



# Demand side flexibilization of small customers in Austria

oekostrom AG

Maximilian Kloess, November 6<sup>th</sup> 2018,

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# The Concept of Variable Tariffs

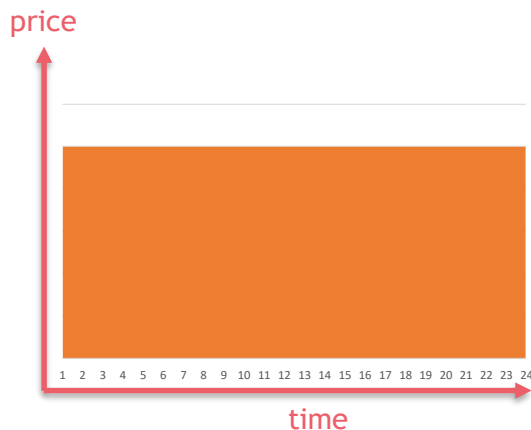
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# The concept of variable Tariffs

## Variable tariffs (or time of use tariffs)

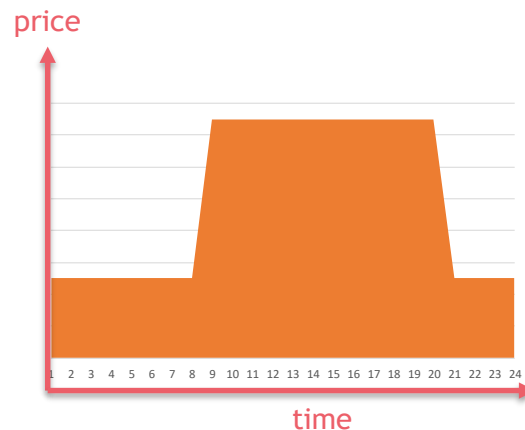
- Are tariffs, where the power price of the customer depends on the time when the power is consumed during the day
- Currently applied for most power producers and large consumers
- Application for small customers requires smart meters

### fixed tariff

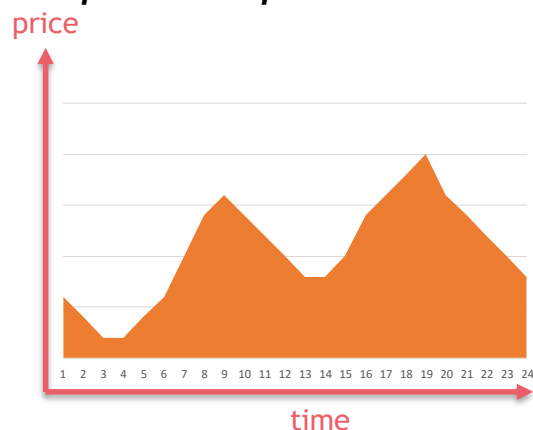


### variable tariffs e.g.

#### *two zones*



#### *spot-price-dependent*

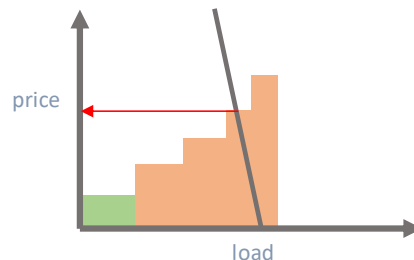
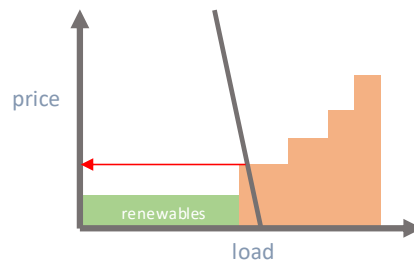


# The concept of variable Tariffs

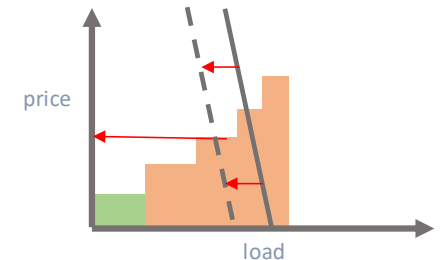
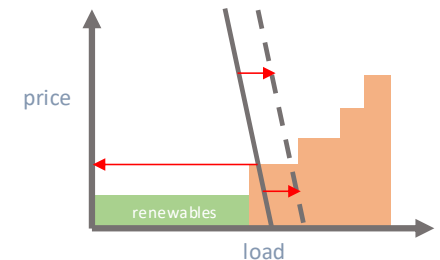
## Economic motivation to apply variable tariffs

- Incentivize system-beneficial consumer behaviour:
  - consume more power when there is much available
  - consume less power when power is scarce
  - Flexibilization of power demand
- Important for fluctuating renewable power integration
  - More fluctuation on the supply side requires more flexibility/elasticity on the demand side.

