Energinet

My Energy data, cross border data access and IOT

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ENERGINET

Public enterprise under 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

We are charged with facilitating the green energy transition in Denmark

THE GOAL IS:

- Minimum 55 % renewable energy by 2030
- A climate-neutral society no later than 2050

Market

Competition & efficiency

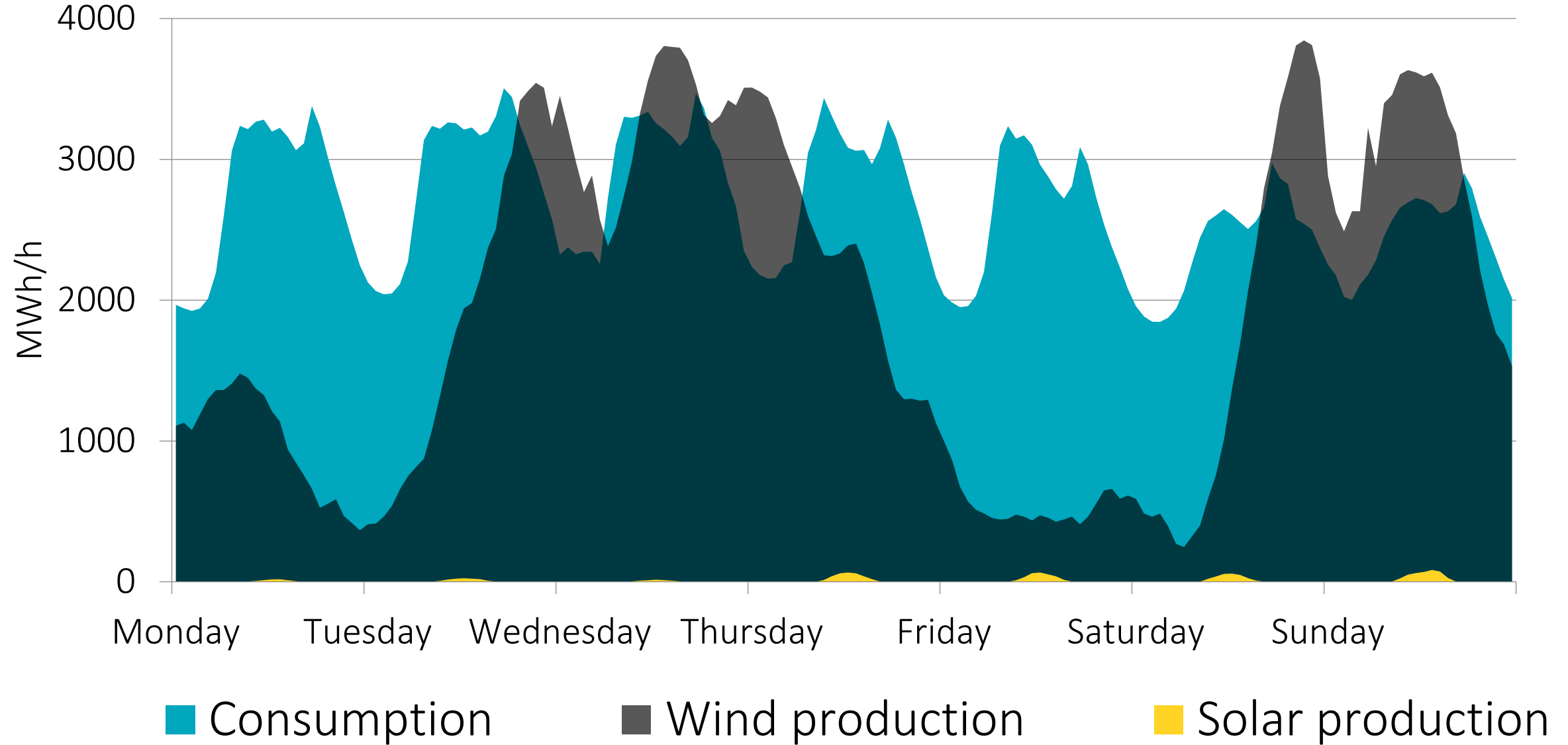Quality in the system operation

