



Vaasa EnergyWeek 2019
Future Grid-seminar, 20th March
Pasi Aho, Fingrid Datahub Oy

Datahub in accelerating energy platform economy

FINGRID
Datahub



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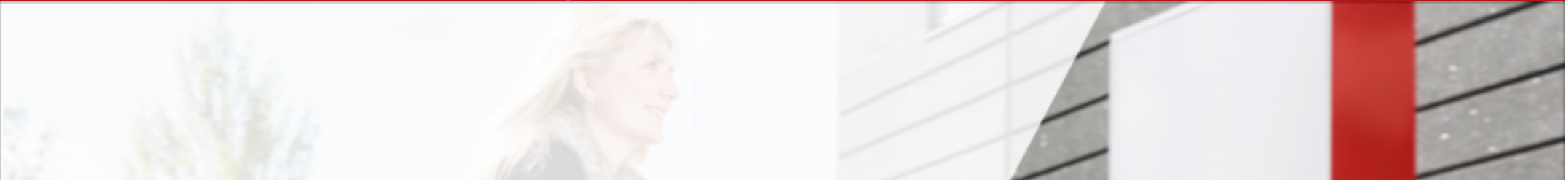
www.fingrid.fi
www.ediel.fi/datahub


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Datahub

Content of this presentation

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- Fingrid briefly
- Fingrid Datahub Oy
- Finnish electricity retail market
- Different platforms
- What is Datahub? – quick overview
- Datahub as a platform
- Project status



A woman with blonde hair, wearing a dark jacket and red pants, is riding a red bicycle. She is smiling and looking to the right. The background shows a modern building with a large white sign that says "FINGRID" in red letters. The scene is outdoors with greenery and a clear sky.

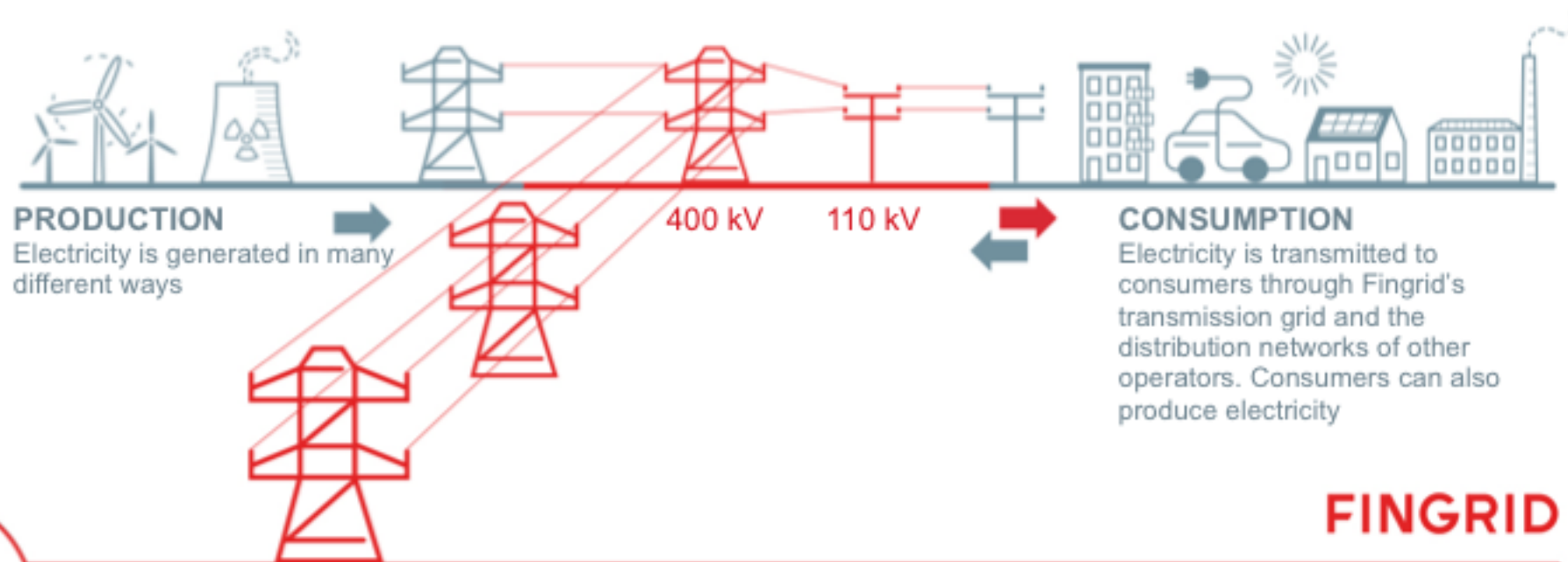
Fingrid is Finland's transmission system operator. We secure reliable electricity for our customers and society and we shape clean, market-oriented power system of the future.

