



Gotland

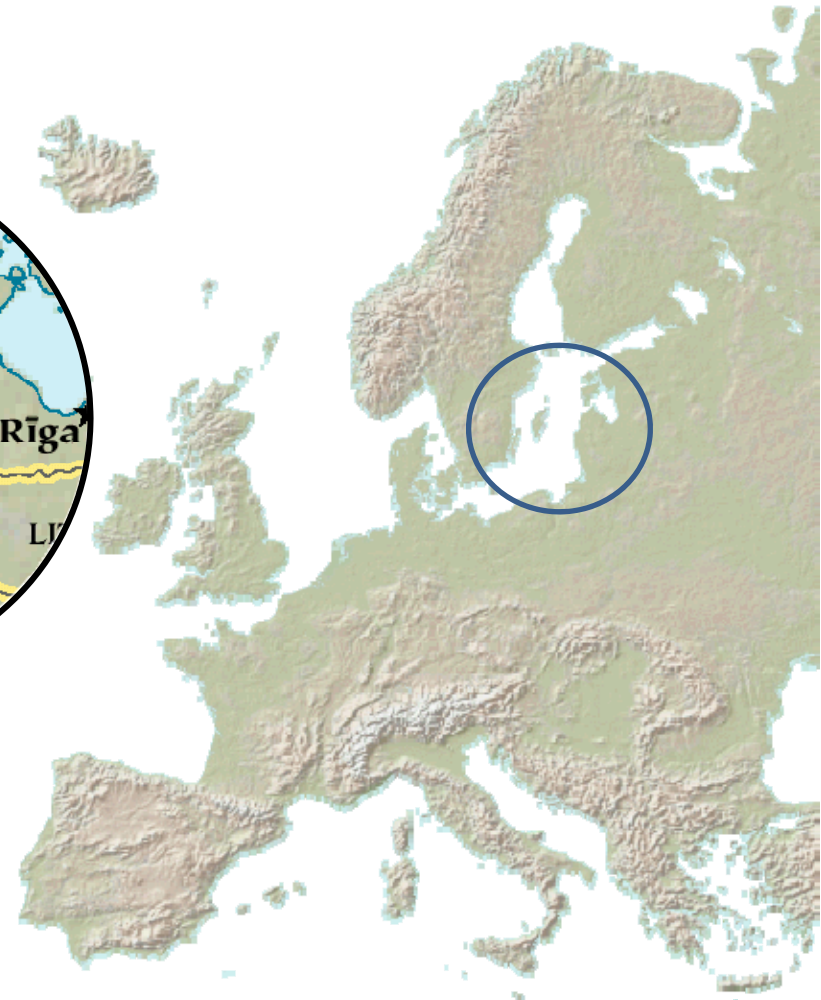
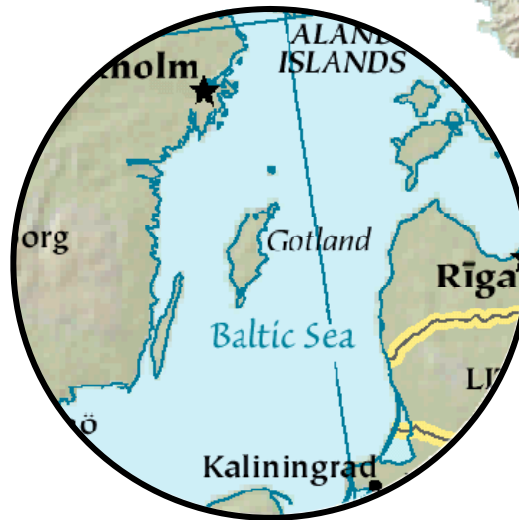
A Sustainable Swedish Island in the Baltic Sea



Dunkerque October 2014, Bertil Klintbom, Director International Strategies, Region Gotland



In our opinion Gotland is situated in the middle of the world, in the Baltic Sea, but where is the island?