Inelastic demand:



elastic demand:





# Customer Survey on Variable Tariffs

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# Customer Survey on variable tariffs

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In March 2018 oekostrom conducted a survey on variable tariffs among their customers.

Customers addressed: 17.000  
Customers participating: 1.000

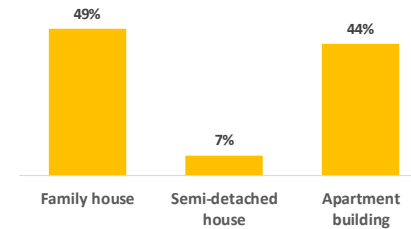
## Content:

- demographic data
- housing situation
- Knowledge and attitude toward smart meters & variable tariffs

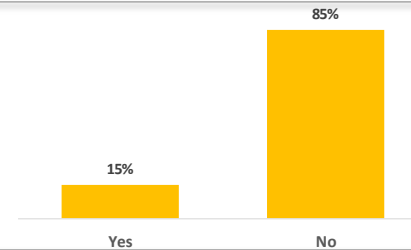
# Customer Survey on variable tariffs

## Selected results:

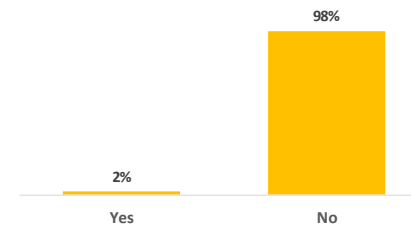
How do you live?



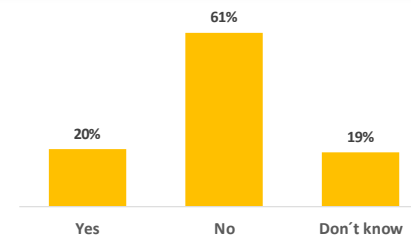
Do you operate a photovoltaic system at your primary residence?



Have you already installed a battery storage in your household?



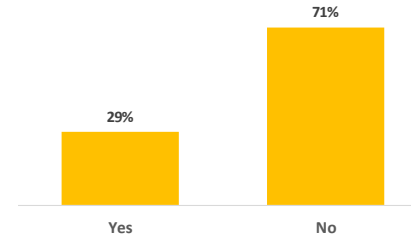
Has your primary residence already been equipped with a smart meter?



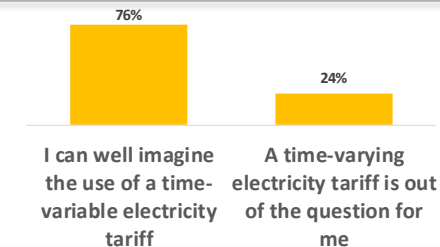
# Customer Survey on variable tariffs

## Selected results:

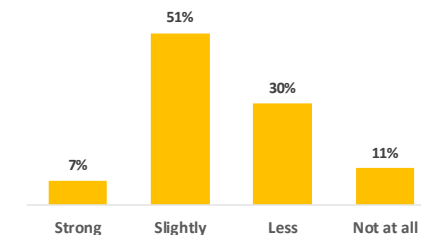
Have you dealt in the past with the topic of time-variable electricity tariffs?



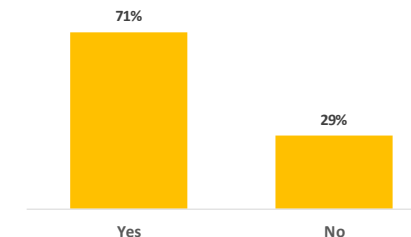
Regardless of the specific design of a time-varying electricity tariff, **which of the following statements is more applicable to you?**



Now that you've assessed some of the benefits and concerns of time-variable tariff, **do you think you could personally benefit from such a tariff?**



As soon as oekostrom AG puts a time-variable electricity tariff on the market, I would like to be informed of this with a separate letter.