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Fingrid's role in the electricity system



Fingrid's role in the electricity system



Transmission connections to Sweden, Estonia, Russia and Norway



Electricity transmission



Balance services



Guarantee-of-origin certificate



Electricity market information



Information exchange in the retail markets

Numbers

87% of our customers recommend our way of working

CHARGE
AWARDS 2018

Great Place To Work.

Suomen parhaat työpaikat

Finland

2018

Numbers

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CHARGE
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työpaikat

Finland

2018



14 300
KILOMETRES OF POWERLINES

EMPLOYEES



380

TURNOVER

€ **853** MILLION



AMONGST THE BEST IN THE WORLD IN
EFFECTIVENESS OF MAINTENANCE
MANAGEMENT AND RELIABILITY OF GRID.
SOURCE: ITOMS (INTERNATIONAL
TRANSMISSION OPERATIONS &
MAINTENANCE STUDY)

GREAT PLACE TO WORK

10th IN 2017

TRANSMISSION RELIABILITY ON THE GRID



99,9999 %



114 SUBSTATIONS

BALANCE SHEET TOTAL

€ **2,1** BILLION

TAXES PAID 2018

€ **45** MILLION

68,6 TWh

OF ELECTRICITY WAS TRANSMITTED ON
FINGRID'S GRID IN 2018, REPRESENTING

75,5 %

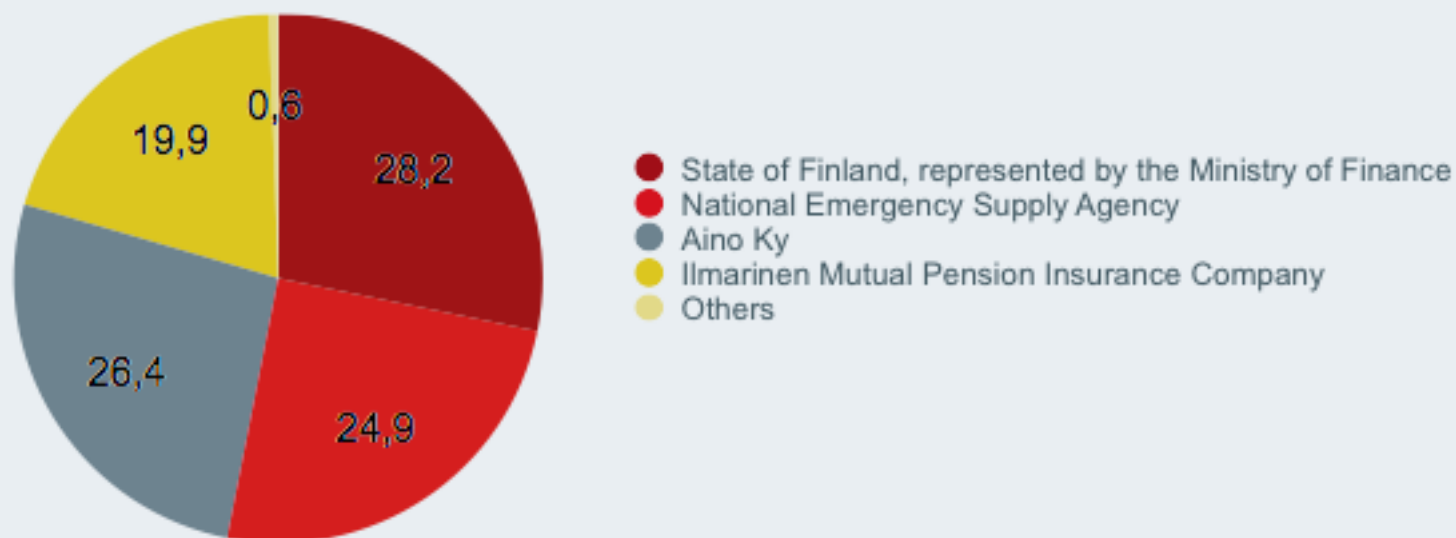
OF THE TOTAL TRANSMISSION
VOLUME IN FINLAND