Gotland

Population 57,000 but 2-300 000 during summer

Its own Region

A year on Gotland



Autumn



Winter



Spring



And summer



Energy facts about Gotland today

- Total energy consumption is 4400 Gwh/y
- The islands oil import is decreasing. Many buildings use district heating, heat pumps or woodchips/pellets for heating
- But 65% of the energy use still comes from fossil fuels
- Gotlands Vision 2025 points out the long-term direction forward
- A master plan for Gotland and ISEP (Island Sustainable Energy Plan) has been approved by the Regional board

Vision 2025, Gotlands plan for the future

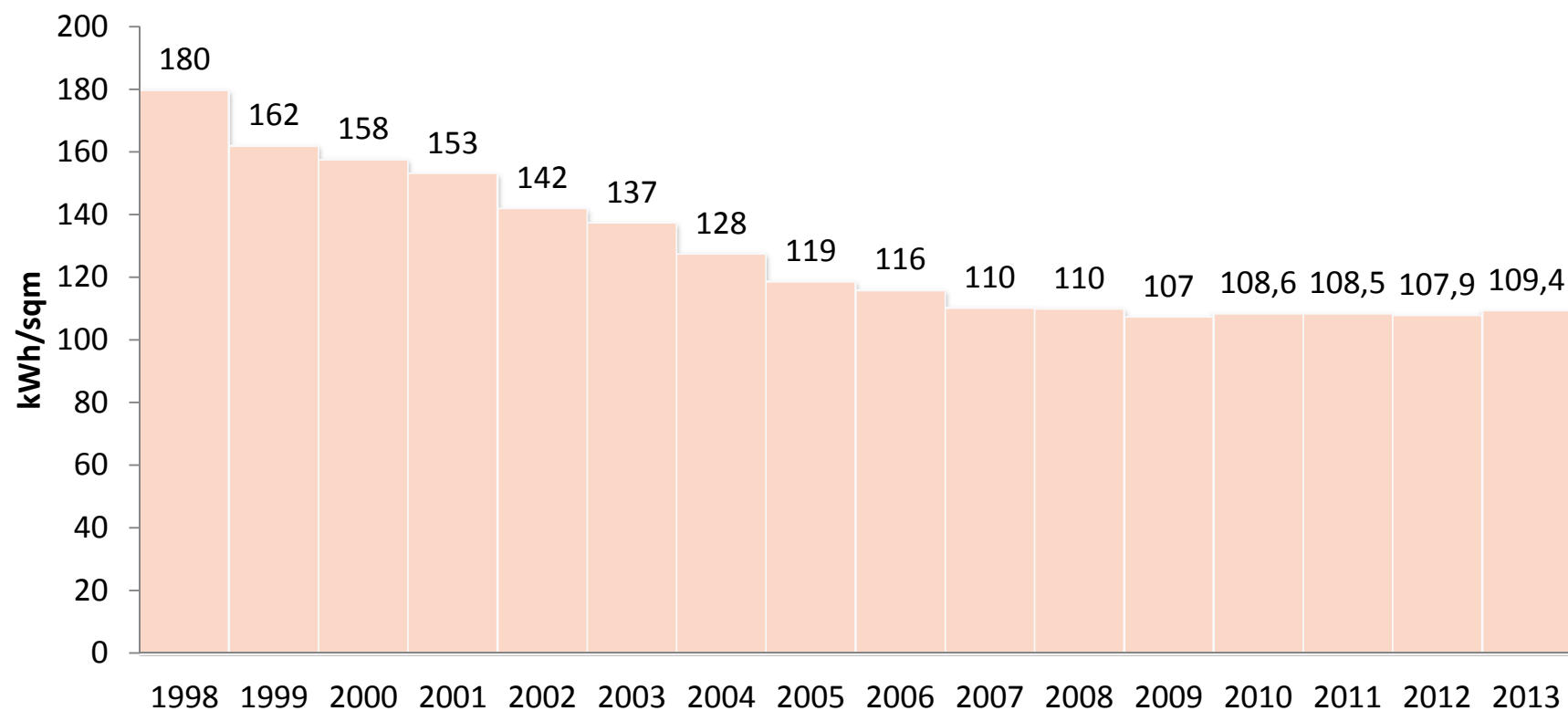
- The visions foundation is that the entire society will work together and shares the ambition to create a sustainable and ecologically based island
- The goal is a sustainable society with sufficient renewable energy 2025
- The use of renewable energy sources will contribute to society when it comes to social and economical growth for the island and also help to fight climate change globally

