

Wind in Finland

5.2.2015

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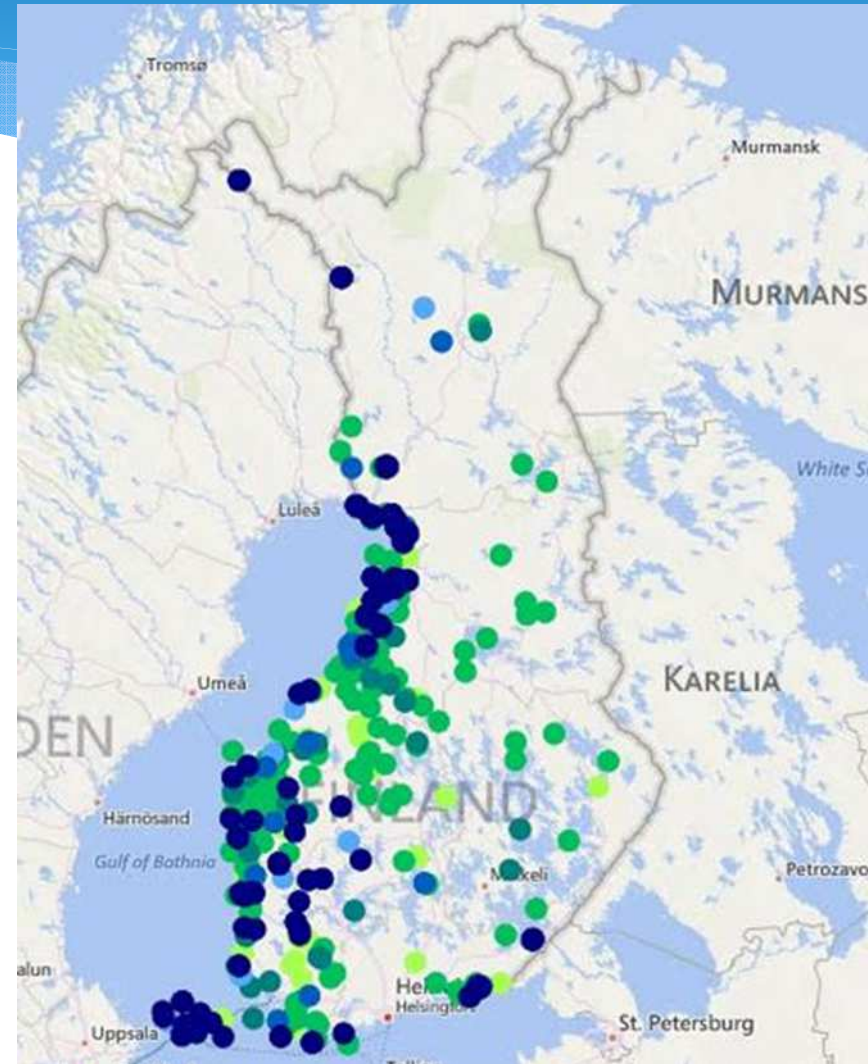
STY Suomen
Tuulivoimayhdistys ry

