

Decentralised energy trading – first results of the Enerchain project

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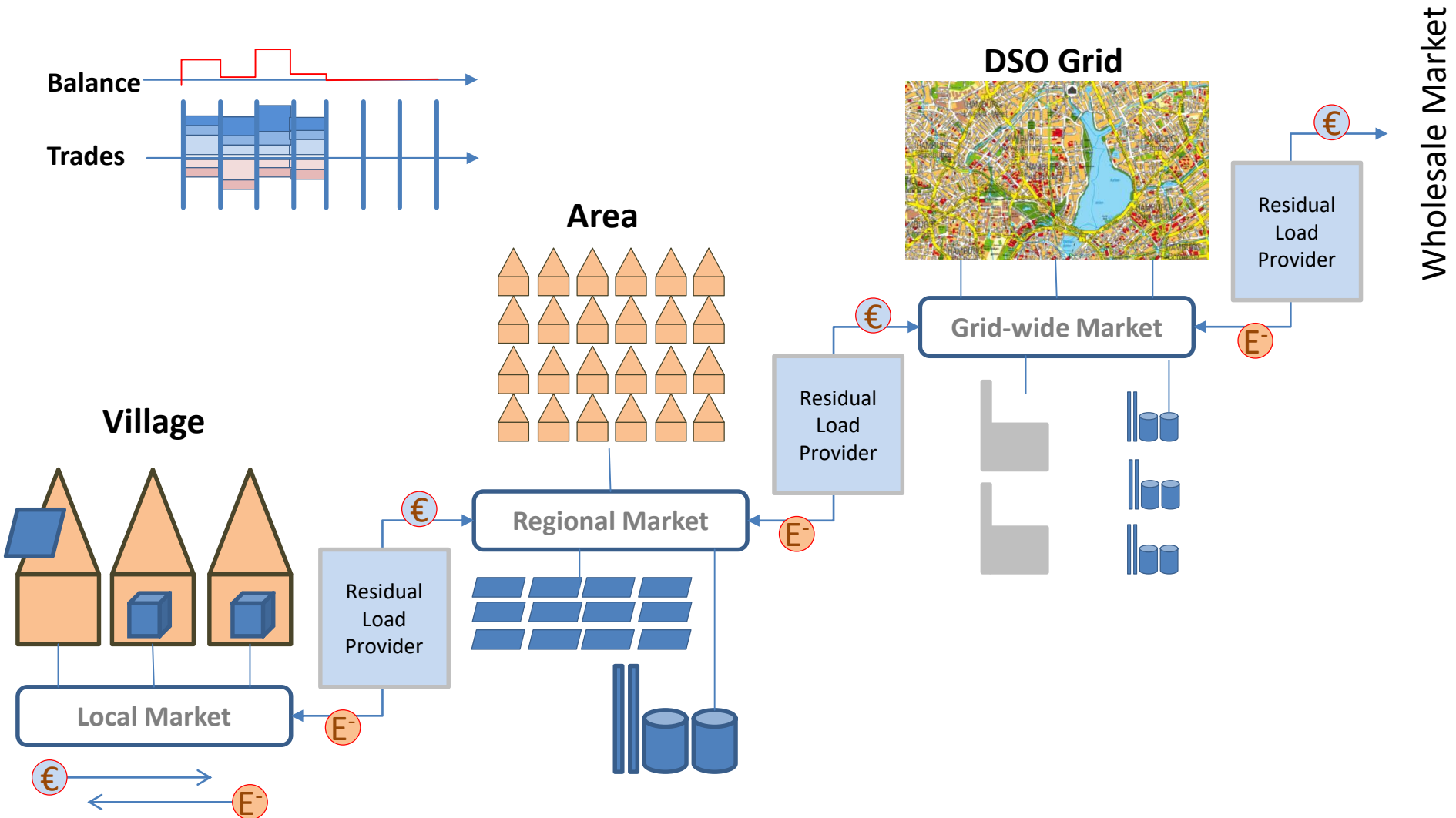


