

FORTUM – Join the Change

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Musiikkitalo

Agenda:

- Fortum in brief
- GO Market
- Current trends
- Additionality
- I-RECS

We are putting our growth strategy to work

Megatrends

Climate change and resource efficiency
Urbanisation
Active customers
Digitalisation, new technologies

Mission

We engage our customers and society to drive the change towards a cleaner world.
Our role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. This way we deliver excellent shareholder value.

Vision

For a cleaner world



Strategy



Drive productivity and industry transformation



Grow in solar and wind



Create solutions for sustainable cities



Build new energy ventures

Delivering on our growth strategy

Agreement with E.ON
Uniper public takeover offer

170 MW solar
power in India,
35 MW in Russia

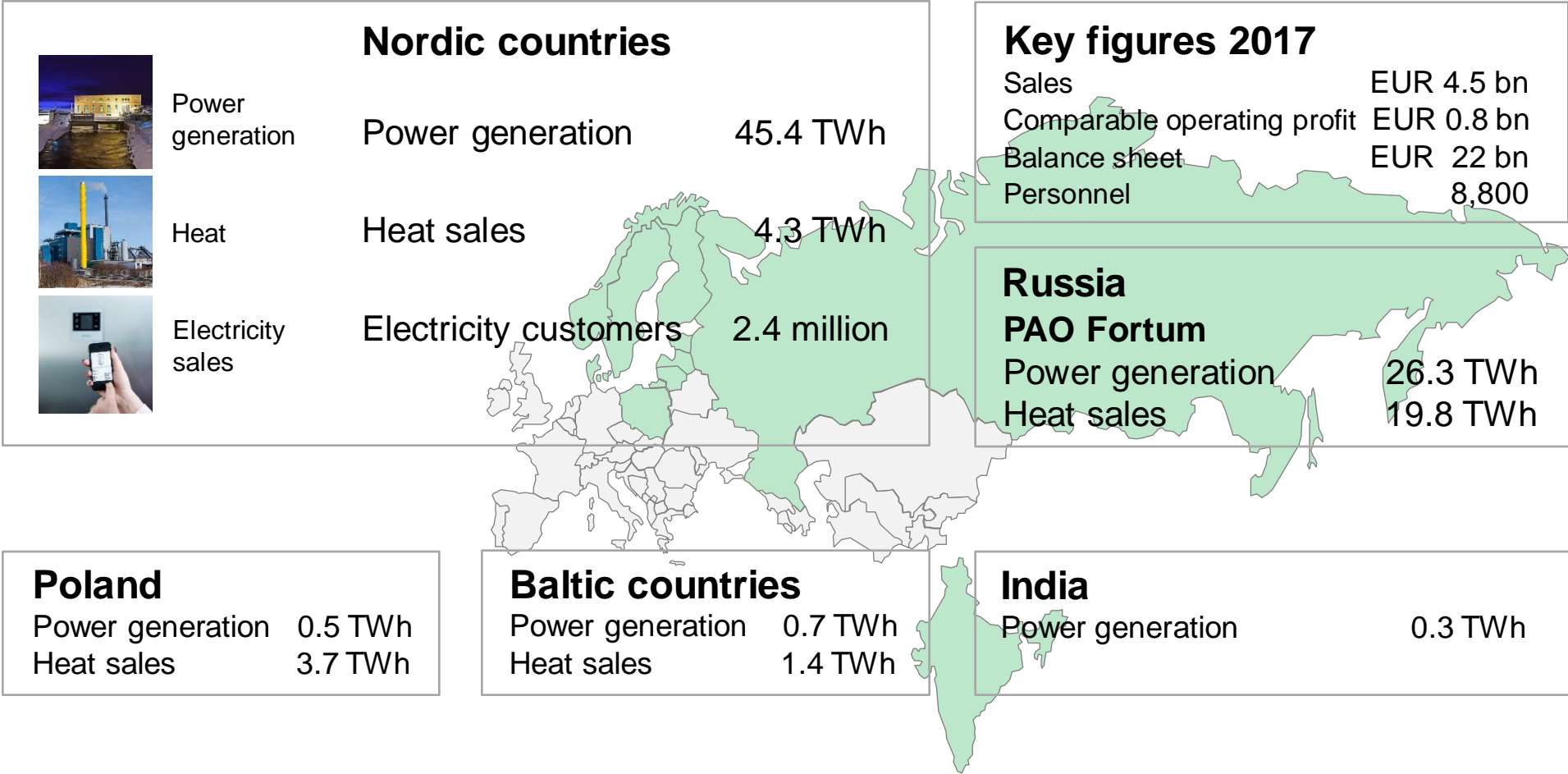