Installed capacity and the project pipeline

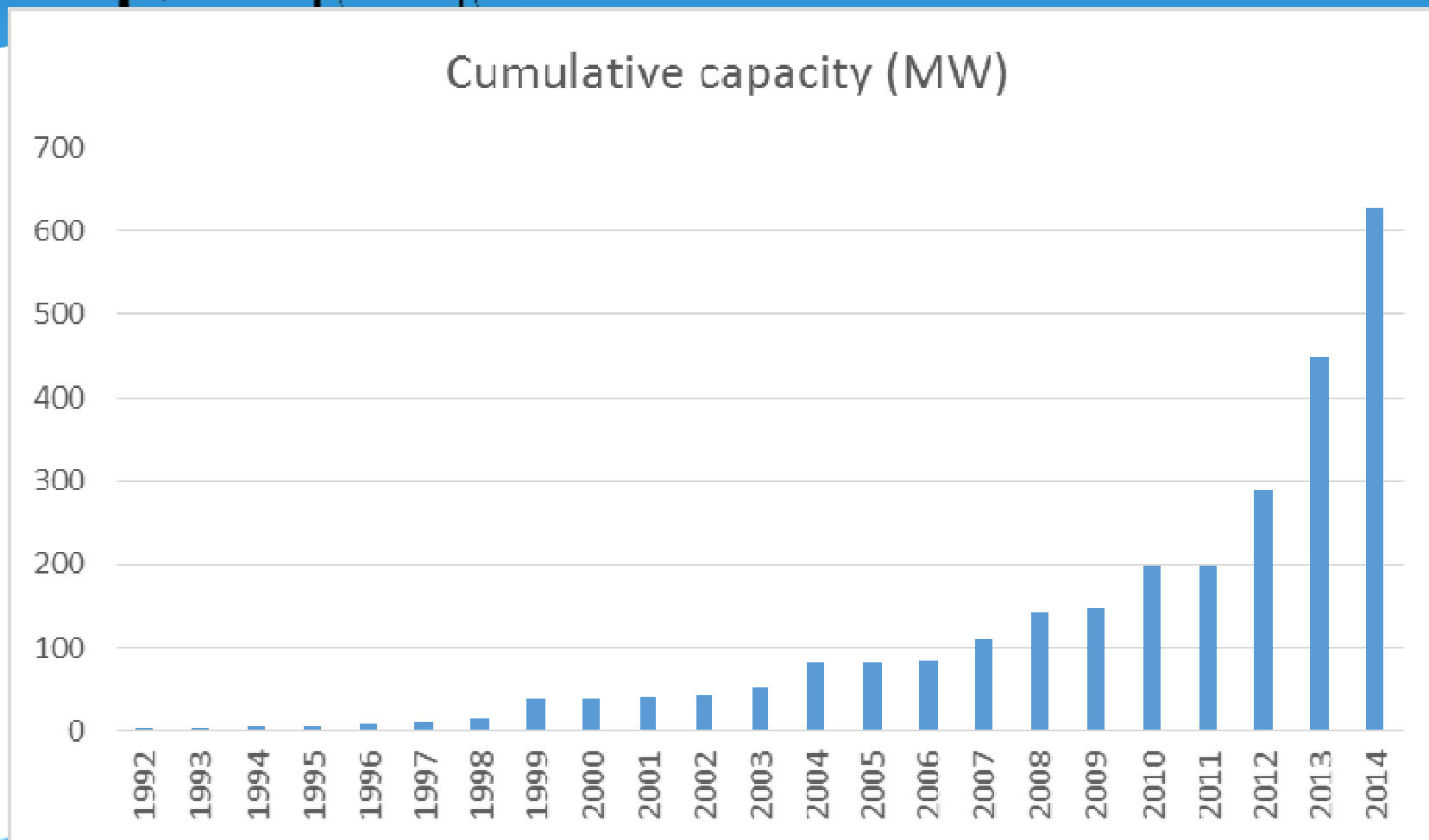
- * Installed capacity in the end of 2014: 627 MW, 270 turbines
- * In 2014: about 190 MW, 80 turbines will be installed
- * In 2015: at least 320 MW, over 100 turbines will be installed

Project pipeline

- * 8 900 MW onshore
- * 2 300 MW offshore



Construction has finally started!





Targets vs. current situation

Target:

