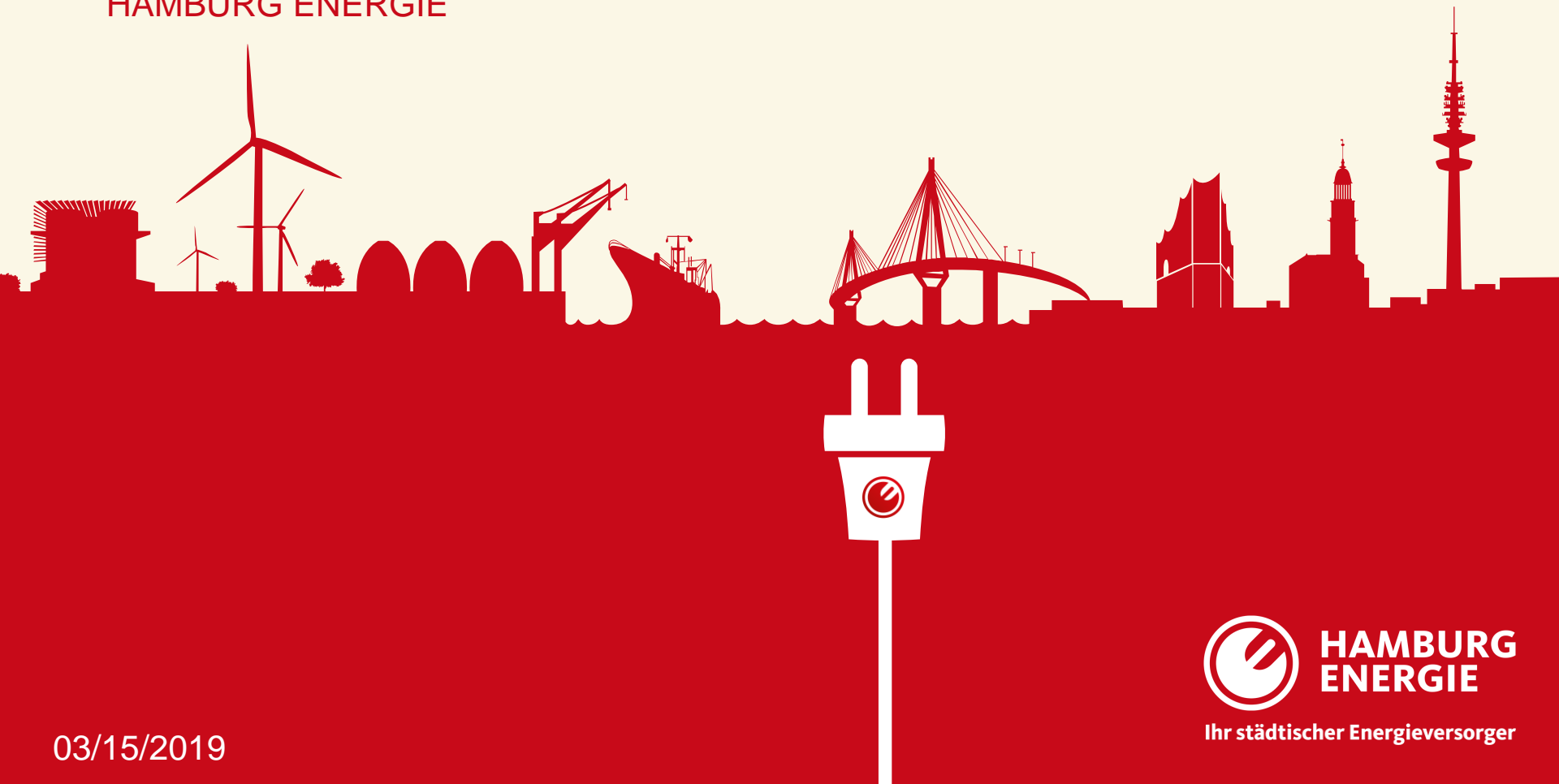


Die EnergiePlattform

A motivation for regional support of flexibility

Presentation by Kaja Juulsgaard

HAMBURG ENERGIE



03/15/2019



**HAMBURG
ENERGIE**

Ihr städtischer Energieversorger



AGENDA

1. VIRTUAL REAL
2. „DIE ENERGIEPLATTFORM“
3. ALL NEW

DIE ENERGIEPLATTFORM

A MOTIVATION FOR REGIONAL SUPPORT OF FLEXIBILITY

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HAMBURG ENERGIE (HE)

Municipal utility, our energy is free of coal and nuclear power,
builds and operates renewable energy generation plants
in the metropolitan area of Hamburg,
operates a virtual power plant,
research and development in sector of energy and software.