2017

2050

Bio
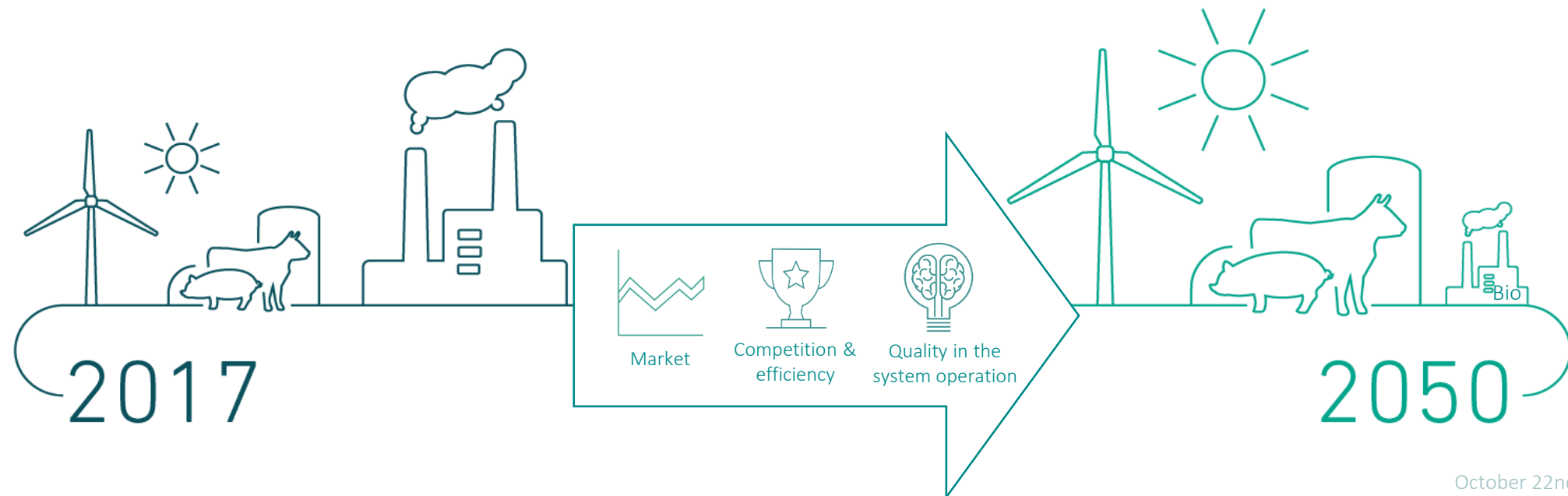
TODAY: WE HAVE REACHED THE FIRST 45 % ELECTRICITY BY

- Investing in wind power assets

- Connecting our grids with neighbour countries

- Liberalizing the electricity market

CONSUMPTION VERSUS WIND PRODUCTION

MWh/h

4000

3000

2000

1000

0

Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

■ Consumption   ■ Wind production   ■ Solar production

TOMORROW

We need to create a digitized, green ecosystem.