# Variable Tarif Design & Implementation

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oekostrom developed a time variable tariff to be offered to all customers who have a smart meter available

## Tarif Design:

- Monthly basic charge
- Power pricing based on Austrian day-ahead spot prices ([www.exaa.at](http://www.exaa.at))
- Fixed fee on top of the power price
- Visualization of consumption and power prices in the customer portal.
- Monthly billing of actual consumption at the realized prizes

# Variable Tarif Design & Implementation

## oekostrom customer portal: customer number

facility number

tarif

monthly bill

## metering data section

DSO

meter number

power prices

load

# Variable Tarif Design & Implementation

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## Implementation Plan:

- **Preperation Phase:**
  - Setup of data exchange interface to the DSOs (*according to customer processes defined for the Austrian market*)
  - Setup of process to obtain the customers' declaration of consent for forwarding their consumption data from DSOs to the supplier (*EU General Data Protection Regulation*)
  - Adaptation of billing system for hourly & quarterly resolution of quantities and prices
  - Adaptation of customer portal to visualize power prices and load
- **Testing Phase:** up to 50 selected pilot customers
  - Testing of data exchange process with DSOs
  - Testing of declaration of consent process for data use
  - Testing of billing process
  - Customer feedback
- **Market Introduction**
  - Product launch

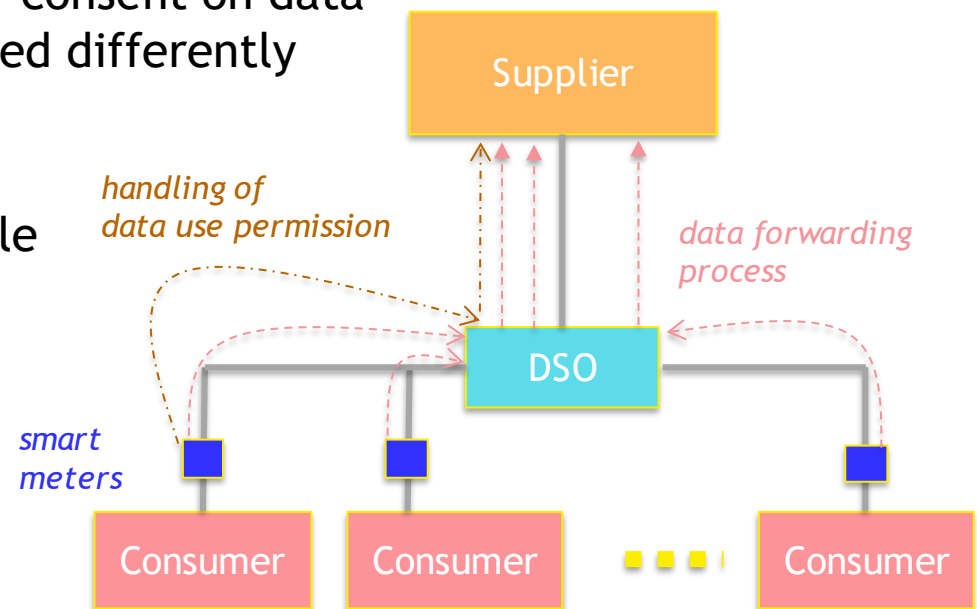


# Regulatory & Practical Barriers

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# Regulatory & Practical Barriers

- DSOs lack behind with their smart meter rollout
- DSOs lack behind with the implementation of the data interface and the data exchange process (defined in the “customer processes”).
- Process has to be established one by one with over a hundred DSOs in Austria
- No clear regulatory standard is defined how the customer declaration of consent on data use has to be handled (interpreted differently by each DSO)
- Currently automatization of customer processes is not feasible





# Summary & Outlook

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## Experiences:

- High interest for variable tariffs among customers
- Consumption data visualization creates awareness for power consumption

## Challenges:

- Unexpected changes in the regulatory framework conditions (smart meter roll-out schedule, EU General Data Protection Regulation)
- Slow smart meter roll-out is a major barrier to large scale application
- Data exchange with DSOs still to be established and standardized (metering data; customer declaration of consent for data use...)
- Data protection

## Outlook:

- Variable tariffs can lead to cost-savings for customers and suppliers
- Variable tariffs pave the way for further smart services and applications





Thank you for your attention!

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