The Strategy for the coming years

- Reduce the need for fossil fuels for vehicles by promoting environmentally friendly alternatives preferably locally produced fuels such as Biogas/Bio Methane/Hydrogen
- Organise new logistic and sustainable systems for public transports and communications
- Reduce energy demands in new buildings and work with new systems and technologies for RUE in older buildings
- Technical equipment should be chosen carefully and lifecycle and life costs calculations should be carried out to determine lifespan and actual needs

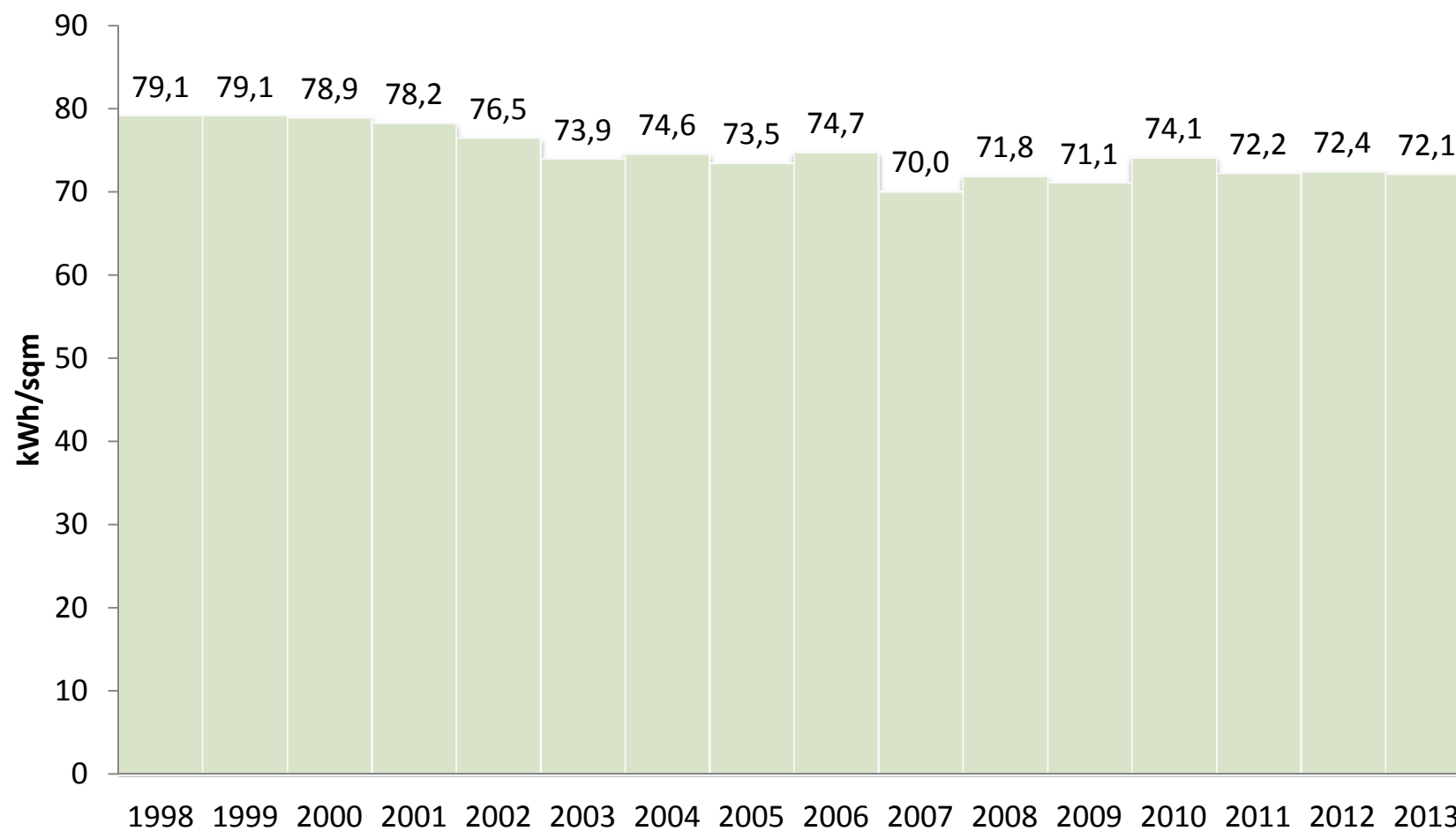
Whera are we today?*

Heat consumption 1997 – 2013, kWh/ sqm



*Figures for Region Gotlands buildings

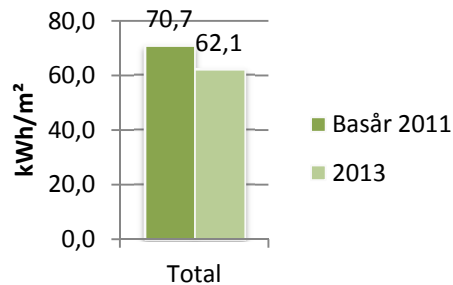
Electric consumption 1997 – 2013, kWh/sqm*



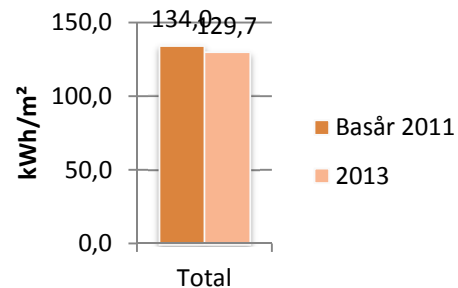
*Figures for Region Gotlands buildings

EPC Result after 1 year

Electric consumption/sqm
for buildings where EPC
energy efficiency plans are
implemented
2011 och 2013



Heat consumption/sqm for
buildings where EPC energy
efficiency plans are
implemented
2011 och 2013