connecting the classical value chain and european energy markets with new technology and services.
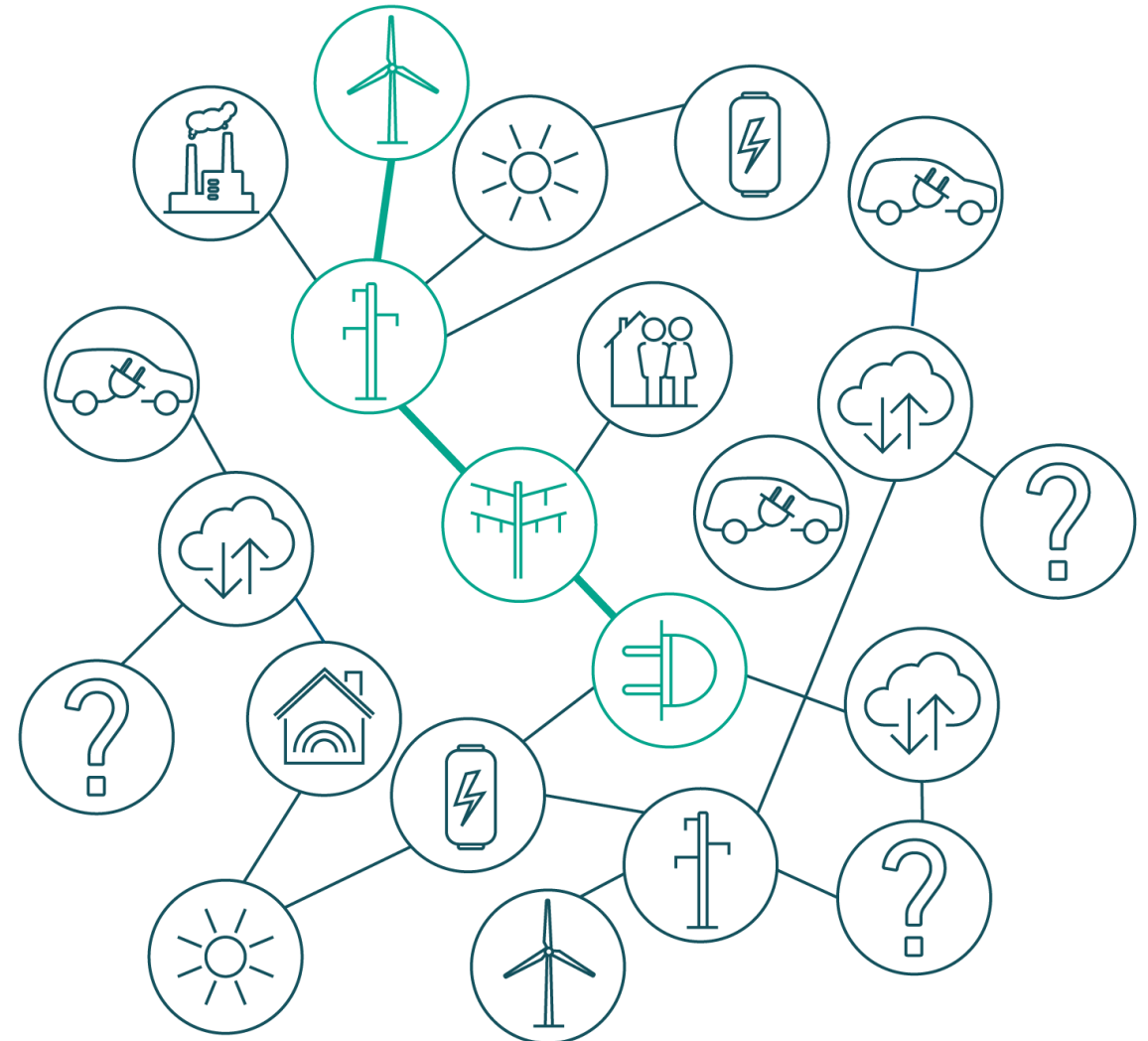
MY DATA ACCESS
ELOVERBLIK

We started with customer access to DataHub data...

- Energinet launced 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, bases 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
And distributed ledgers

THE BUSINESS CASE OF CROSS BORDER

Customers don't ask for data access, nor do they ask for blockchains. They want services that help them reduce their carbon footprint and save money on their energy bill.

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

To enable these services we need to:

1: Reduce transaction costs and
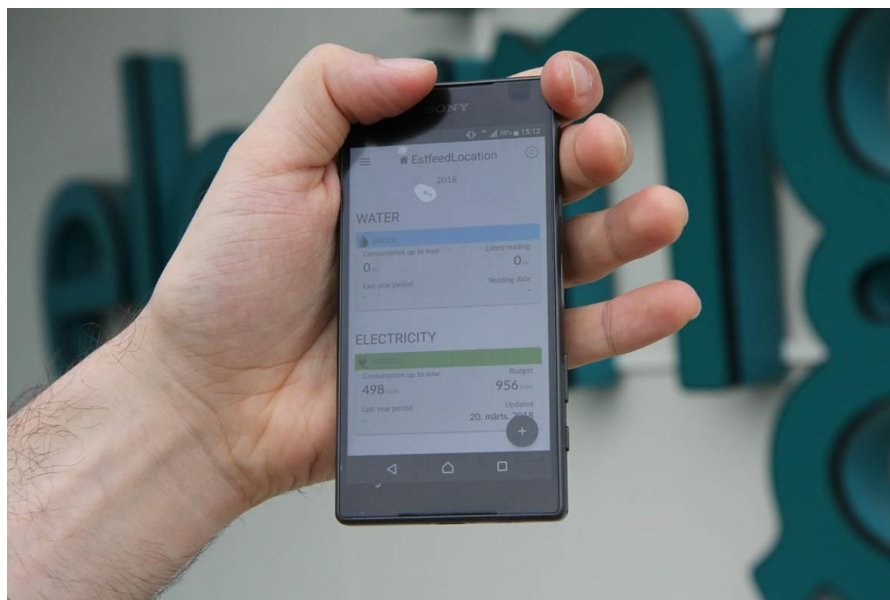
2: Enable large amounts of transactions