Energy Trading in the Context of „Energiewende“

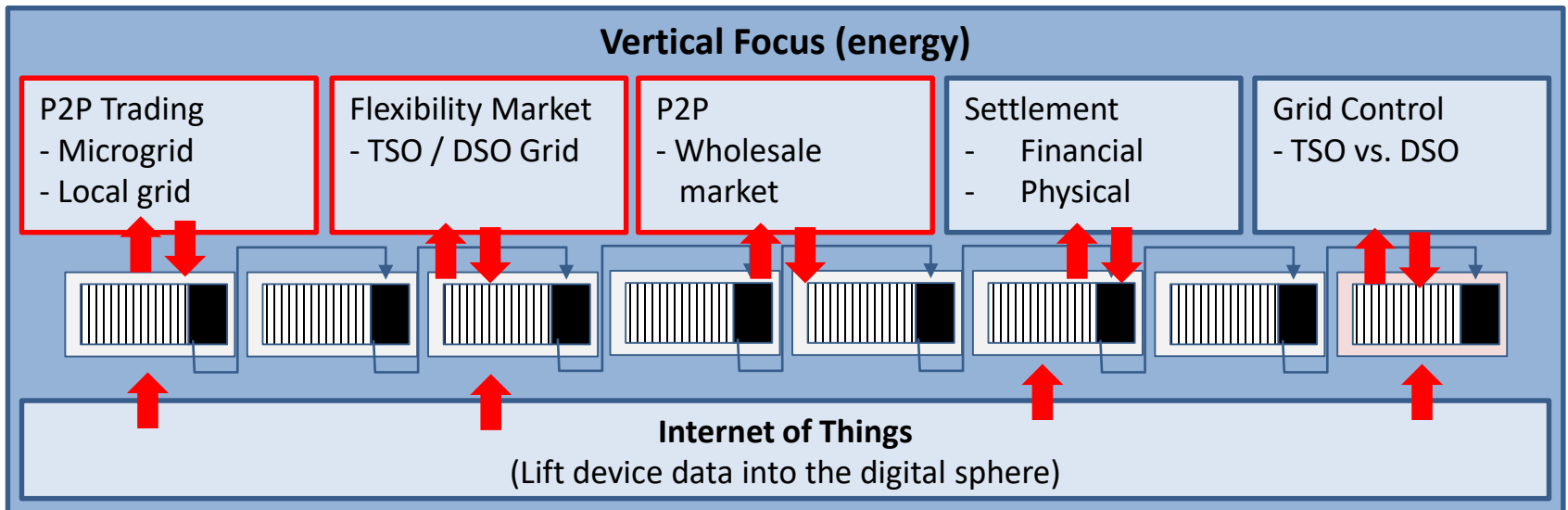
- Volatility and congestion drives physical flow of electricity
- Short-term balancing required at local grid level, distribution grids and transmission grids / control zones
 - P2P trading between prosumers and consumers
 - Demand-side / supply-side management driven by DSO
 - Local „Smart Markets“ for flex and local balancing
 - Tendency towards spot market and short-term trading on the wholesale market
- Trends:
 - Lower volumes per trade, lower CAPEX for renewables, lower price per MWh, smaller MPs, increasing cost (regulation!), market access & TA fees remain constant,
 - trading is a loss-maker...

➔ A radically new approach is needed!

