

Denmark

- What incentives are currently in place for DSOs to engage in demand response?

AND

- Is there a need to adjust or add incentives to realize the full potential for flexibility?

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The legal framework

Possibilities regarding flexibility services

1. Tasks of the DSO's
2. Competences of the Regulator – DSO
 - 2.1. Tariffs
 - 2.2. calculation principles
 - 2.3. NB! The "Wholesale model"
3. Further tasks - Clean Energy Package
4. Challenges

1. Denmark – Tasks of DSO's

- incentives -

A DSO shall:

- 1) Maintain, renovate and extend the grid
- 2) Connect suppliers and customers
- 3) Provide capacity and access to the grid
- 4) Measure supply and purchase
- 5) Roll out smart meters
- 6) Give information to the datahub

And shall further :

- 7) Perform tasks concerning environmentally friendly production (RE)
- 8) Ensure energysaving measures
- 9) As alternative to gridexpansion, include measures on energyefficiency through DSM or decentralised production

2. Competences of the Regulator

- concerning the DSO -

In short:

- Supervise the market
- determines revenue caps and approves tariff methodologies and
- Approves DSO terms of connection
- Approve TSO's retailmarket regulation (datahub)

2.1. Tariffs

The tariffs must be fixed:

- objectively and transparent
- according to non-discriminatory criteria
- for which costs the individual buyer categories raise and
- according to the necessary costs, i.e.: purchase of energy, wages, services, administration, maintenance, other operating costs and depreciation and return on capital - taking into account any other income generated by the operation of the licensed business

2.2.Tariff calculation principles

The overall principles reflect:

- Retailers pay for distribution of power according to their customers' consumption. There is no in-put fee.
- The distribution tarif consists of a tarif/consumption and a subscription fee.
- The so-called waterfall principle
- Time-of-use tariffs for hourly metered customers is possible cross-country and all remotely read meters are rolled out by 2020