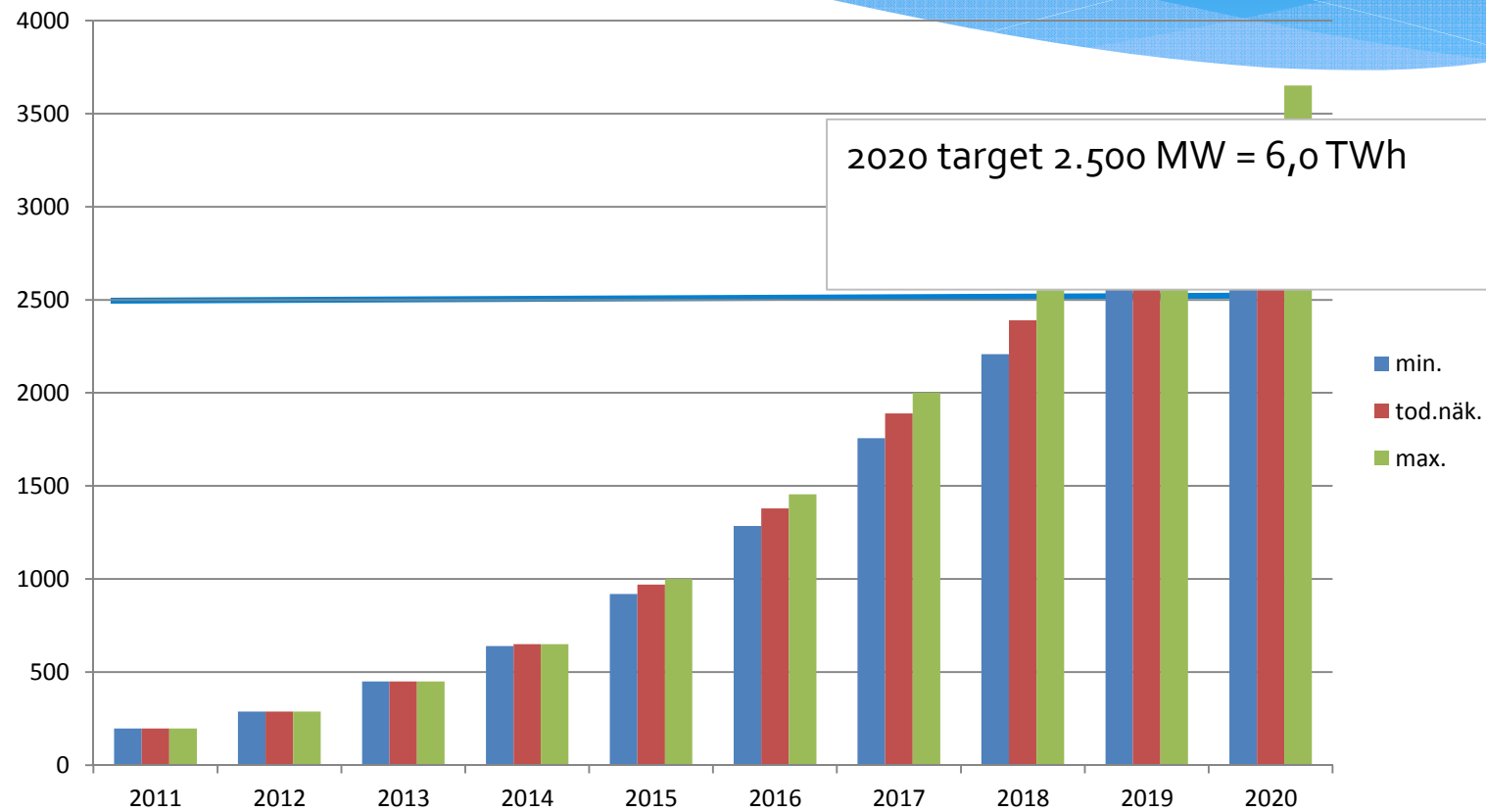
- * 38 % of the energy consumption with renewable energy
- * Annual wind power production 6 TWh by 2020
- * Annual wind power production 9 TWh by 2025

At the moment:

- * Estimate: 35 % of the energy consumption covered with renewable energy in 2014
- * 1,1 TWh wind energy production in 2014