Scenario 2030: Hierarchical Markets for the Balancing of local Grids



The „Blockchain & Energie“ Space

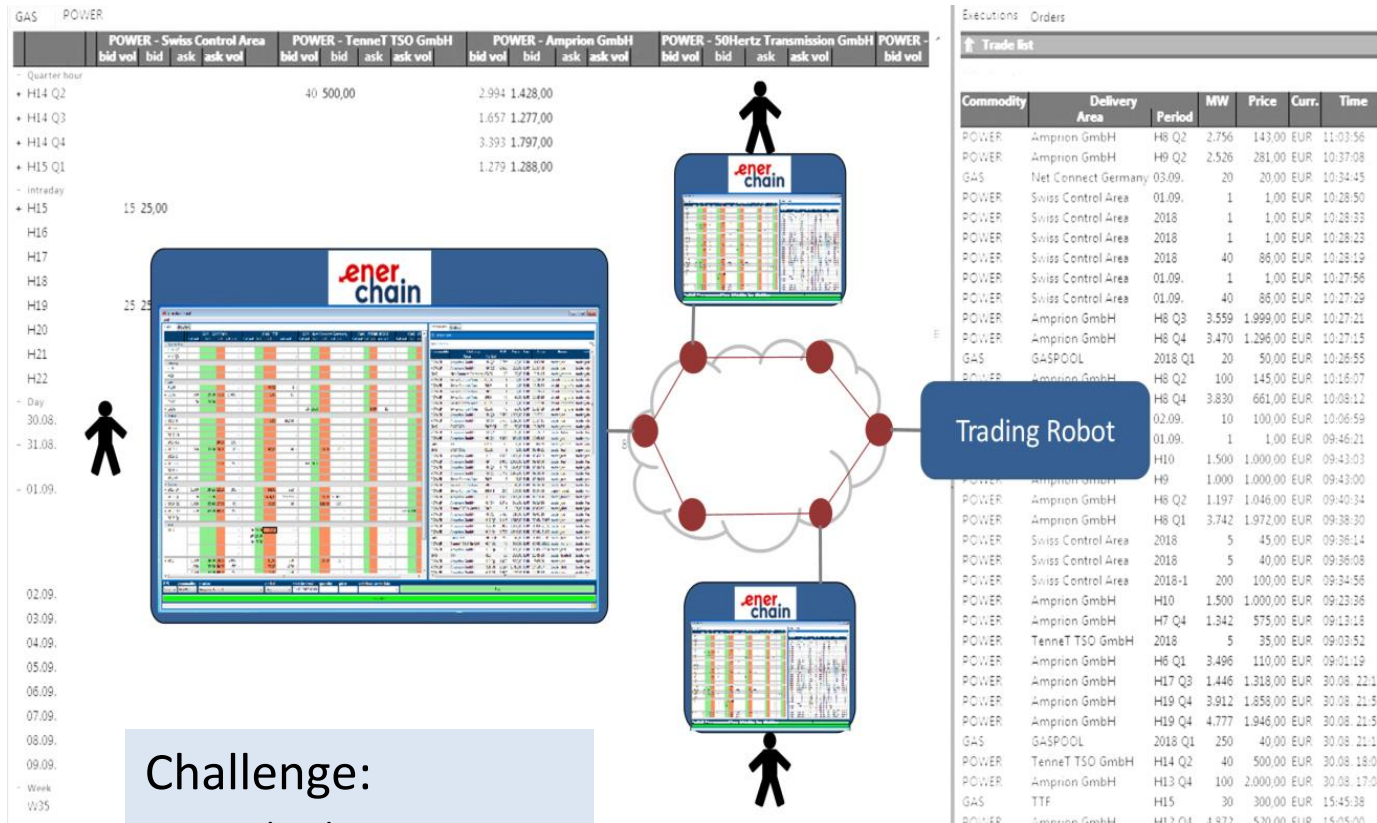


Horizontal Technical Features & Challenges

Access / Identity Management / Archive historic blocks
Load / Mass Data / Performance / Stability / Security / Privacy