Hafslund restructuring

180 MW wind
power in Norway,
35 MW in Russia
and a 1,000 MW
wind JV in Russia

International
growth for Nordic
market leader
Charge & Drive

Chelyabinsk GRES unit 3
started commercial
operation

Our current geographical presence



Fortum's Nordic, Baltic and Polish generation capacity

Generation capacity MW

● Hydro	4 672
■ Nuclear	2 814
■ CHP	774
■ Other thermal	376
□ Wind	107

Nordic, Baltic and Polish generation capacity 8 743

Figures 31 December 2017

Norway

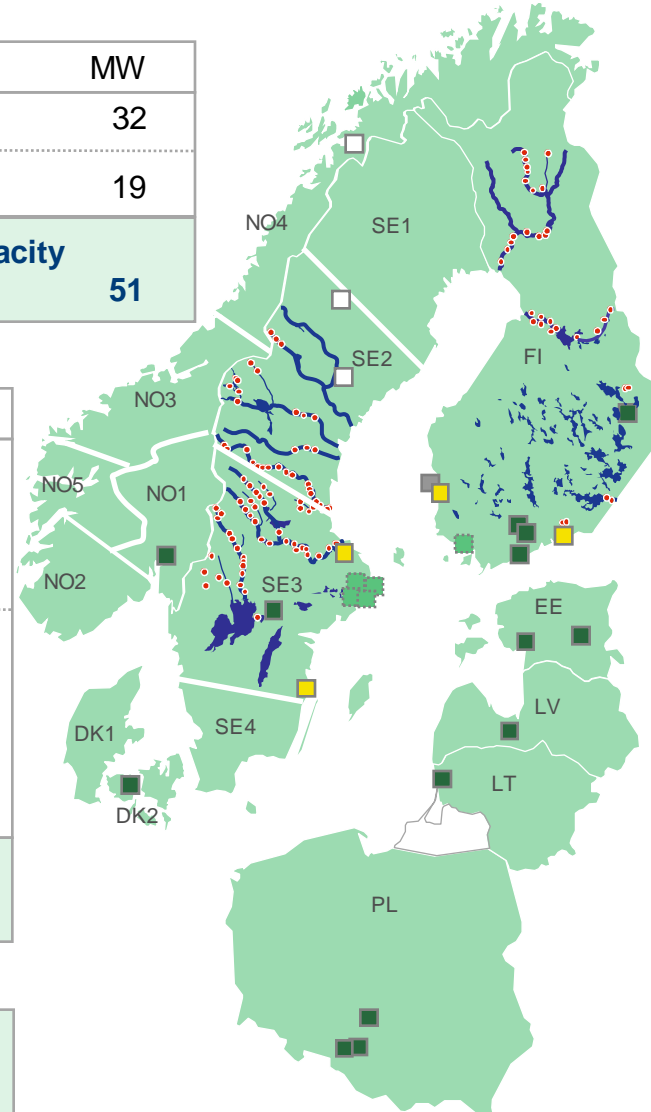
Price areas	MW
NO4, Wind	32
NO1, CHP	19
Generation capacity in Norway	51

Sweden

Price areas	MW
SE2	
Hydro	1 550
Wind	75
SE3	
Hydro	1 575
Nuclear	1 334
CHP	9
Generation capacity in Sweden	4 543

Denmark, DK2

	MW
Generation capacity, CHP in Denmark	16



Finland

	MW
Hydro	1 547
Nuclear	1 480
CHP	451
Other thermal	376
Generation capacity in Finland	3 854