ME

Combine the technical and economic aspects of an energy system,
Smart Grid Engineer (M.Eng),
Link between energy and software,
renewable energy, be a part of the change



VIRTUAL REAL

VIRTUAL POWER PLANT (VPP)

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Virtual Power Plants are real!

Virtual Power Plants are a „technical form to organize“

VPP .. business = a Company, a (direct) Trader

VPP .. technical = a Software, a (superordinate) SCADA

BlockChain and **Virtual Power Plants** are both „**Software** Concepts“.

Virtual Power Plants are established, **can a BlockChain complete** them?

BLOCKCHAIN TECHNOLOGY (BC)

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Blockchain is not a „Solution for everything“!

Blockchain is just in certain applications useful.

Blockchain is **not Bitcoin** !

We are planning **no Crypto-Currency** !

We are not „permissionless“ !

Rather, we have **managed system**
for that a **consortium of equals is responsible** !



**LET'S CONTINUE TO THE
ENERGIEPLATTFORM**

ELECTRICITY MARKET DESIGN

Energy-Only-Market

Stock Market, OTC

System Service

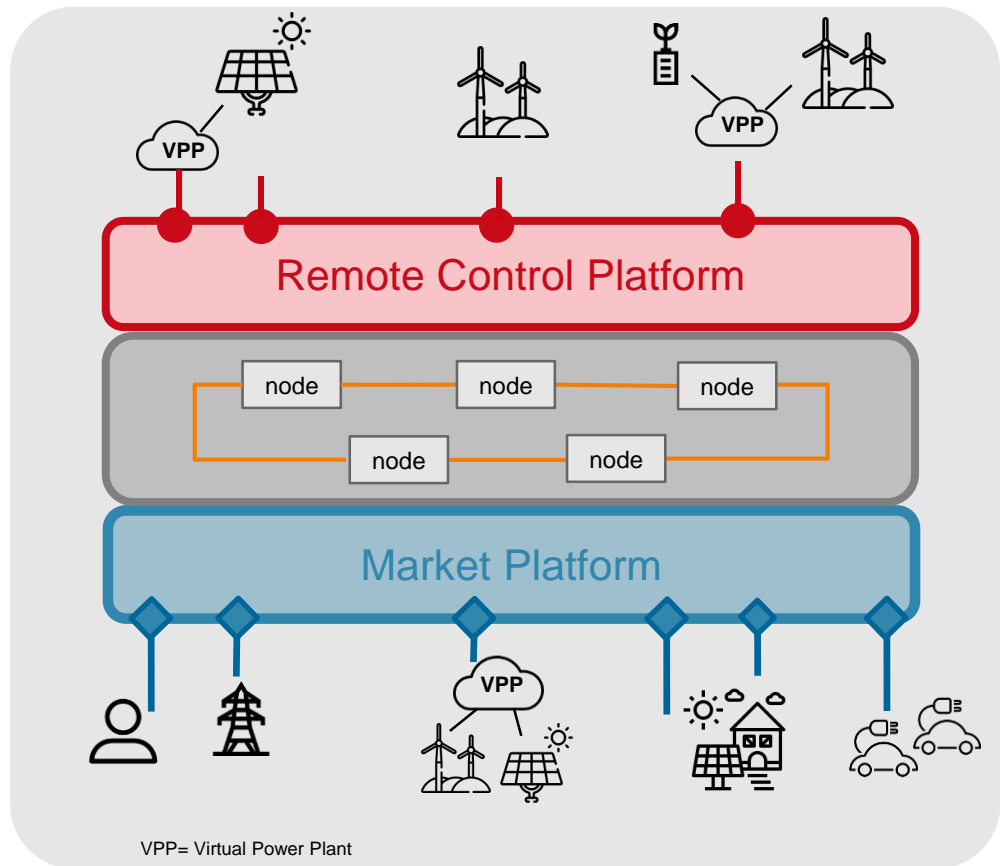
Control Energy, Reactive Power,
Black Start Capability,..

Intervention by Grid
Operator

Redispatch, Feed-in Management,..

Market-based platform with integrated **real-time control** of power plants for short-term trading and system service