Project Enerchain

4. Oct 2017: „The world’s first wholesale energy trade over the blockchain“

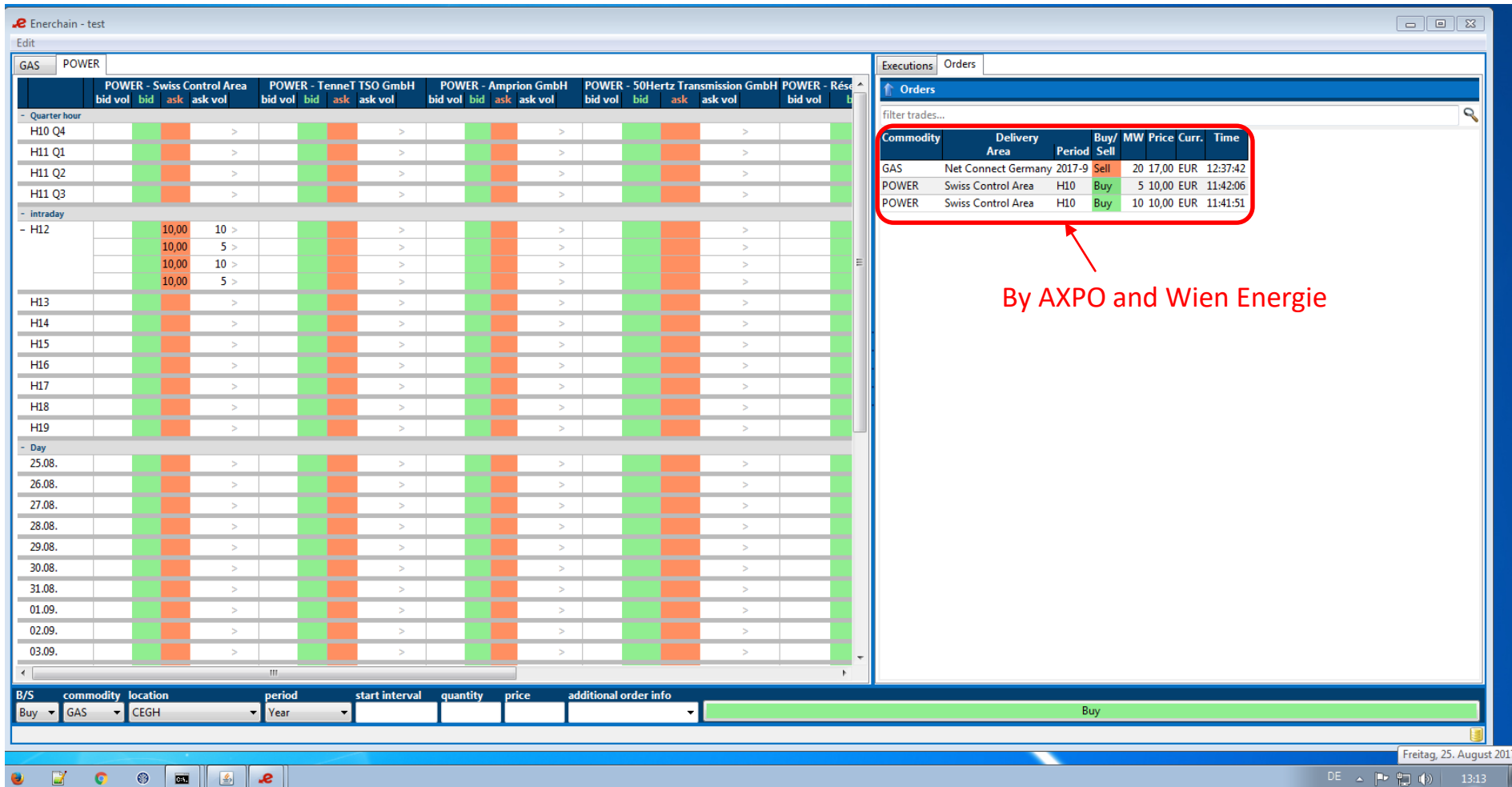


Challenge:

- Technology
- Legal / Regulation
- Governance

Our Brainchild was born on August 25th!

