup>7</sup>  
In addition, IT needs at the suppliers' end necessary for setting up such pricing structures (pricing models, consumption data treatment, invoicing processes for all options) might represent an important entry barrier that can do more harm than good for consumers, particularly if there is not a high demand for these kind of offers or if meter functionalities only exist for a small number of clients. Not all suppliers (in particular the small ones) have this kind of pricing already developed. They would need to develop IT structures to include this new type of offers into their product portfolio.
  
- Better pricing incentives to increase potential savings:  
**Appropriate pricing incentives need to be put in place for consumer investment in the electrification of heating, cooling and transport as well as for consumer consumption decisions.** These incentives should include reforming retail pricing as a whole, not only focusing on making the energy component of the bill more dynamic. Retailers will be interested in reinforcing the price signal (energy and network) and bring it to the customer in a simple way. The following measures are key in order to allow them to do so:
  - a) **Lowering the levies component by financing policy support cost through alternative means such as tax credits or spreading their costs over other fuels:** In the Czech Republic, the RES policy support is being shared between the state budget (36% in 2015) and electricity rate payers. In Denmark, moving the Public Service Obligations (PSO) levied on electricity bills that used to finance RES - today Danish households' electricity bill comprise about 70% of taxes/levies - to general taxation are ongoing. Also in Germany, the debate about extending the RES levy (EEG Umlage) to the heating and transport sectors<sup>8</sup> has been launched.

---

<sup>6</sup> This is the case of the Spanish VPSC tariff. The Spanish NRA CNMC (Comisión Nacional de los Mercados y la Competencia) clearly stated that the regulated supply margin does not cover the costs of an efficient supplier (see e.g. CNMC report from May 2016) and proposed to increase the current supply margin (4€/kW per year, 16,1€/customer per year) up to 6,34€/kW per year and 25,5 €/customer per year, respectively.

<sup>7</sup> Spanish regulator also recognised that this is the case. See Informe de supervisión del mercado minorista de electricidad 2014, CNMC, p. 24.

<sup>8</sup> See a study commissioned by Institut für ökologische Wirtschaftsforschung "Möglichkeiten zur Umgestaltung der EEG-Umlagebasis", 2016.

- b) **Charging the remainder of the ‘regulated charges’, i.e. policy costs and networks costs, in alternative ways:** All in all, developing a set of tariff structures with different shares of capacity-based (kW) and energy-based (kWh) components should be enabled by the competent authorities based on consumers’ and prosumers’ contracted capacity and consumption level and patterns. The increase in the capacity part of the tariff does not hinder the use of network tariffs as a complementary instrument for energy efficiency and demand response and reinforces the incentive for rational behaviour.<sup>9</sup> These regulated charges may be conveyed with flat, time of use, peak pricing or dynamic options, depending on consumers’ choice – which could further reinforce the signal.<sup>10</sup> As for network tariffs, a number of countries have chosen to also introduce Time-of-Use (ToU) network tariffs with few periods (such as limited hourly/seasonal time specific periods).<sup>11</sup> ToU network tariffs charge different pre-defined prices at pre-defined times of the day or year. Such prices can be set up based on capacity (power), used or contracted. In Portugal, dynamic network tariffs, mainly with CPP options, are currently being studied. In France, dynamic network tariffs for customers up to 20 kV are to be implemented as of 2017 that combine simple ToU for winter/summer and day/night with a peak period of 10 to 15 days that will coincide with the highest demand of the year as decided by the TSO. If the consumer still uses the network during these 10-15 days, he knows that he will pay about double the price in €/kWh than for the other days.

As regards more complex dynamic network pricing (tariffs that would vary at short term notice for certain time intervals) assuming that the different states of the distribution network can give rise to differential pricing locally and closer to real-time, the added value at household level has to be further studied as it can entail higher complexity and implementation costs and can have an impact on suppliers’ offers in some cases. Moreover it is questionable whether they can be designed to be really effective, in particular with a lot of decentralized generation that could lead to local congestions and thus large differences from one part of the grid to another.

At the same time, besides time-differentiated network tariffs it needs to be acknowledged that DSOs will have to be allowed to alternatively procure flexibility services from flexibility markets, another solution currently under investigation. This would allow providing more targeted and thus potentially more effective signals while involving suppliers and aggregators.

- Right to have a smart meter:

That draft Directive requires that if consumers choose to engage in a dynamic pricing scheme but the necessary metering functionalities are not in place, they should be entitled to such functionalities. But they need to be aware of the metering prerequisites and they may need to bear the cost of an individual smart meter installation, as requested by art. 21 of the draft Electricity Directive. In order to make the right to opt for dynamic pricing according to art. 11 beneficial for consumers, the legislation should make a clear link to the right to opt for the smart meter. Only in this way, it can be ensured that the necessary infrastructure is in place even in countries where smart meters rollout is not planned or finished yet.

---

<sup>9</sup> More capacity-based network tariffs (especially for low voltage consumers) reflect the higher network costs associated with peak demand and provide customers with incentives to reduce their peak load, resulting in a more efficient use of the network. They provide better incentives for a more efficient use of energy overall.

<sup>10</sup> [Retail Pricing for a Cost-effective Transition to a Low-carbon Power System, EURELECTRIC 2016](#)

<sup>11</sup> See EURELECTRIC paper on Network tariffs, 2016.

EURELECTRIC pursues in all its activities the application of the following sustainable development values:

Economic Development

▶ Growth, added-value, efficiency

Environmental Leadership

▶ Commitment, innovation, pro-activeness

Social Responsibility

▶ Transparency, ethics, accountability



Union of the Electricity Industry - EURELECTRIC aisbl  
Boulevard de l'Impératrice, 66 - bte 2  
B - 1000 Brussels • Belgium  
Tel: + 32 2 515 10 00 • Fax: + 32 2 515 10 10  
VAT: BE 0462 679 112 • [www.eurelectric.org](http://www.eurelectric.org)  
EU Transparency Register number: [4271427696-87](https://ec.europa.eu/transparency/regexpert/?s=details&id=4271427696-87)