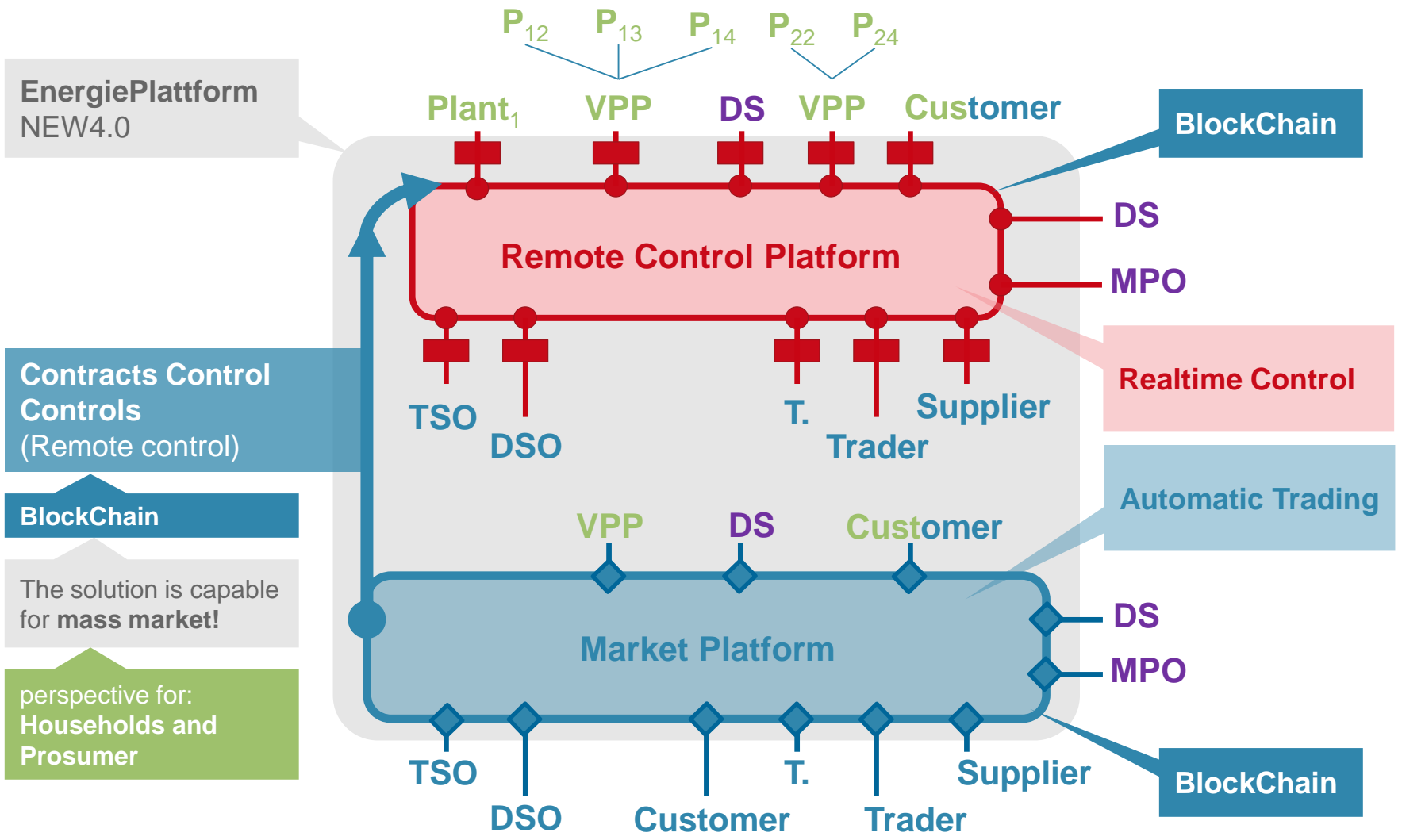
full automatic control systems in real time



Blockchain allows equal, transparent action

many different market participants

DIE ENERGIEPLATTFORM



EnergiePlattform
NEW4.0

Contracts Control
Controls
(Remote control)

Blockchain

The solution is capable
for mass market!

perspective for:
Households and
Prosumer

P = Power Plants, VPP= Virtual Power Plants, DS= Direct Seller, T = Trader

THE MAIN FEATURES OF THE ENERGIEPLATTFORM

Unite market and remote control:

- Automatic trading and automatic remote control
- **Universal platform**, suitable for different products and use cases
- (extremely) Short term IntraDay, 5 min. before delivery or „in the quarter of the delivery“ !

Absolute unique selling point (usp):

- Orders can be provided with „properties“ e.g. a geo position/ plant identification this allows „rule-based automatic contracts (trades)“ possible
- From the contracts, contract-based plant controls (remote control) can be carried out on the basis of the properties e.g. geo position/ plant identification

What gives the EnergiePlattform its special character?