Collaborate on cross border data access in a European rather than national context enables access to up to 415 million citizens rather than 6 million.
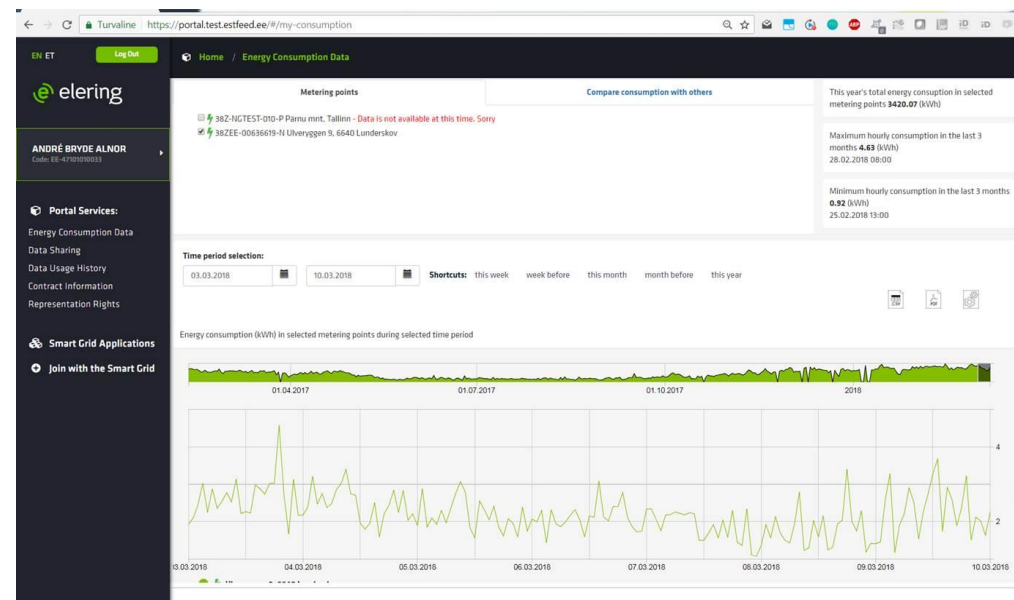
WHAT WE ARE TRYING TO ACHIEVE

WE DESIGNED A PROOF OF CONCEPT SYSTEM

Estonian data in a Danish application

Danish data in an Estonian application

IT WORKS!

- We designed a cross border architecture based on the distributed ledger (DLT) Sovrin to enable delegation and used OAuth2.0 for data exchange.

- We built a prototype, proving the design.

ALMOST!

- Sovrin DLT setup could work, but need further development to support delegation to continuous data streams.

- A trust framework and data exchange between platforms needs to be established

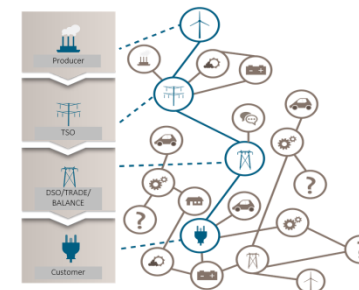- Support from other TSO's and DSO's to open access to data across borders

NOW EXTEND THE PICTURE TO IOT

Distributed ledgers connects ID/consent framework as enabler for onboarding IOT devices and their digital twins to ecosystem

Owner decides

Wallet holds ID and consents

OUR QUESTIONS ON IOT AND DLT ARE THESE

Can we leverage distributed ledgers (DLT) and IOT for enabling explicit flexibility in the electricity system?

We spend 96 million € per year on ancillary services from power plants, wind mills and interconnectors. Can we open these market for IOT devices?

How do we fit market and technical regulation to enable and encourage this?

Do we have the market products needed to incentivize IOT device developers and owners to join the energy markets?

Do we have both the know how and technology to ensure cyber security in IOT?