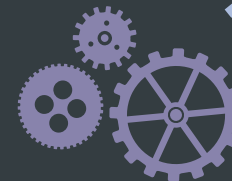




Go North
Schweden und Finnland

Wind Energy in Finland & Bird & Bird



Jenny Rontu

Berlin 30 November 2016

Legal & Regulatory Framework

Finland

Topics of this Session

- A. What the current market looks like
- B. What you need to know about Wind in Finland
 - 1) Regulation – Current System
 - 2) Regulation – What to come
 - 3) Investment/Development Process - Important Regulatory Aspects
- C. What we expect

A. What the current market looks like

Main Features of the Finnish Energy Sector

A. What the current market looks like

Main Features of the Finnish Energy Sector

Finland is highly dependent on imported energy

- ~ 70 % of consumed energy is imported
- ~ 60 % of imported energy comes from Russia (gas, oil, coal and uranium)
- ~ 20 % of consumed electricity is imported (mostly from Nordic countries)

Investments in nuclear

- 2 plants with 4 reactors in energy production
- produce ~ 25 % of consumed electricity
- 5th under construction (2018?)
- 6th being planned and permission granted (2024)

A. What the current market looks like

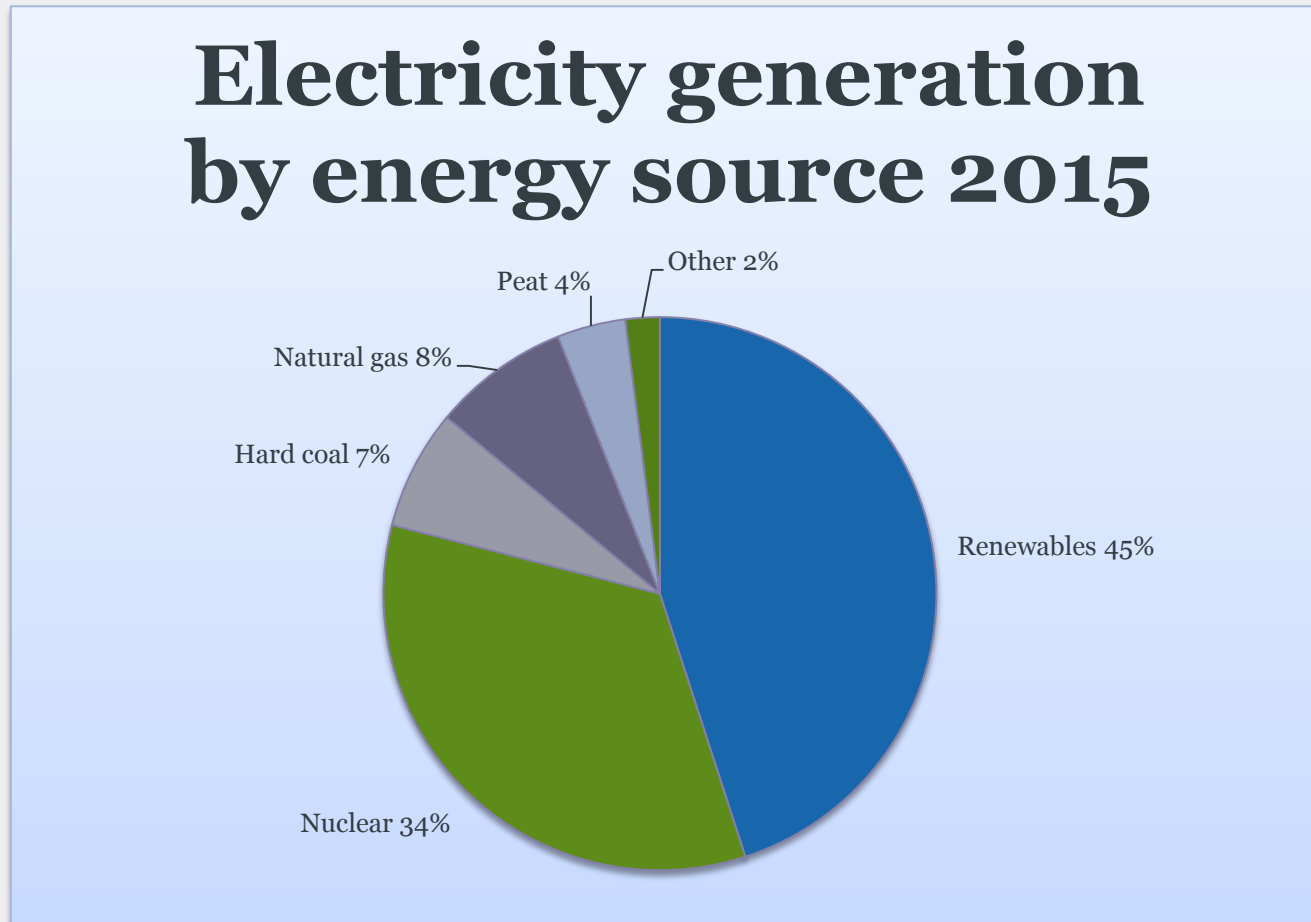
Main Features of the Finnish Energy Sector