- Direct connection of virtual power plants, aggregators and power plants

Equalled access for many different market participants

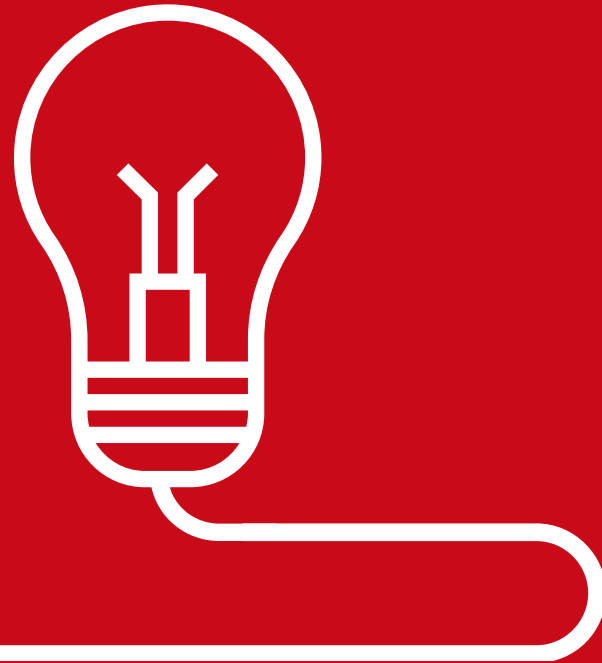
- Energy with properties (Labeling of zip code, nodes,..)

Support for decentralized and regional production and consumption

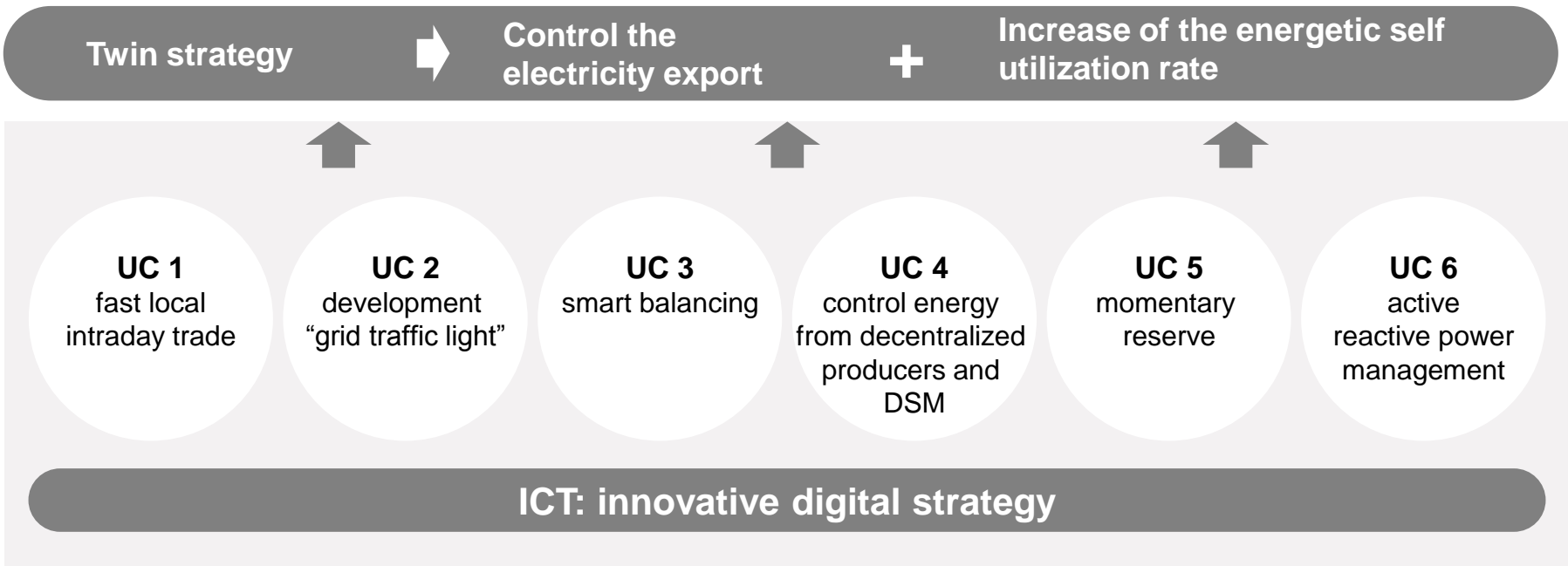
- Entire process based on Blockchain Technology

Power plants are automatically controlled based on contracts

ALL NEW



NEW 4.0 .. GOALS AND USE CASES



NEW4.0 IS A PART OF „SINTEG“

SINTEG .. „shop window for intelligent energy“ .. from BMWi
(Federal Ministry of Economics and Energy)

Gefördert durch:

Bundesministerium
für Wirtschaft
und Energie
aufgrund eines Beschlusses
des Deutschen Bundestages

c/sells

Designetz

enera

NEW4.0

WindNode

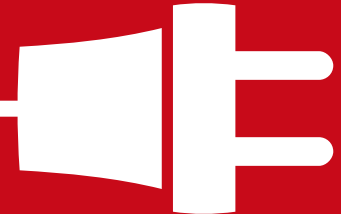
BlockChain .. is considered.. but only deployed
at the „EnergiePlattform“ in NEW4.0

an open and cross-project exchange! **Great!**



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You're curious? .. Let's do networking.

THANK YOU FOR YOUR ATTENTION

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You're curious? .. Let's do networking.

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