(the first test trade on Enerchain as of August 25, 2017)



The screenshot shows the Enerchain - test interface. The main window displays a bid-ask board for POWER - Swiss Control Area. The board is organized into columns for different delivery areas and periods. The 'Orders' window on the right shows a list of orders, with the first order highlighted in red.

Commodity	Delivery Area	Period	Buy/Sell	MW	Price	Curr.	Time
GAS	Net Connect Germany	2017-9	Sell	20	17,00	EUR	12:37:42
POWER	Swiss Control Area	H10	Buy	5	10,00	EUR	11:42:06
POWER	Swiss Control Area	H10	Buy	10	10,00	EUR	11:41:51

By AXPO and Wien Energie

How it all began...

- Early 2016: Book chapter, REMIT rollout deadline
- Summer 2016: development of demonstrator
- Winter: trading organisations interested in internal prototype
- February 2017: Workshop Berlin
- May 2017: Project start with 23 participants
- Today: 33 participants, live trade in AMS next week
- End of 2017: original end of PoC, to be extended until end of Q1/2018

➔ Right time to come onboard!

Project Enerchain

35 Participants (some logos hidden)

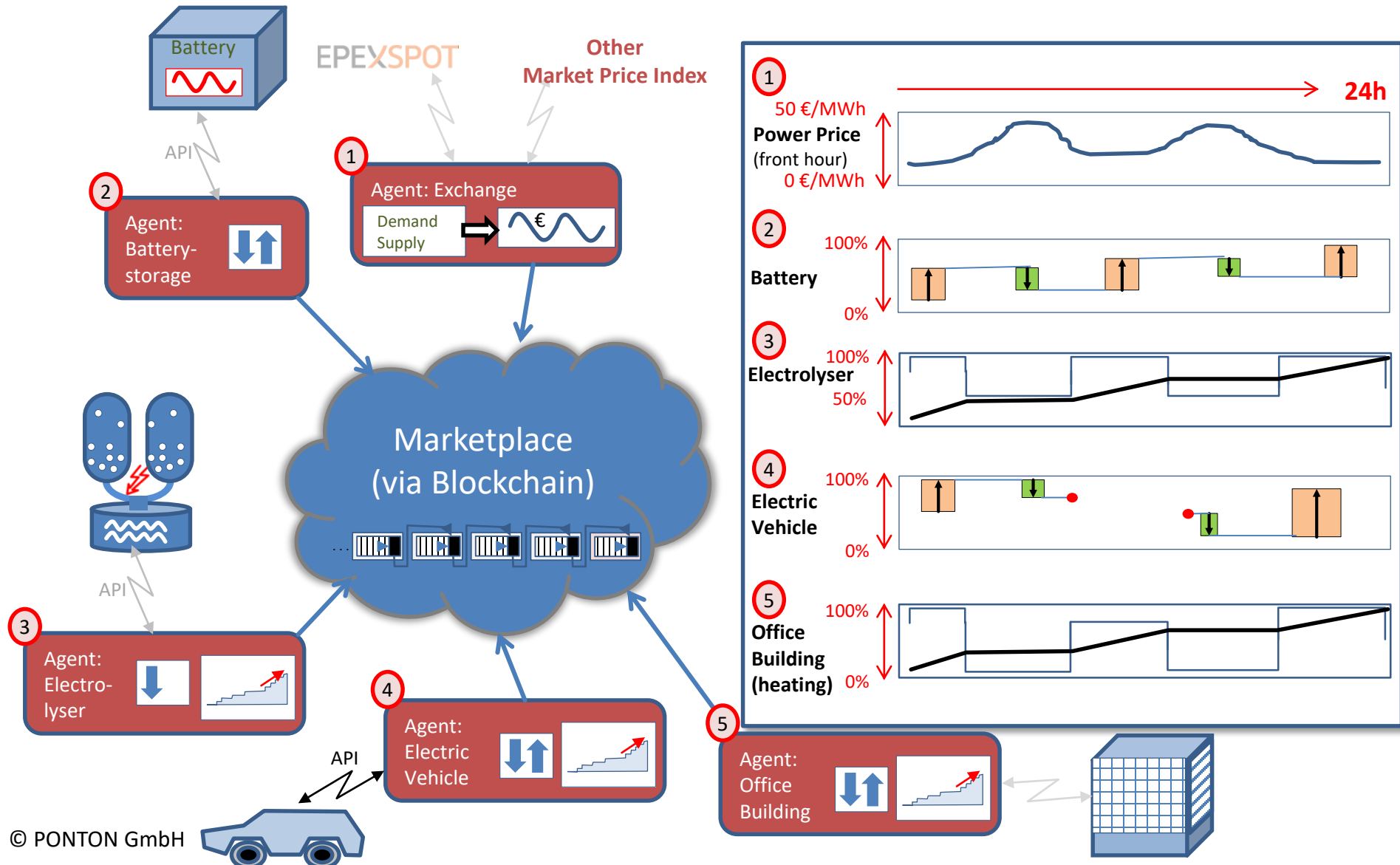


NEW 4.0 – „Norddeutsche Energiewende“



Region Hamburg/Schleswig Holstein, > 50% RES share, develop Smart Market for Flex.

Local Market for Flexibility based on Blockchain Technology



Where is the Business Case for Blockchain?

- High availability at reduced cost (organisationally & technically)
- Disintermediate
- Integrate token currency
- Allow for minimal transaction volumes through reduced transaction cost
- Directly link people to people / assets to assets
- Trustlessness
- Standardisation effect