Leading role in renewable energy

- Finland's national EU target for 2020, 38 % share of renewable energy in final consumption, is already reached (2015, 39,5 %)
- Higher national target for renewables in transport sector
 - Finland 20 %, EU 10 %
- Most common renewable sources are hydro and bioenergy

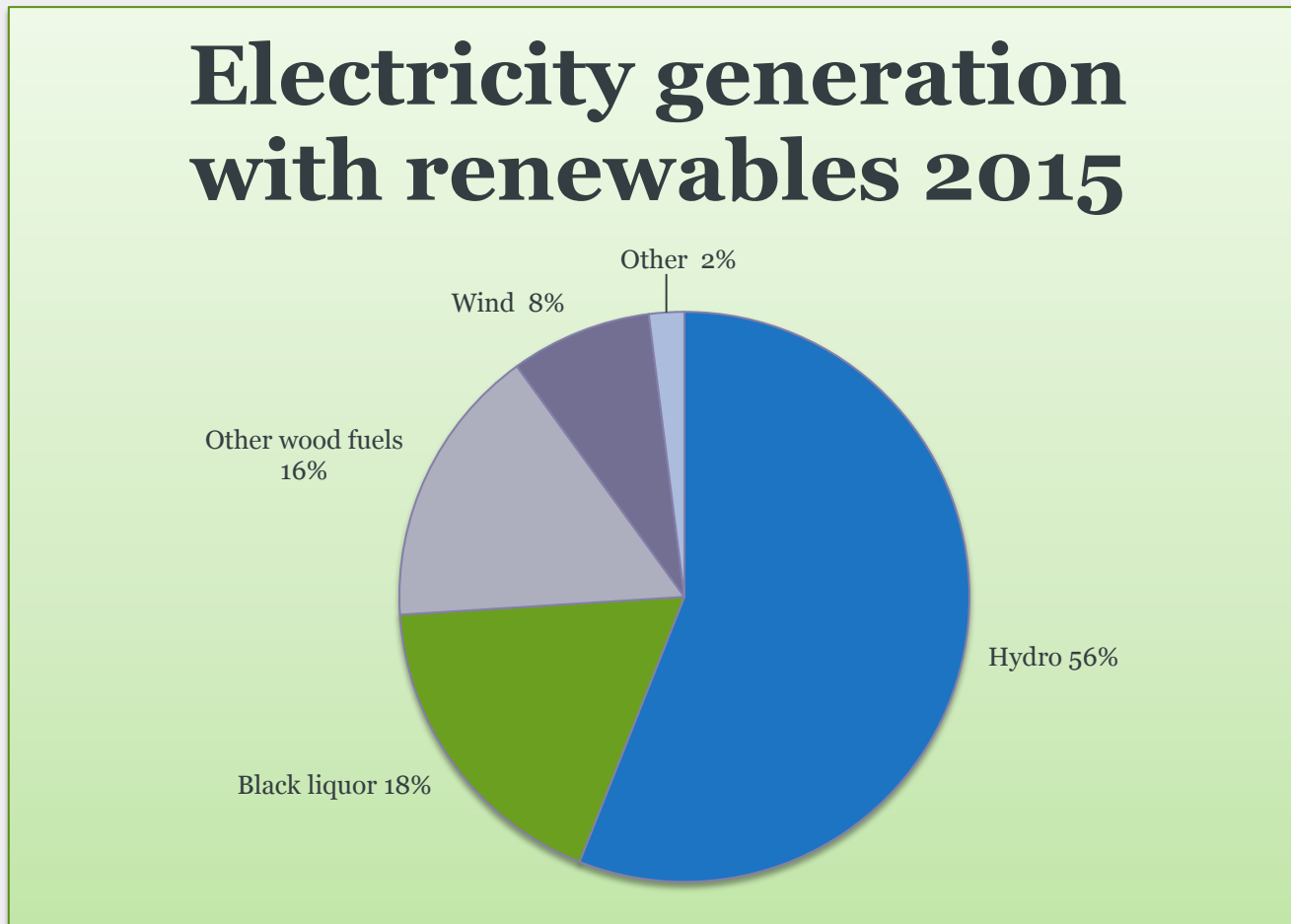
A. What the current market looks like

Electricity Generation I



A. What the current market looks like

Electricity Generation II



