



Organization for Security and Co-operation in Europe
Secretariat

EEF.NGO/2/19

28 January 2019

ENGLISH only

Conference Services

DISCLAIMER

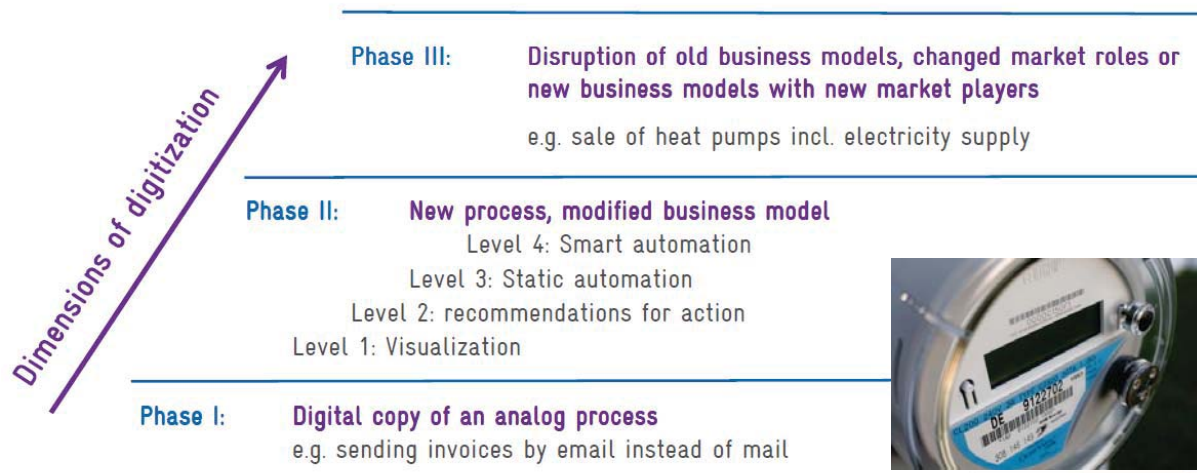
The OSCE Secretariat bears no responsibility for the content of this document and circulates it without altering its content. The distribution by OSCE Conference Services of this document is without prejudice to OSCE decisions, as set out in documents agreed by OSCE participating States.

Role of digitalization in the development of energy co-operation & integration of energy networks

27th OSCE Economic & Environmental Forum – 1st preparatory meeting

28 January 2019, Vienna

Smart Metering, Blockchain, Internet of Things, Big Data,
Artificial Intelligence, Robotics: Digitization changes all areas

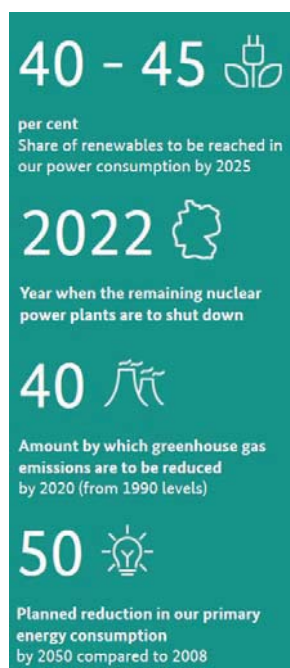


Pictures: pixabay

The Energy Transition Targets in Germany – Digitization helps manage the requirements, handle complexity and reduce costs

+ 65 % RES by 2030

+ Withdrawal of coal fired power plants by 2038?



Picture: BMWi

» NEW CHALLENGES

- Expansion of electricity generation from renewable energies (RES)
- Larger share of RES generation comes from decentralised installations
- Expansion of supra-regional transmission grids and of distribution networks
- Increasing the flexibility of energy demand (demand side management) as well as of conventional power plants
- Improving the balance between energy supply and demand
- Realizing energy efficiency potentials
- Introduction of Smart Meters

bne Association of Energy Market Innovators | 3 | OSCE E&EF Preparatory Meeting | 28 January 2019

German Act on the Digitization of the Energy Transition: New regulation for metering system operation & Smart Meter Rollout

- Issued in September 2016
- By 2032, consumers, local power generation and grid loads must be equipped with metering systems that meet certain minimum technical requirements > architecture for Smart Meter Gateways defined by BSI:



- Smart metering: Measured data can be sent automatically via a communication network and need not be read on site. This includes measured data from house connections, appliances, electric vehicles, and much more.

Picture: BSI (Federal Office for Information Security)

bne Association of Energy Market Innovators | 4 | OSCE E&EF Preparatory Meeting | 28 January 2019

Digitization provides INFORMATION which is essential to intensify the expansion of local energy production & storage



PV magazine: „Only just under 1/3 of ripple control works.“

Important to keep energy market free of distortions: The network operator indicates a need for reduction (asking for grid service), but must not switch itself.

