My Energy data, DataHubs and cross border data access

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ENERGINET

Public enterprise owned by the Danish Ministry of Energy, Utilities & Climate.

We own and operate the overall electricity and natural gas transmission system in Denmark.

This includes the Danish DataHub that holds all Danish electricity meter data.
WHAT’S IN IT FOR US?

• Only part of our goal of a green energy transition can be reached by investing in renewables
• An electricity system based on wind, solar and hydro is volatile
• Utilising data access to enable easy activation of demand response can offset this volatility

• GDPR compliance is also nice
THE ENERGY VALUE CHAIN IS TRANSFORMING

- Security of supply will be ensured, not just by infrastructure, but by managing the energy system as a digital platform
- The classical value chain will co-exist with an abundance of distributed, data driven services and applications
- Micro transactions of energy consumption and production will be an added layer to the existing market and infrastructure
WE RELY DATA DELEGATION TO ENABLE THIS DEVELOPMENT
Energinet launched its first data access portal in 2013 where consumers can access own consumption data.

In 2016 we launched our delegated access to data for third parties, based on a national digital signature.

Features API’s for machine to machine communication.

My Data Access 2.0 is going to be implemented in 2019.
OUR EXPERIENCE FROM 2 YEARS OF DELEGATED ACCESS TO ELECTRICITY DATA

- 140 commercial parties requesting consumers for access and downloading data via API

- Interest from corporate consumers is higher than that of private households

- Cumbersome delegation process and access to data delegation per datahub or country limits service availability
ENERGINET-ELERING PILOT:

Cross border data access
THE BUSINESS CASE OF CROSS BORDER

It takes more than just access to enable the utilisation of data

• Customers don’t ask for data access, they want services that help them reduce their carbon footprint and save money on their energy bill

• Commercial actors utilising data to help customers is not defined by geography, but by the service they provide

• To enable these services we need to:
  1: Reduce transaction costs and
  2: Enable large amounts of transactions

This is why we collaborate on cross border data access, delegation and identity management in a European rather than national context enabling access to 415 million citizens rather than 7 million.
WE BUILD A PROTO TYPE BASED ON SOVRIN AND OAUTH2.0

Estonian data in a Danish application

Danish data in an Estonian application
IT WORKS! ALMOST!

What worked:
• We designed a cross border architecture based on the distributed ledger, Sovrin to enable identification and used OAuth2.0 for data exchange.
• We built a prototype, proving the design

What needs doing:
• Sovrin setup could work, but need further development to support continuous data delegation
• Trust framework and data exchange between platforms
• Support from other TSO’s and DSO’s to open access to data across borders
WHAT WE ARE TRYING TO ACHIEVE

The case in a customer perspective
WHAT WE ARE TRYING TO ACHIEVE

An enterprise architecture is too cumbersome. Hence we are looking for a distributed ledger approach. Sovrin almost covers the full process, but has it’s limits.

Piggybagged Authz (user) Proof?

Claim ‘piggybagging’ is not defined in any claim exchange mechanisms (Sovrin, W3C) - except Delegated Authority VC idea by Stephen Curran.

Why? In order to convey Alice’s read access delegation within the ‘Authz Claim’ towards a service endpoint (at Elering, see next slide).