A. What the current market looks like

Renewable Energy Mix

Hydropower capacity

- There is very little room for more hydro power plants in Finland due to strict rapid protection provisions
- Hydro power plants cause a threat to endangered stocks of fish

Bioenergy

- While wood based fuels are renewable, their consumption is not always considered carbon and emission neutral

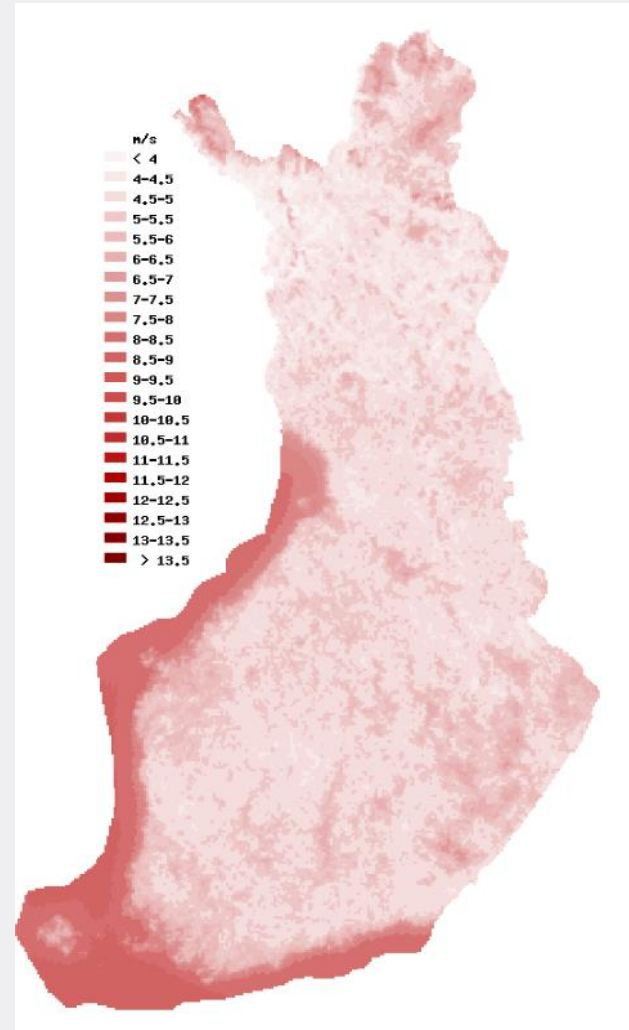
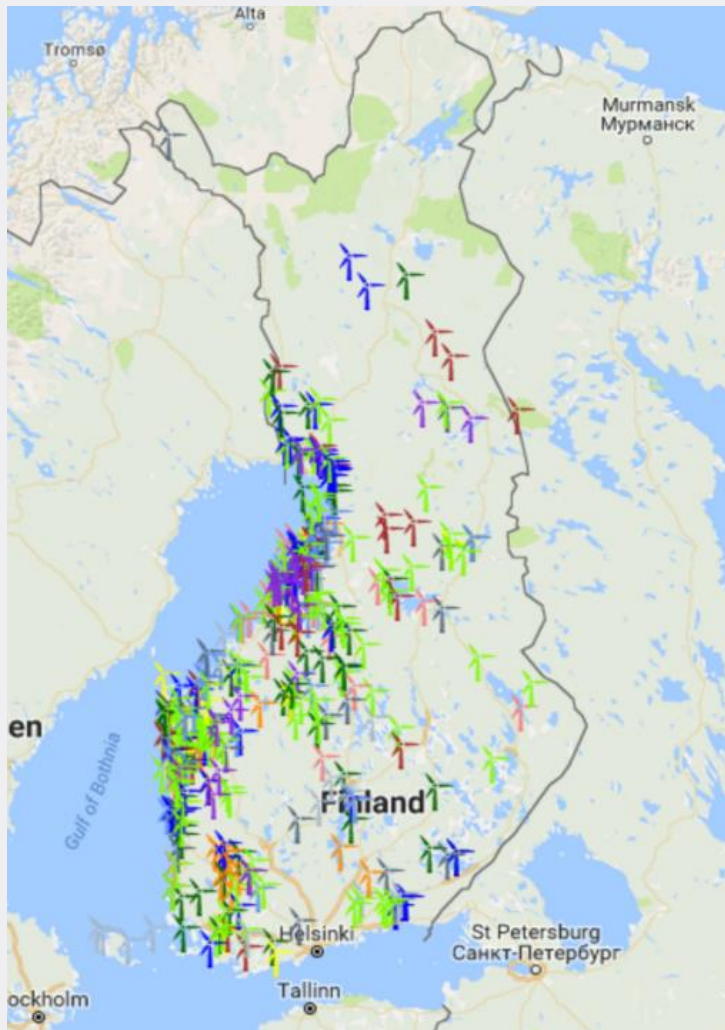
Wind energy