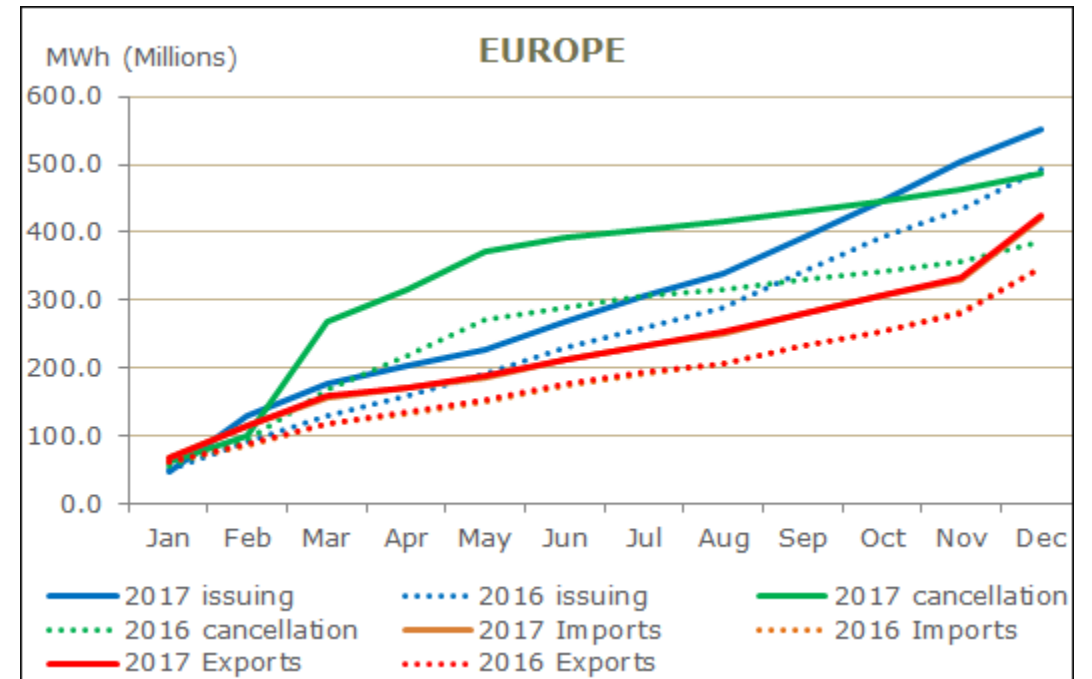
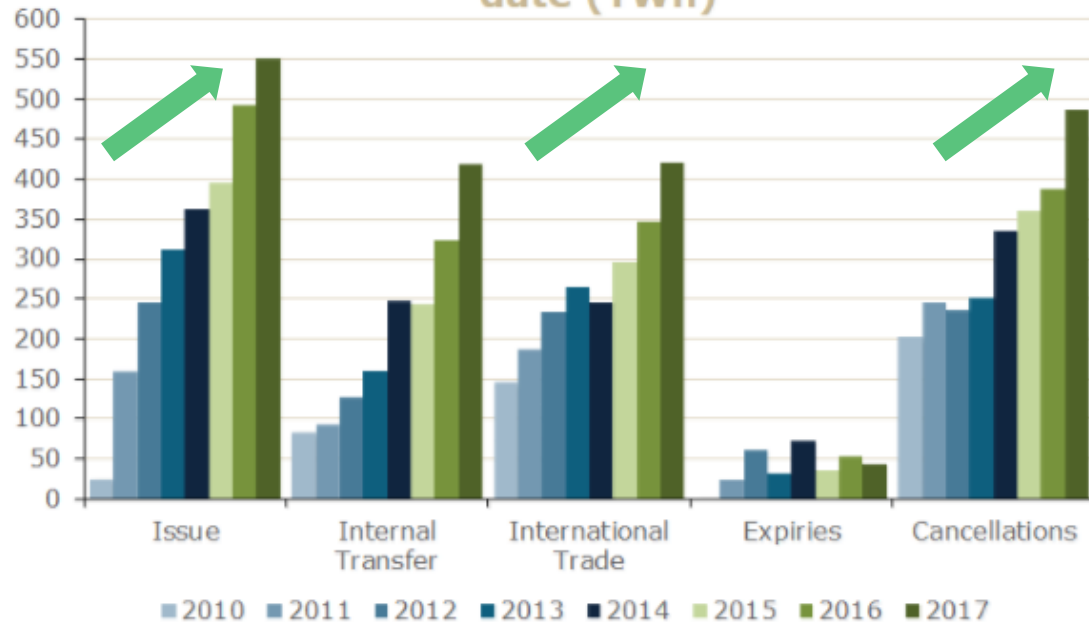
Baltics and Poland

	MW
Generation capacity, CHP in Estonia	49
in Latvia	26
in Lithuania	18
in Poland	186

■ Associated companies' plants (not included in the MWs)
 Stockholm Exergi (Former Fortum Värme),
 Stockholm; TSE, Naantali

Market Demand and Supply in Europe. Steadily increased for past decade in Europe.