„So, again, where is the business case in using
blockchain technology?“
It is the mix, stupid!

PONTON / Blockchain Hall of Fame

Find more information here: <http://enerchain.ponton.de>

https://m.youtube.com/watch?v=M_Sbim-5VoI

<http://www.ponton.de/downloads/enerchain/InDerFalleDesDemokratie.pdf>

Ijon Tichys 9. Reise

In der Falle des Demokratie

Cartena Cistae
In Memoriam Stanislaw Lem

Art von Prof. Tarantoga
Reise des Ijon Tichy war noch bis vor kurzem heftig umstritten, da eine Reise des Ijon Tichy war noch bis vor kurzem heftig umstritten, da eine Reise des Ijon Tichy war noch bis vor kurzem heftig umstritten, da eine

Potential of the Blockchain Technology in Energy Trading

Appears as a book chapter in: Daniel Burgwinkel et al.: "Blockchain technology Introduction for business and IT managers", de Gruyter, 2016
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Content

- 1.1 Prologue at the tennis club – August 10, 2030
- 1.2 Introduction
- 1.3 Value networks in B2B commerce
- 1.4 B2B networks in the energy trading sector
- 1.4.1 Classical B2B processes in the electricity market
- 1.4.2 Current and future developments on the electricity market
- 1.5 Applying the blockchain in energy trading
- 1.5.1 The blockchain in today's energy sector
- 1.5.2 Scenario 2020: Evolutionary application of blockchains
- 1.5.3 Disruptive application of blockchains
- 1.5.4 Disruptive application of blockchains
- 1.5.5 Disruptive application of blockchains
- 1.5.6 Disruptive application of blockchains
- 1.5.7 Disruptive application of blockchains
- 1.5.8 Disruptive application of blockchains
- 1.6 Final conclusion
- 1.7 The Energy Trading Prospects