Cumulative capacity estimate 2020





Financial support in Finland

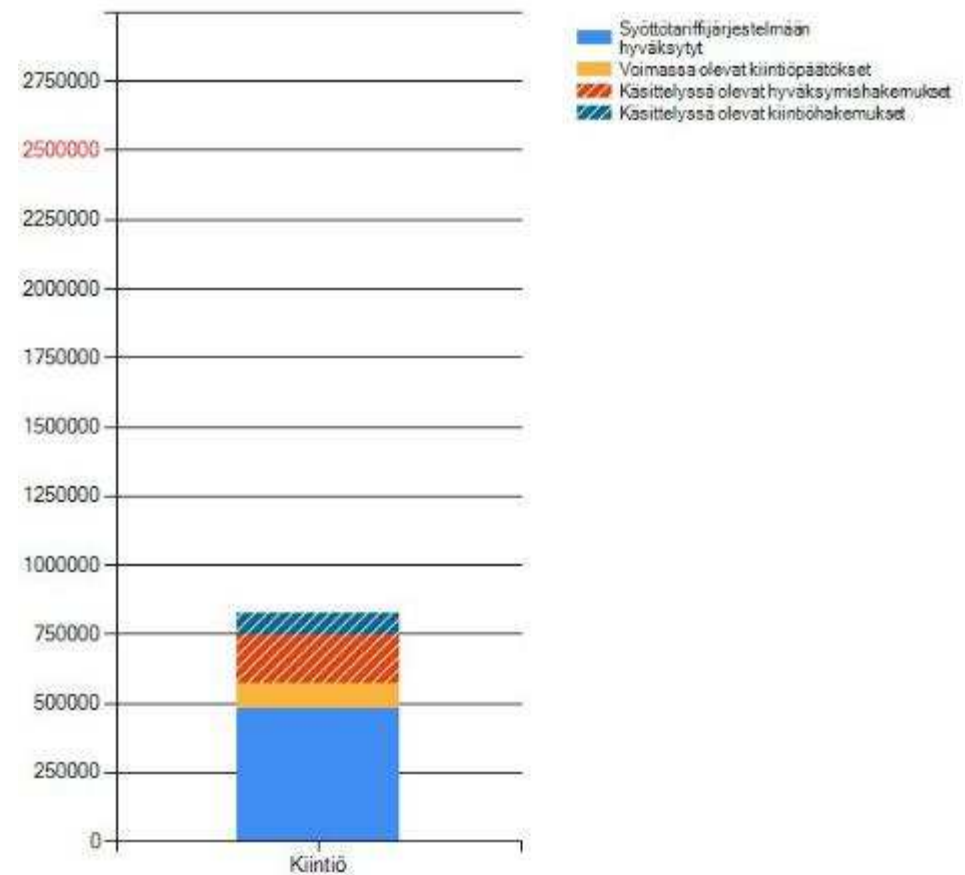
- * Feed-in-tariff for 12 years
- * 83,5 €/MWh
- * 105,3 €/MWh until end of 2015
- * 2500 MW worth of capacity is accepted to the system
- * First demonstration subsidy for offshore wind farm
 - * 20 million euros + feed in tariff
 - * The demo project chosen in autumn 2014



Current status of the feed-in-tariff (27.10.2014)

- * 480 MVA Accepted to the system
- * 175 MVA applications in process
- * 89,64 MVA reservations on quota
- * 83 MVA quota applications in process
- * 265 MVA pre-announcements

(<https://tuotantotuki.emvi.fi/QuotaCounter>)



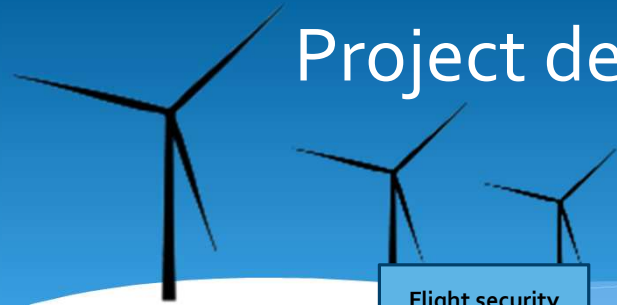


Finland, special features

- * Good wind conditions, but relatively low winds
- * Arctic conditions; icing
- * Military radars as a show-stopper on certain areas
- * Bureaucracy in permitting process - a bottleneck to investments
- * Wind power as a new phenomena



Project development and permitting



Flight security

Radars

Sea ways

Finding the right are

- The regional land use plan?
- Negotiations with land owners
- Metsähallitus (Finnish forest and park service) / offshore + state owned land
- Negotiations with municipality and environmental authorities
- No nature conservation areas too close

EIA
Local Master plan

- EIA needed if more than 10 WTG or 30 MW
- Local master plan always needed in the case of bigger projects
- Inhabitants of the community have right express their opinion (master plan + EIA)

Permit according to water act

- Always needed in the case of offshore

Building permit

- Always needed
- Approved by local authority
- Neighbors have the right to express their opinion

Environmental permit

- Required for all activities involving risk of pollution to the air, water or soil as well as for disturbance of neighbors by noise or light.



Current political situation

- * Election in April 2014
- * 2030 targets needs to be set
- * Discussion on the economics flies high
- * Also strong discussion on the cost of wind power
- * New support mechanism needs to be designed
- * Second offshore demonstration project in the next four years?





Germany vs. Finland

Germany

- * 82 mil. Inhabitants
- * 357 000 km²
- * Over 21 000 wind turbines
- * 3 200 MW installed in 2013
- * Cumulative capacity 33 700 MW in the end of 2013

Finland

- * 5 mil. inhabitants
- * 338 000 km²
- * Little bit over 200 wind turbines
- * 162 MW installed in 2013
- * Cumulative capacity 448 MW in the end of 2013



Enjoy the seminar!

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