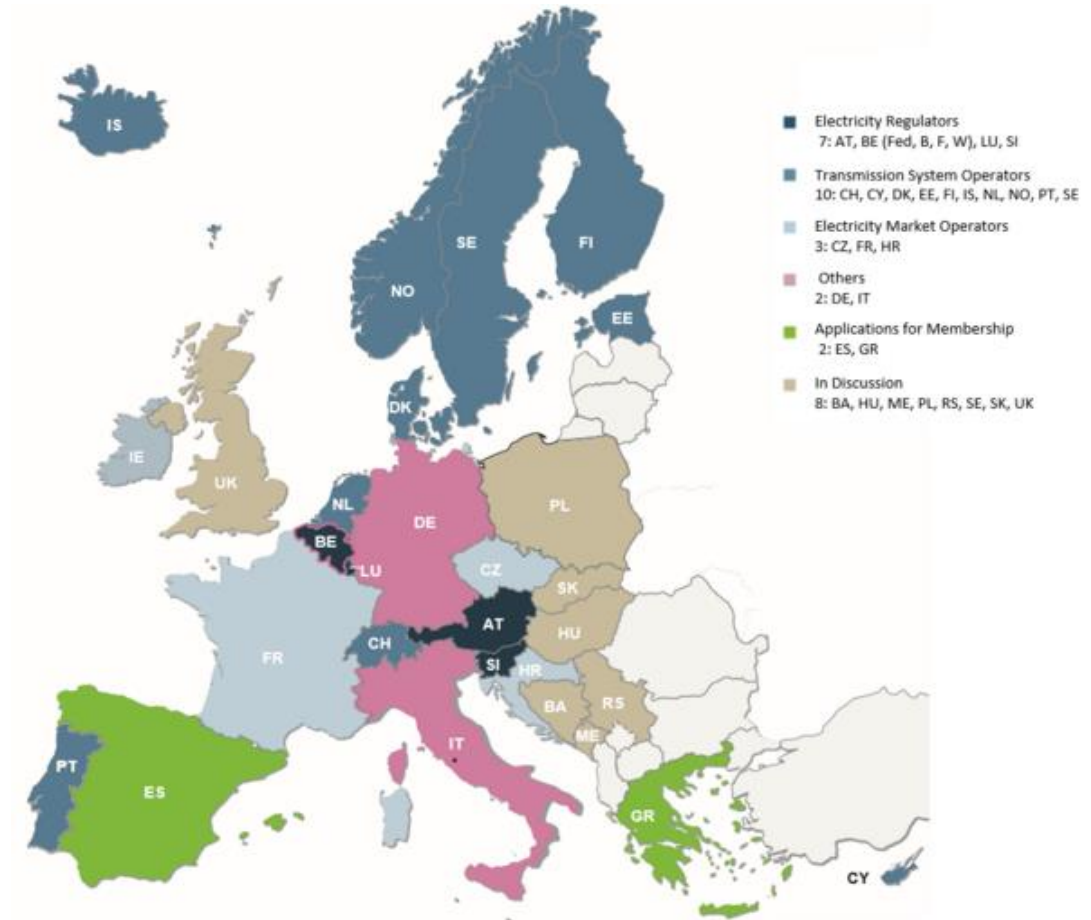
Annual EECS transactions by transaction date (TWh)



Source: AIB

GO market can be seen quite complex, but is actually one of few working true pan-european "commodity" market

- Market is voluntary!
- Cancellation vs. transfer/export
 - Cancellation is the ultimate purpose of the GO
 - However quite relevant portion of the GOs just expire (50? TWh in 2016)
 - Export and import is the key of economic activity in the market
 - Makes commercial activity possible
 - Transfer volumes has increased from 91 TWh (2010) to 400 TWH (2017)
- Size of the market
 - Hard to estimate as based on OTC activity
 - Market participants hedge positions over time (t+1/10)
 - Annually roughly 200-300 TWh is traded with forwards
- Comparison on overall electricity market in Nordics
 - Physical market 380 TWh
 - Financial market 1000-1200 TWh