References

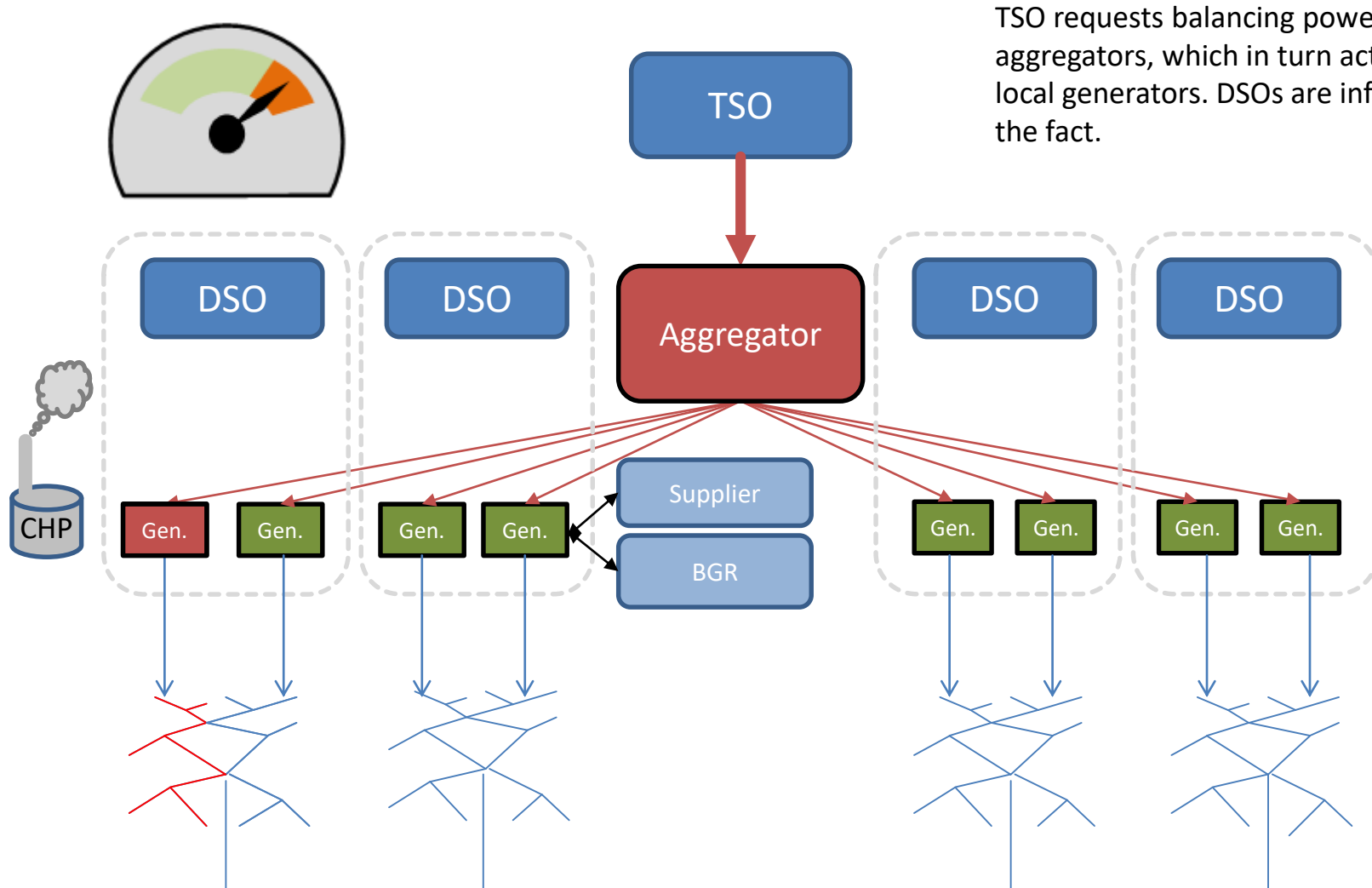


plus projects under NDA...