FINGRID

Owners

Owners



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FINGRID

Datahub

- Fingrid Datahub Oy is a fully-owned subsidiary of Fingrid Oyj
- Established to take care of the datahub activities in Finland
- Company's main tasks are to provide and develop the centralized information exchange system and its other services, and administer the registered information for electricity market needs.

- In June 2018, CGI Suomi chosen as the datahub system provider
- The targeted go-live for the Finnish datahub is April 2021

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Overview of the Finnish retail market

- Total electricity consumption 85 TWh
- Residential, agricultural, service and construction sectors formed 50 % of the final consumption
- Finland's electricity market was gradually opened in 1995 (new law).
- Since late 1998, all electricity users, including private households, have been able to choose their

OVERVIEW OF THE FINNISH LOCAL MARKET

- Total electricity consumption 85 TWh
- Residential, agricultural, service and construction sectors formed 50 % of the final consumption
- Finland's electricity market was gradually opened in 1995 (new law).
- Since late 1998, all electricity users, including private households, have been able to choose their preferred electricity retailer.



77 DSO



Number of metering points
~ 3,6 million
Status of automated meter reading
~ 100%



~ 100 electricity retailers
(active retailers ~70)

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Switching rate
11,4%

Most common contract
types:
55% Variable price
37% Fixed price
8% Spot price

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Consumers can practice small-scale electricity production and sell the energy on the market => households are becoming active players in the electricity market



Separate contracts for electricity distribution services and electric energy.
(Except in case where the supplier has a delivery obligation i.e. "local supplier".)

Voluntary combined billing

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Electricity is traded in various timeframes

Financial products

Physical products

Delivery

Financial products

Futures/ Forwards/
Options

Physical products

DAY-AHEAD

INTRA-DAY

Delivery

Balancing
energy

Imbalance
energy

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Electricity market – a network of trading platforms

EUROPEAN
DAY-AHEAD
COUPLING

BALANCING
PLATFORMS

DATAHUBS

EUROPEAN
DAY-AHEAD
COUPLING
since 2014

BALANCING
PLATFORMS
go-live 2020-2022

DATAHUBS
FOR
RETAIL
MARKET
in use and under
development

EUROPEAN
INTRADAY
PLATFORM
since 2018

LOCAL
FLEXIBILITY
PLATFORMS
piloted
and developed

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**Towards a cost-
efficient, secure and
clean electricity
system**



clean electricity system



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Electricity retail market information exchange