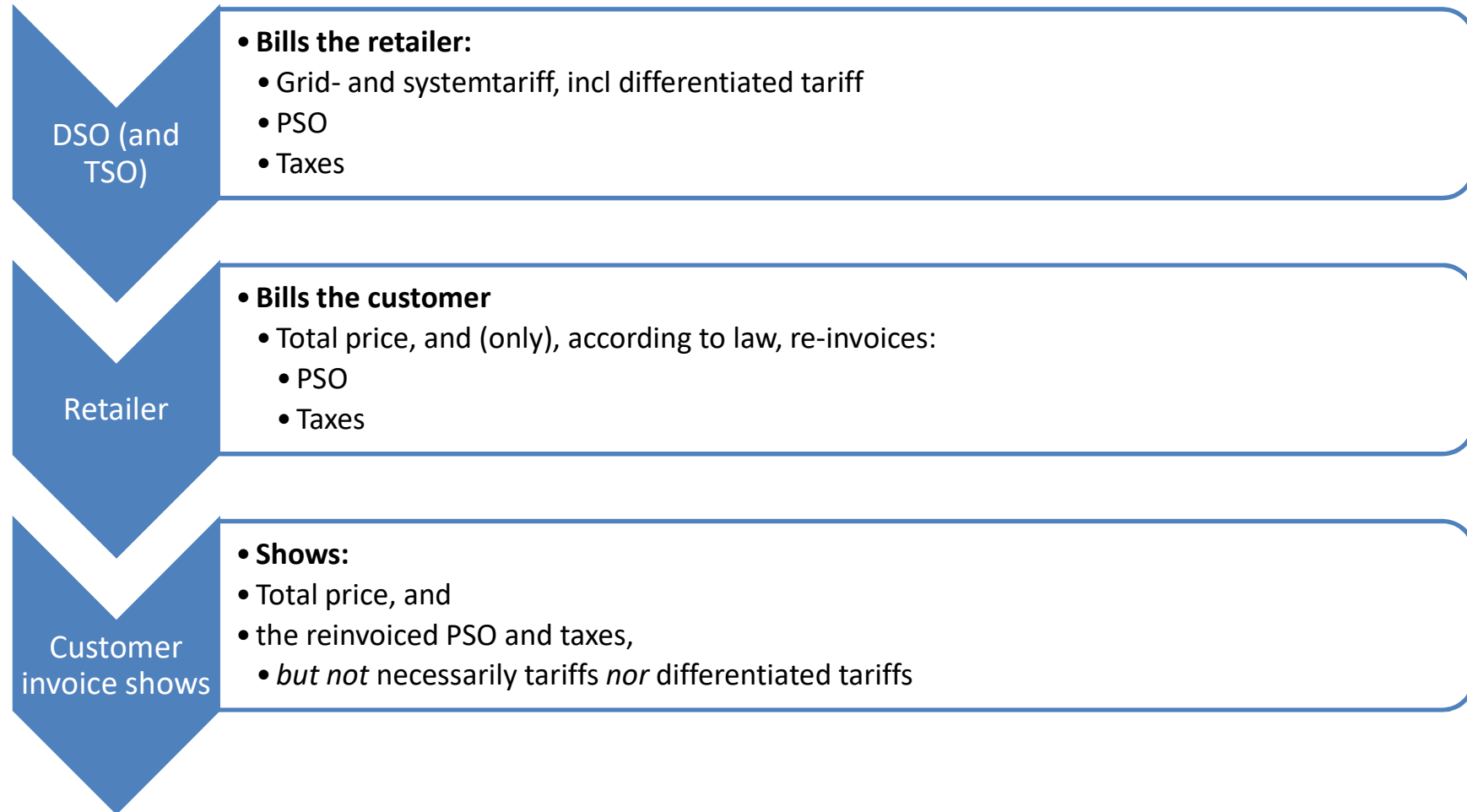
2.3. Wholesale model

The so-called "Wholesale model" was implemented 1. April 2016, i.e. the retail suppliers :

- became the central players
- buy and bill the customers for grid services, i.e
-> for delivered electricity

According to prices/methodologies that are NOT approved by DERA!

The Whole sale model



3. Further tasks for DSO's in the future

CEP - *extract*

- Procure services to improve efficiencies, ensuring effective participation of all market participants including renewable energy sources, demand response and aggregators.
- Network development plan every 2 years, incl. demand response, energy efficiency, energy storage facilities or other resources that distribution system operator is using as an alternative to system expansion
- May - only by way of derogation - own, develop, manage or operate recharging points for electric vehicles or energy storage facilities.
- Data compliance programmes when smart metering systems are implemented

4. Challenges

NRA (new) competences:

- Regulate the market?
- Issue licences?
- Secure the correct price signal (flexibility) to the end-user?

DSO tasks / non-tasks:

- Procure efficiency services – together with the TSO
- Only - by way of derogation - own batteries and recharging points

Tariffs

- Revise the tariff calculation principles (new costs)
- Secure the correct price signal to the end-user?
- Do we need to adjust the "Whole sale model"?

Finally:

tarification in the future

The government has published a plan:

Supply for the future

- in which an analysis of cost reflective tariffs is foreseen, and among others
- Analysing advantages and disadvantages of transition from primarily consumption-based payment to capacity-based payment

And

The Ministry of Tax has recently published an analysis on levies and taxes on energy (green energy)

Looking into, among others:

How the current taxes and subsidies ensure the framework conditions for increased integration of green energy, including Smart Grids, storage of energy and the possibility of using dynamic electricity taxes, PSO and tariffs.

And points out:

That the tariff structure should be changed, as it does not reflect the cost of supply of electricity in peak periods and as such should be more dependent on capacity than consumption per. kWh. Furthermore, it does not take into account that the increased amount of electricity from wind turbines and solar cells, may imply that producers rather than consumers need and gain by the benefits of expansion.

See: <http://www.skm.dk/media/1485757/afgifts-og-tilskudsanalysens-delanalyse-4.pdf>