Thank you

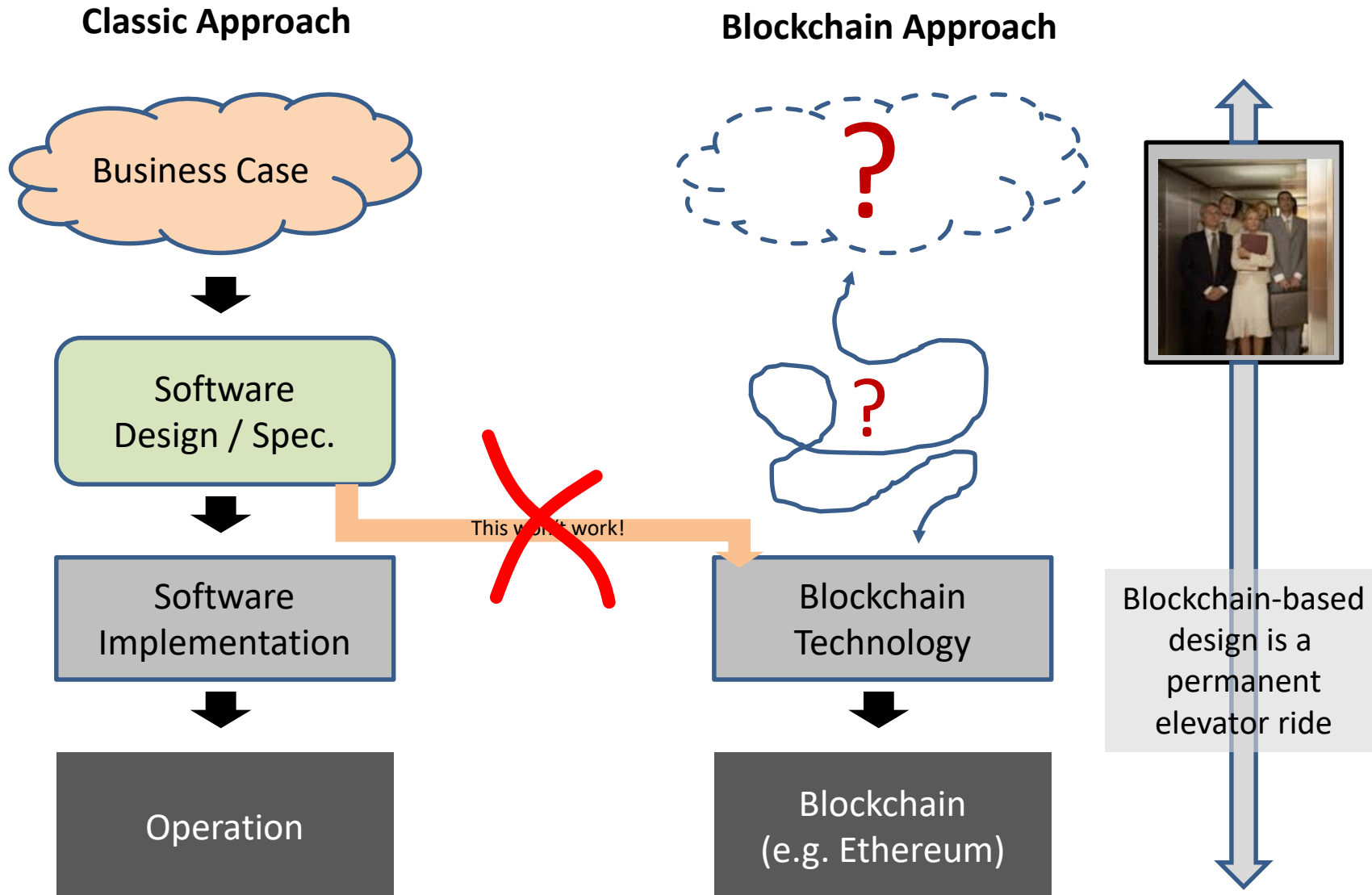
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GridChain – TSO / DSO Prozess-Synchronisation



TSO requests balancing power from aggregators, which in turn activate load at local generators. DSOs are informed after the fact.

Why is it so difficult to „Think Blockchain“?



Gartner Hype Cycle

Gartner Hype Cycle für technologische Innovationen