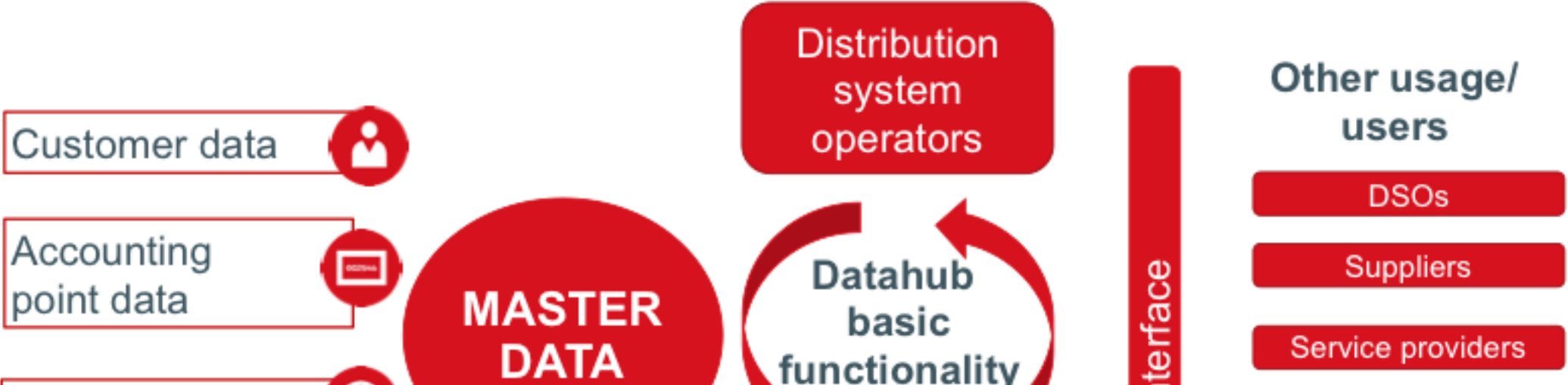


Video





Datahub, digital platform of the retail market



Accounting
point data



Meter values



Contract data



**MASTER
DATA**

**Datahub
basic
functionality**

**Electricity retail
suppliers**

Interface

DSOs

Suppliers

Service providers

Mobile apps

**Researchers,
students...**

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Enabling new services

Flexibility etc.
accounting
points data

Electric
vehicles

Energy
communities

...?

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Prosumers

accounting
points data

FINGRID



Prosumers

Aggregators

Storages

Analytics

Datahub 2.0?...

Multi-energy
data

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Security is at the core of datahub



- Data privacy
- Information and cyber security



they will be developed
and audited during the
building of the datahub



they will be developed and audited during the building of the datahub and ensured during its operation