- Significant increase in last five years
- Mainly due to very lucrative subsidy scheme started in 2011

A. What the current market looks like

Wind Power Plants

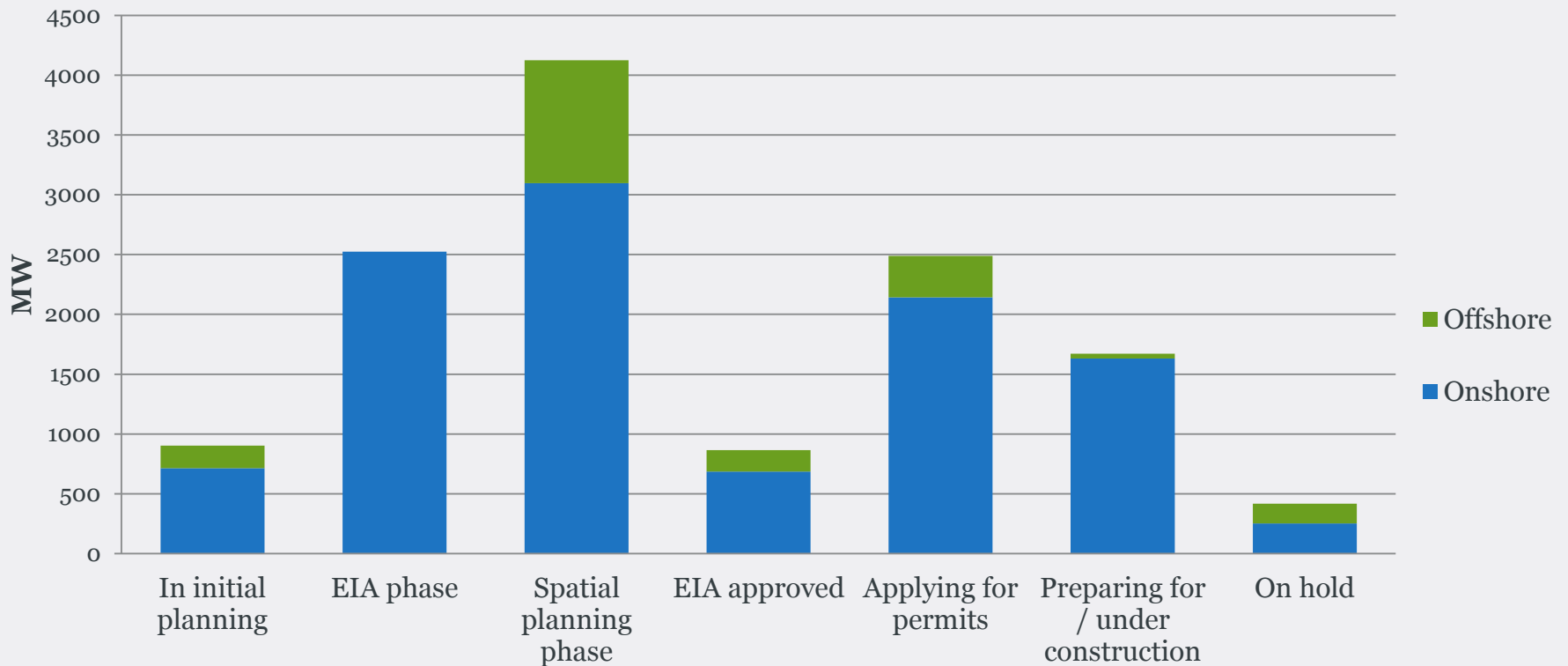
Wind Atlas – where does it wind?