- Today network operators don't have detailed informations about their grid users and there is a lack of real time data especially of
 - smaller solar installations, battery storages etc.
 - consumers (Germany: 50 million consumption points are measured only once a year)
 - larger loads such as e-vehicles and e-heating systems
- as far as used, ripple control allows only lump-sum reduction of renewable feed-in
- Smart meter gateway > detailed generation & consumption data and if necessary in real-time
 - better forecasts can reduce volume of interventions
 - realization of feed-in management could be measured
 - less waste of RES generation due to incorrectly valuated shutdowns

Picture: pixabay

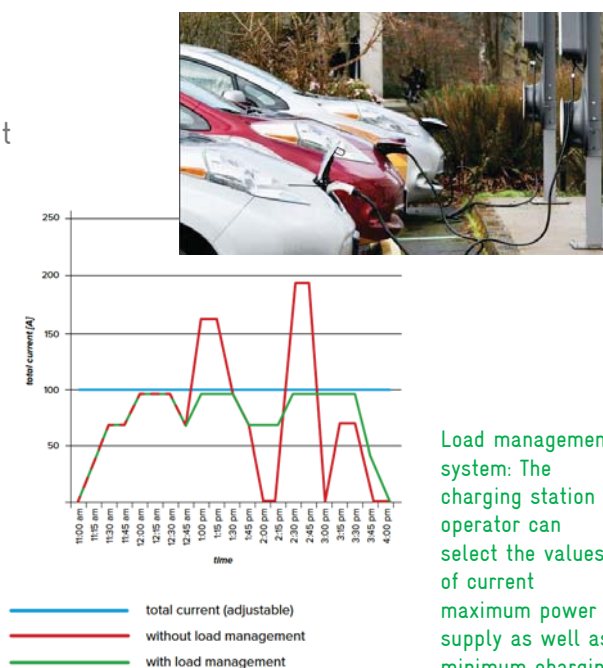
bne Association of Energy Market Innovators | 5 | OSCE E&EF Preparatory Meeting | 28 January 2019

- Avoid intervention in the market,

Digitization enables REACTION which is essential to integrate E-Mobility in electricity distribution networks

Charging of electric vehicles

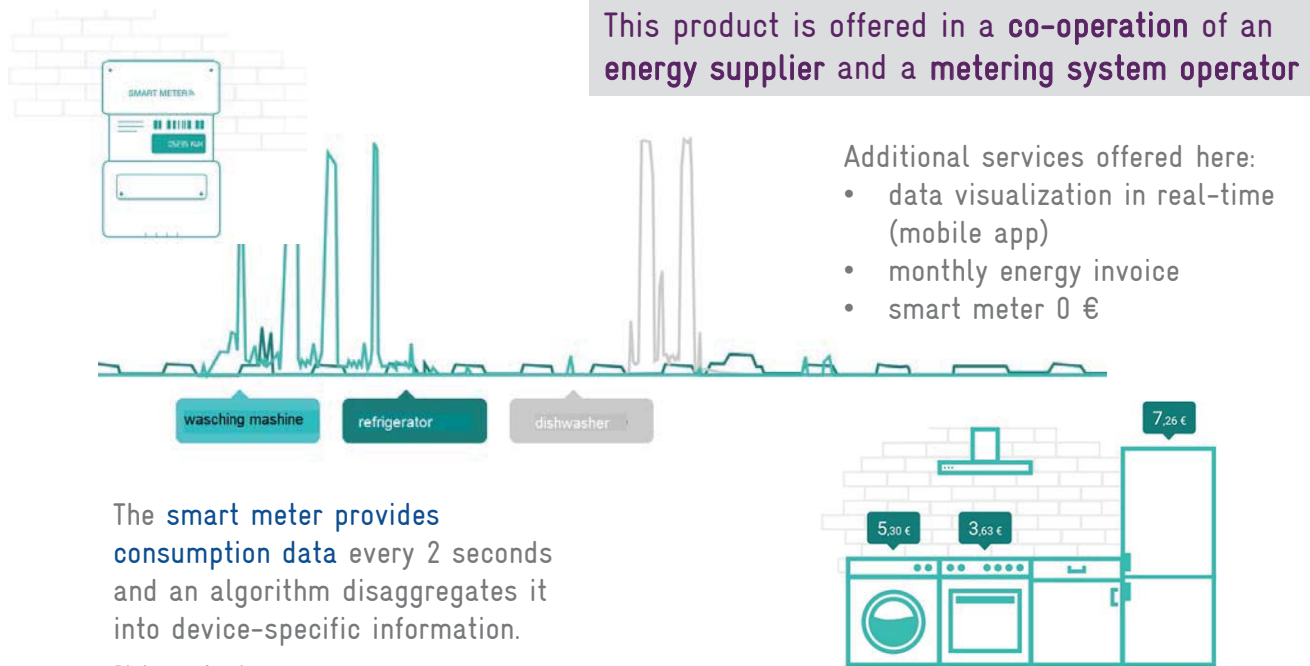
- No action > risking a supply interruption
- Integration > choosing between huge investment in the expansion of distribution network or manage upcoming congestions through using grid services like intelligent load management
- LOAD MANAGEMENT: Reduction of peak loads, load shifting to no critical network situations, incentivise demand side management or installation and usage of storage
- Smart Meter Gateway > Information hub for real-time data and execution of the requested network service



Pictures: Seattle DOT, www.chargeupyourday.com

bne Association of Energy Market Innovators | 6 | OSCE E&EF Preparatory Meeting | 28 January 2019

Digitization facilitates OPTIMISATION for consumers by reducing complexity, monitoring equipment and additional services



bne Association of Energy Market Innovators | 7 | OSCE E&EF Preparatory Meeting | 28 January 2019

bne

Do you have any questions?

Anne Köhler
Bundesverband Neue
Energiewirtschaft e. V.
Hackescher Markt 4
D-10178 Berlin

Telefon +49 30 400548-14
Telefax +49 30 400548-10
anne.koehler@bne-online.de
www.bne-online.de