

Updated Danish DSO tariff model – and focus points for future development in tariff design



# Updated Danish DSO tariff model – and focus points for future development in tariff design



## Brief

- 1) Why an updated Danish tariff model?
- 2) Short description of the updated tariff model
- 3) Next steps in Denmark?

#### Why an updated tariff model from April 2016?



#### Support a more active role for customers in the electricity market

- Implementation of new market model (supplier centric model) calls for harmonization in tariff schemes for the benefit of suppliers (and customers)
- Give customers a new opportunity to respond to price signals
- Fair treatment of customers who wants to produce part of the electricity themselves



#### New Danish market model from April 2016

#### **Current market models**



#### **Current model (Non-integrated Current model (integrated DSO** Supplier) and Supplier) **Two bills** One bill TSO TSO $\mathbf{V}$ $\sqrt{}$ DSO DSO $\sqrt{}$ Supplier Supplier Customer Customer



## What has a new Market Model to do with tariff schere RNSK

Suppliers prefer harmonized tariff structure across app. 65 DSOs with:

- Low complexity
  - Stability and predictability

#### Harmonization:

- Common definition of customers
- Common distribution of costs
  - on types of costumers
  - on volumetric vs. fixed charge
- Common tariff signals for demand response

### Short description of the updated tariff scheme



Focus on:

- Harmonization
- ToU energy tariffs
- Prosumers

#### **Common definition of customers**



**5** types of customers

#### Customers are categorized by physical connection point



#### Harmonized categories of costs in DSOs



9 Categories of costs:

- Operation and maintenance of the grid
- Operation and maintenance of meters
- General administration
- Energy saving activities
- Network losses
- Depreciation
- Customer center
- Rate of return
- (Other costs)



#### Allocation of costs on voltage levels





#### Allocation keys:

- Direct allocation
- Distributed kWh
- Value of assets
- Number of meters

### **Categories of costs and allocation**



	Fordelings- principper	Pris-element	Vandfald	Tidsdifferentiering
1. DRIFT OG VEDLIGEHOLDELSE AF ELNETTET				
1.1 Drift og vedligehold af transformerstationer	Direkte kWh Direkte + kWh	Tarif	Ja	Ja
1.2 Drift og vedligehold af ledningsnettet	Direkte kWh Direkte + kWh	Tarif	Ja	Ja
1.3 Øvrige drifts- og vedligeholdelsesomkostninger	kWh Direkte	Tarif Abonnement	Ja	Ja
2. OMKOSTNINGER VEDRØRENDE MÅLERE				
2.1 Drift og vedligeholdelse af målere	Måler - driftsnøgle Direkte	Abonnement	Nej	Nej
2.2 Indhentning og validering af måledata	Måler - datanøgle Direkte	Abonnement	Nej	Nej
3. OMKOSTNINGER TIL KUNDECENTER				
3.1 Omkostninger til kundecenter	Antal målere Direkte	Abonnement	Nej	Nej
4. GENEREL ADMINISTRATION				
4.1 Generel administration	Antal målere Direkte	Abonnement	Nej	Nej
5. ENERGISPAREINDSATS				
5.1 Faste omkostninger til energispareindsats 5.2 Variable omkostninger til energispareindsats	Antal målere kWh	Abonnement Tarif	Nej Nej	Nej Nej

4 last columns (allocations):

- Principle for allocation of costs on voltage level
- Principle for allocation of costs on variable tariff or fixed tariff
- Principle for allocation of cost as a downward running tariff (or not)
- Principle for allocation of costs on time of use (or not)

#### **Categories of costs and allocation**



	Fordelings- principper	Pris-element	Vandfald	Tidsdifferentiering
6. NETTAB				
6.1 Omkostninger ved nettab (kun ledningsnettet)	Direkte	Tarif	Ja	Ja
	kWh			
6.2 Omkostninger ved nettab (transformerstationer)	Direkte	Tarif	Ja	Ja
	kWh			
7. ØVRIGE OMKOSTNINGER				
7.1 Øvrige omkostninger	-	-	-	-
	Direkte	Tarif	Ja	Ja
	kWh	Abonnement	Nej	Nej
	Antal målere			
8. AFSKRIVNINGER				
8.1 Transformerstationer	Direkte	Tarif	Ja	Ja
8.2 Netaktiver, ekskl. transformerstationer og målere	Direkte	Tarif	Ja	Ja
8.3 Målere	Måler - afskrivningsnøgle	Abonnement	Nej	Nej
	Direkte			
8.4 Øvrige anlægsaktiver	kWh	Tarif	Ja	Nej
	Direkte			
9. FORRENTNING				
9.1 Forrentning	Værdi af netaktiver	Tarif	Ja	Ja



Give customers an opportunity to respond to price signals (Time-of-Use energy tariffs)

#### Common tariff signals for demand response: Common load curves and "traffic lights" (ToU)





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23-24			



### Common Time of Use energy tariffs: Will they play an important role in the <u>short run</u>?



## Electricity price formation for a household consumer, 2015







## Prosumers shall contribute to the network cost recovery in the same way as other customers

# Prosumers: Current tariffs are based on NET withdrawal of energy from the grid





Kunden betaler nettarif af M3-M2 (nettoforbrug)

Prosumers: Updated tariff model is based on GROSS withdrawe of energy from the grid and a tariff on self-consumtion



Både M1, M2 og M3 måles.

Kunden betaler nettarif af målingen *M*3 (for levering fra net)

Kunden betaler rådighedsbetaling af egetforbruget af produceret energi opgjort ved M0=M1-M2

#### Next step?



- Focus on implementation of the updated tariff scheme from 2016
- Evaluate first test experiences with ToU tariffs and change in customers behavior
- Evaluate the need for peak shaving in DSOs