A. What the current market looks like

Wind Energy Projects in the Pipeline

There are currently ~ 300 projects in different stages



A. What the current market looks like

The Finnish Grid System

- The nation-wide transmission grid (110-400 Kv) operated by Fingrid
- Regional networks (110 Kv) that are connected to the transmission grid
- Local electricity companies' distribution networks (0.4-70 Kv some up to 110 Kv)that are connected directly to the transmission grid or use grid services via a local network
- Power plants are connected to a distribution or regional network or in some cases to the transmission grid
- Electricity system operation is subject to a network license issued by the Energy Agency

B. What you need to know about Wind in Finland

1) Regulation - Current System

B. 1 Regulation - Current System

The Feed-In Tariff System

- Support level:
 - target price of EUR 83.50/MWh less the average market price of electricity
 - Average market price 2016 ~EUR 30/MWh
 - Amount of support ~ EUR 50/MWh
- ~ 840 MW since 2011, in total ~ 1008 MW, 98 projects, 372 turbines

B. 1 Regulation - Current System

"Controlled Closure" of the Feed-in Tariff System

- The 2,500 MVA quota is now practically exhausted
- No new projects will be included in the system
- Still, subsidies will be paid to the projects accepted in the system
- Each accepted plant will receive subsidies for up to 12 years
- Subsidies will be paid until 2030

B. What you need to know about Wind in Finland

2) Regulation - What to come

B. 2 Regulation - What to come

Government Programme's Targets

Key project to shift towards carbon-free, clean and renewable energy cost efficiently

- Intention to invest a total of MEUR 300 in bio-economy and clean energy
- Increasing the share of renewable energy to 50 % and self-sufficiency to 55 % by 2030
- Giving up coal in energy production and halving the use of imported oil by 2020