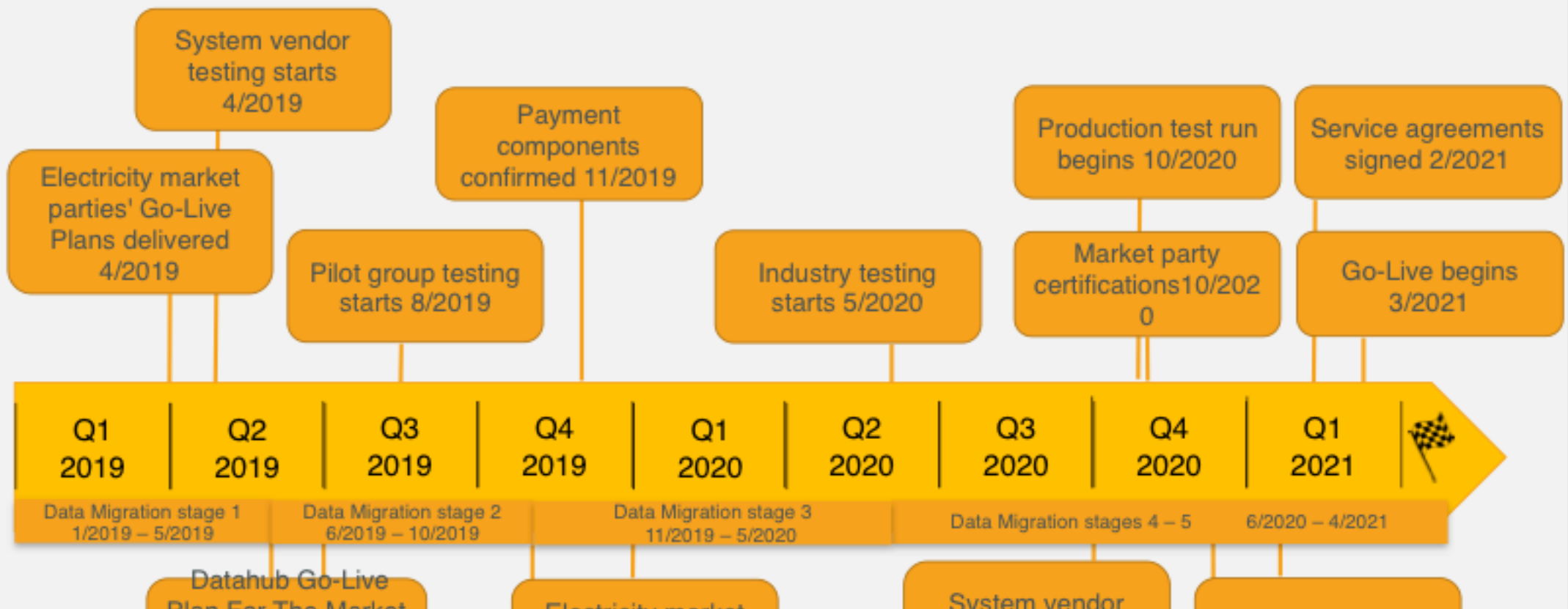
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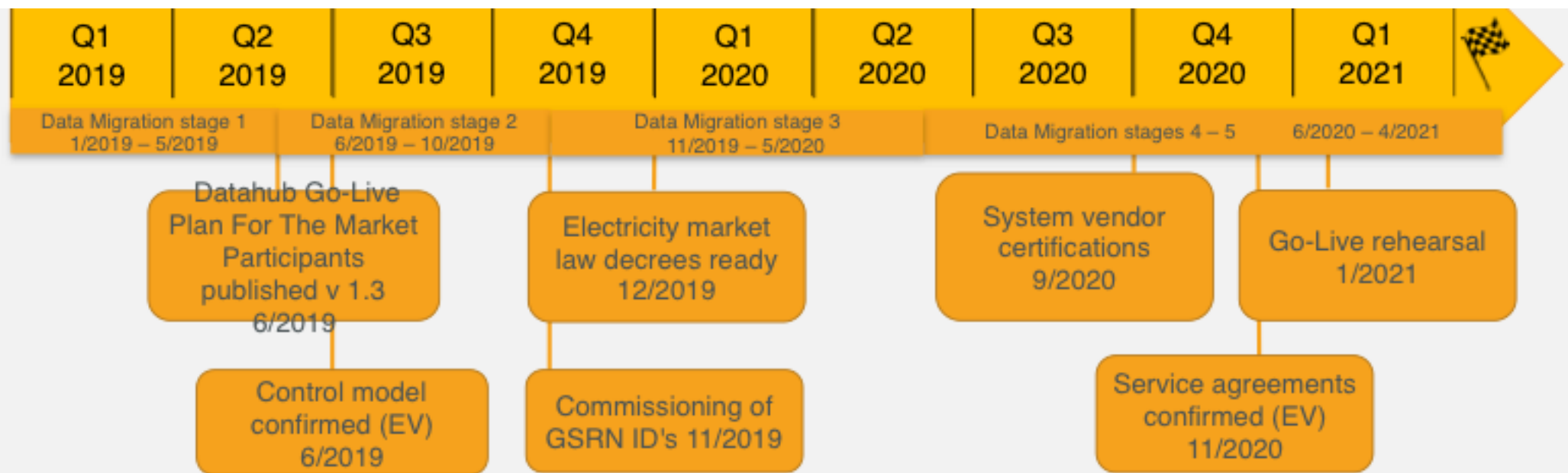
Datahub project status today

- Electricity Market Law was implemented 1st February 2019
- Datahub IT-project ongoing together with CGI
 - System development are on schedule
 - System vendor testing will start 1st April 2019
- Data Migration stage 1 is running
 - all DSOs and almost all supplier are involved
- Datahub Go-Live Plan For The Market Participants v 1.3 on spring 2019
- Electricity market parties' Go-Live Plans to regulator and Fingrid Datahub on end of April



- Data Migration stage 1 is running
 - all DSOs and almost all supplier are involved
- Datahub Go-Live Plan For The Market Participants v 1.3 on spring 2019
- Electricity market parties' Go-Live Plans to regulator and Fingrid Datahub on end of April 2019
- Lot's of communication activities all a time!





More information

- <http://www.fingrid.fi/en/customers/datahub/Pages/default.aspx>
- <https://www.ediel.fi/en/datahub>



Thank You!



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