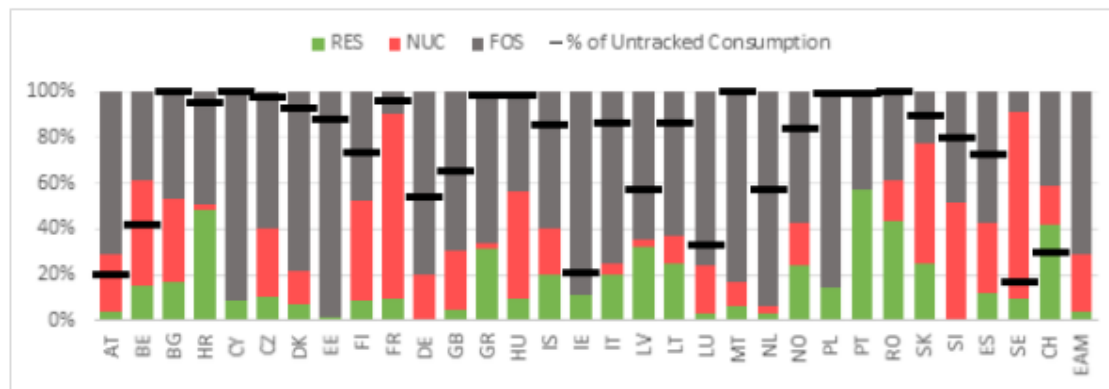
The market activity has increased substantially during last 2 years. More consumers and more service providers every year

- In general market has strengthened a lot
 - RE100 companies are procuring and consuming 100 % renewable electricity
 - Carbon foot printing and corporate social responsibility reporting
 - GO has gained more support in consumer side and arguments for greenwashing have been battled
 - Oversupply has decreased
- Localization
 - Consumers are getting pickier
- Still some effects from tax schemes
- New technologies such as Blockchain



GOs are the sole proof for electricity tracking and this creates misconception between production and consumption

- Countries with 100% RES generation are not green in consumption
 - Only educating your customers you can strengthen the market and GO set-up
 - Need for harmonisation between disclosures
 - Currently gives also flexibility to market
 - Does vintage actually matter?
 - GOs have validity for 12 months
- Every misunderstanding, misconception, "argument" opposing the development of GO markets comes down to one misunderstanding
 - GOs (EACs) are an instrument for energy bookkeeping



Additionality - What does that even mean?

- Background for whole additionally discussion comes from sharp rise of conscious corporate consumer, who incorporates environmental sustainability in its core strategy
- Additionality can basically be anything. Our view is that there is no need for "additionality" standardisation, but it should be solely decided by consumer
- Basically one can think that labeled GO is additional already



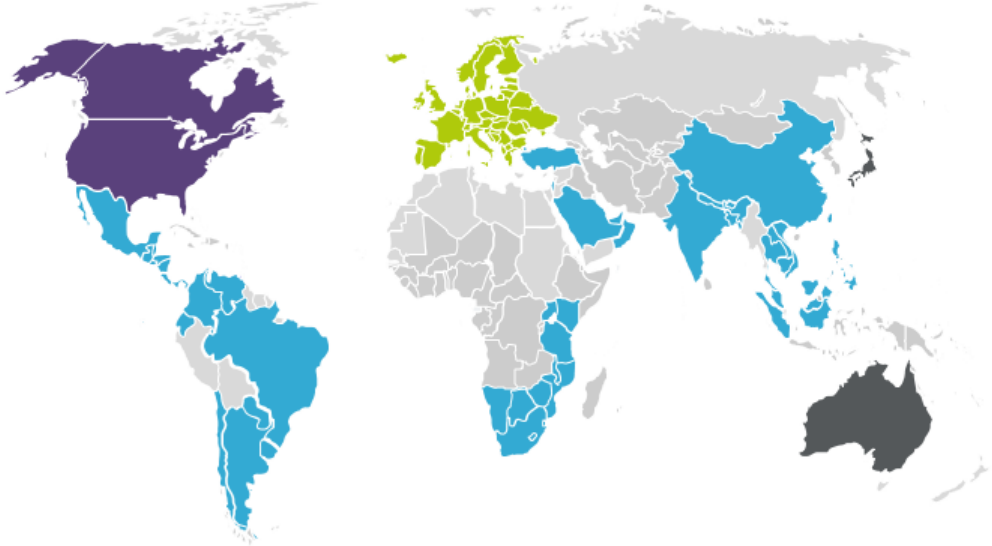
I-RECS are used where the regulation is not setting the framework for electricity attributes tracking

- National issuer needed
 - For robust claims
- Minor volumes
 - 1,5 TWh in 2016
- Growing market
 - Geographically
 - Volume
- Only few players



>700 TWh

Corporate demand – driving the global development



78 TWh

600 TWh

40 TWh

ROW: 5 TWh and growing