B. 2 Regulation - What to come

The National Climate and Energy Strategy for 2030

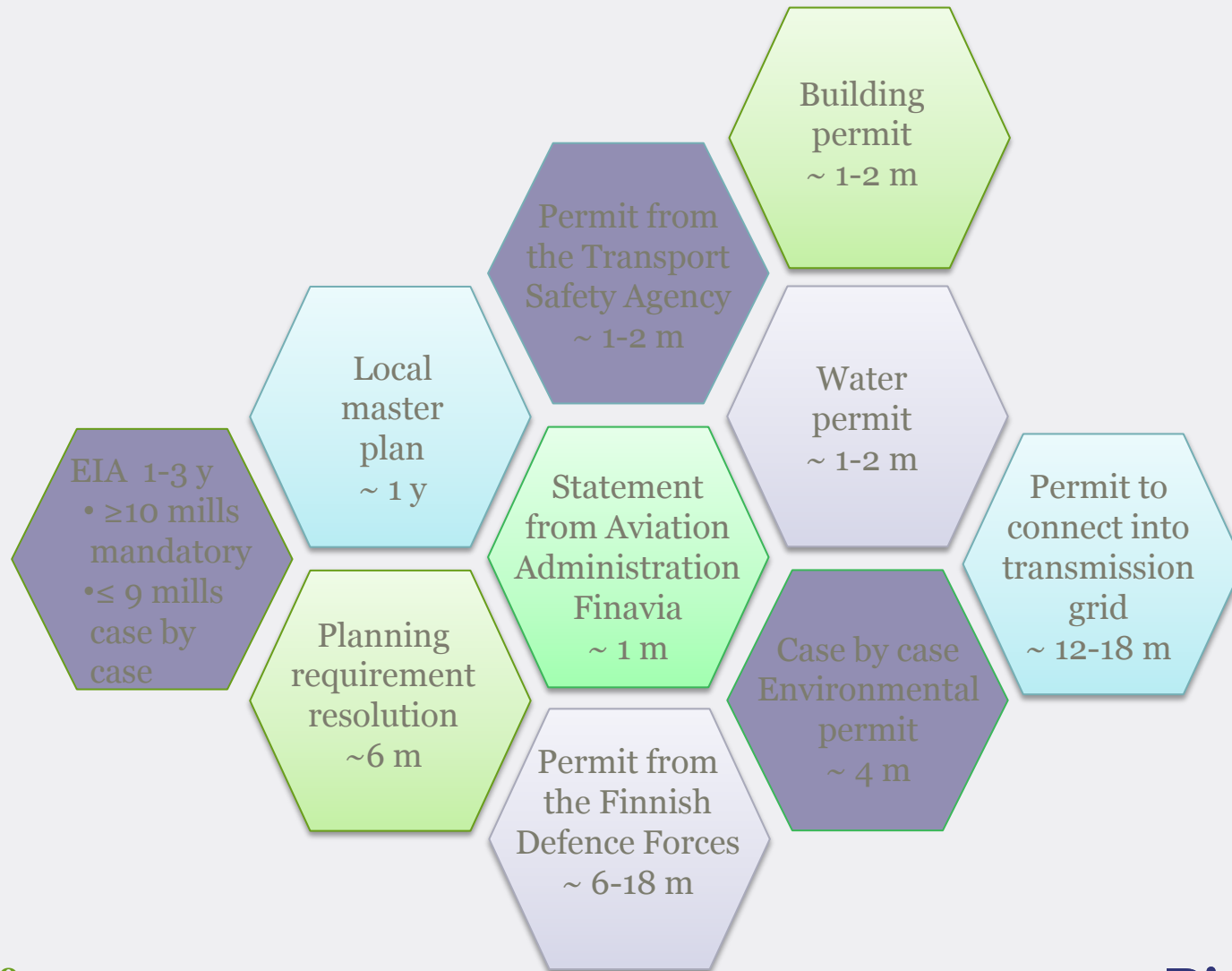
- Long term goal is market-based realization of renewable energy projects
- Technology-neutral competitive bidding
 - Production subsidy
 - A total of 2 TWhs will be invited to bid in 2018-2020
 - The production subsidy and the type of bidding will be decided in government proposal
 - Before preparing the government proposal an extensive survey will be conducted regarding wind power's environmental and health impacts
- Investment aid for energy technology pilot projects

B. What you need to know about Wind in Finland

3) Investment/Development Process - Important Regulatory Aspects

B. 3 Important Regulatory Aspects

Permits



B. 3 Important Regulatory Aspects

Grid Connection

- The system operator is obligated to connect an energy producer that has an energy buyer
- Connecting to the grid should be negotiated in early stages, before Environmental Impact Assessment (EIA)
- Only smaller wind parks may be connected to distribution network
- Larger parks connect to regional or transmission grid
- Electricity producer whose production is more than 2 MW shall cover the costs of grid reinforcement

B. 3 Important Regulatory Aspects

Nature and Culture

- Legal environmental issues
 - Birds
 - Noise and flicker (distance to settlement)
 - Protected areas
- Nordic climate and culture
 - Sami people
 - Reindeers
 - Ice

B. 3 Important Regulatory Aspects

Infrastructure

Wind turbine site selection is primarily affected by the following factors:

- Wind conditions
- The grid connection possibilities
- Infrastructure that supports the construction and maintenance
- Conditions for foundations
- The landowners' attitude towards the project

B. 3 Important Regulatory Aspects

Lease Agreements

- Building is allowed only in areas that are in possession of the builder/developer
- Leasehold is usually registered in order to be mortgaged
- Conditions for registration: fixed term, transferability, and landowner's permission to erect buildings
- The rent may be agreed as desired
- Buffer zone agreements
- Land may also be bought

C. What we expect

C. What we expect

- Government proposal on the production subsidy next spring
- Competitive bidding constitutes a clear advantage for experienced players who are able to calculate their bid reliably
- After 2020?

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