

XTN Group

Consumers in the driving seat
Utilities and Petroleum
companies in the engine

XTN – Consumer Interoperability of the Energy Mix provided by the Utilities and Petroleum companies



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XTN - CONSUMER INTEROPERABILITY FROM THE ENERGY MIX PROVIDED BY THE UTILITIES AND PETROLEUM COMPANIES

"3rd Annual Energy Portfolio Optimization Electricity Price Forecasting" 5.-6. April 2017 in Dusseldorf

KODAK

Tipping point

- Utility credit ratings falling dramatically
- Negative prices
- The Economist "How to loose half a trillion EUROS

UTILITY- KODAK

How to avoid the Tipping point

- Consumer Choice and Interoperability which means
- Disrupting the existing Utility-to-Consumer Business Model
- to which you will need a **datahub**
- which also will solve the storage need
- **THIS IS A DISRUPTION**

“Driving forces” causing DISRUPTION in the Value Chain

- Priority for Renewables
- Digitalization from competitors
- Political agreements / COP21 Paris Summit
- New regulations / EU's 4 freedoms
- New market needs / *“Declaration of Coordination and Cooperation in the North Sea Energy Challenge - Hub for Renewable Power and Gas Production”*

NEW REGULATIONS

- Demand Side Management systems as decided by the EU Commission 5. november 2013
- Market Solution as decided by the EU Commissions recommendation of 22. january 2014 to the European Parliament.
- Unbundling Distribution from Production as decided by the EU Commissions 3. energy package
- Decoupling Ownership of Infrastructure from Ownership of Energy Content
- Decoupling Gas Prices from Oil Prices

NEW MARKET NEEDS

- Balancing Renewables in the Grid having priority when being produced
- Demand from the Developments of Smart Communities
- Dramatic reduction in Gas prices due to Shale Gas (US) being transported world wide as LNG
- Consumer concern with Climate Change/Environmental Impact
- Angry Consumers due to high prices caused by duties on certain energy forms - not having a choice of energy form.
- Proposed Capacity Markets: Sharply increase of consumer prices - backfire on inabel governments.

Hence, what is surfacing?

A complex space matrix

- Many activities from
- Many people
- Many institutions
- Many corporations

Who is the decision maker? –

Individual consumers: Criteria for buying energy

How then to Balance the "Grids"

XTN - Demand / Response

- **Storage (Batteries and Hot water)**
- **Utility and Petroleum products**
- **Hydrogen Fuel Cells**
- **Consumer choice from the Energy Mix**
- **Price**

SOLUTION - HOW?

Digitalization

Connecting everything with everything in real time in a complex space matrix focused on the consumer as decision maker

ie. empowering the consumers

ie. ENERGY REVOLUTION EUROPE

How??????

Datahub – The XTN Hub –

One of only 2 datahubs in the world today

Datahub – the Refinery of the Utilities providing Interoperability/Choice to the Consumers



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XTN - Interoperability

- Consumer Choice: ability to choose energy form from an energy mix which fits consumer's individual values and individual price preferences
- Energy mix: Electricity – Gas – Distant heating: even out peak loads
- Gas - separate commodity – separate infrastructure – balancing battery in the grid at household site
- Pipe gas – Shale gas/LNG – Hydrogen fuel cell at Household Site
- LNG - moveable source on the world market - highly competitive (US)
- Small Hydrogen fuel cell: 2016
- Hot Water at Household Site as balancing battery in addition to Gas
- **Causing Structural change:** XTN - Vertical integration from consumer to producer
- Price premiums from consumer values are transferred to XTNs producing co-owners providing an extra margin

The XTN system

Technology - IOT

- C2M – Apps
- M2M - Middle ware – **the XTN Datahub**
- M2C – Top ware Embedded solutions
- All Open and Proprietary Protocols

What's in it for the consumers/society

The Renewable low cost/low carbon society



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What's in it for the producers being XTN co-owners

Transferring the
Renewable price premium
to
XTN producing co-owners



What's in it for the retailers being XTN co-owners

More sales by increased
competitiveness by meeting
consumer values

What's in it for the Co-owners as shareholders in XTN



Producers, Retailers and
Investors as co-owners enjoying
X% profit of throughput of
increased sales and price

XTN - Game changer

- Consumers balancing Demand Response
 - with multiple Utility and Petroleum energy forms
- Managed by XTN given prices per energy form complying with consumer values

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