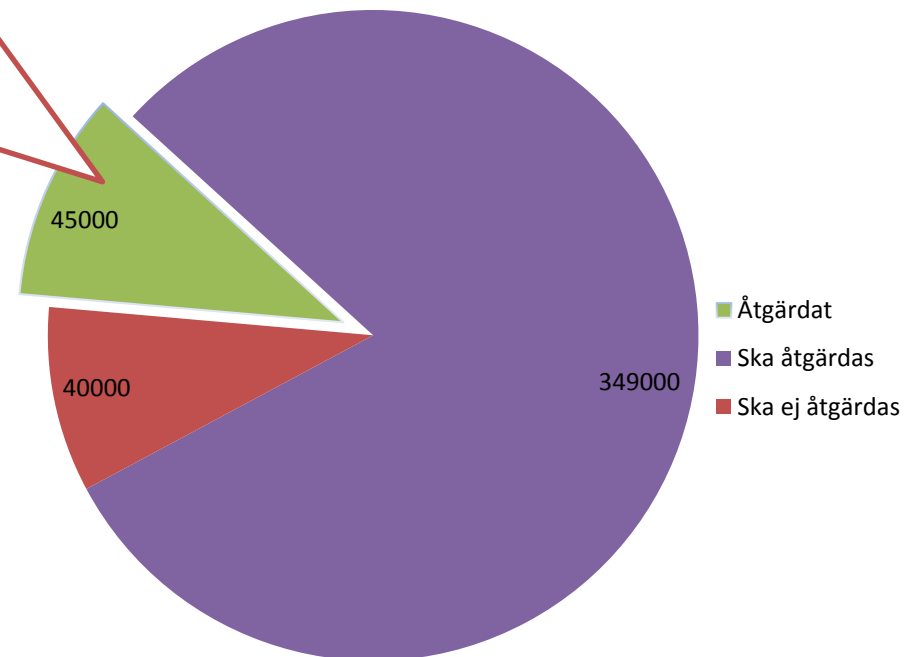


580 000
saved kWh

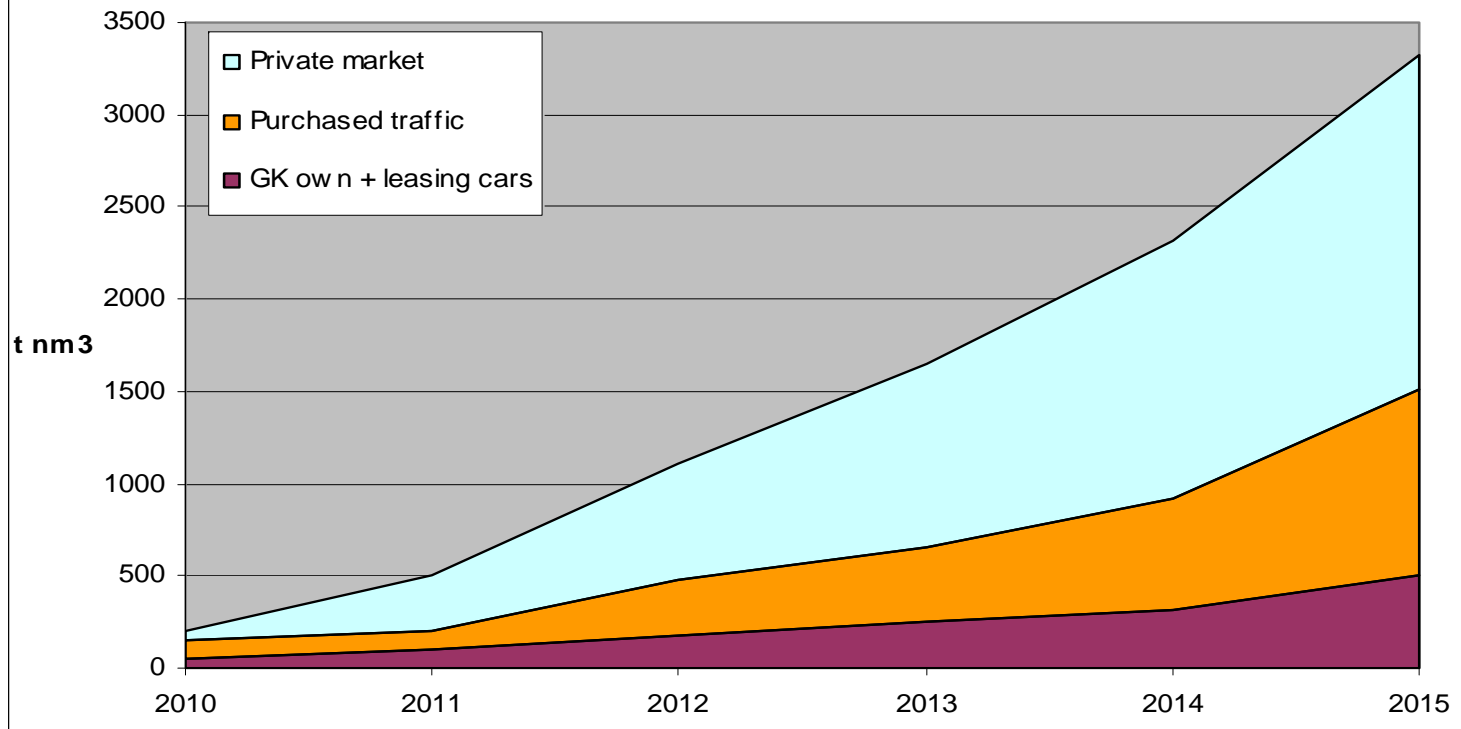


580 000
saved sek

Buildings Region Gotland sqm



Biogas - Development potential



Year 2012 – minimum 3%

Year 2015 – minimum 8%

Transports, a big challenge



Ferry leaving Port of Visby
1.6 mil passengers/year



Several companies has flights to
Gotland
Approx. 350 000 passengers/year



Public transports

Examples of existing Renewable Energy Systems already used on Gotland



Biogas production



Wind Power



Solar Power



Bio Energy –Wood chips



Using the energy in the Baltic sea
Seawater heating and cooling systems

Using the sun

PV-systems for seawater pumps grid connected on regional buildings and domestic houses, complement to wind power



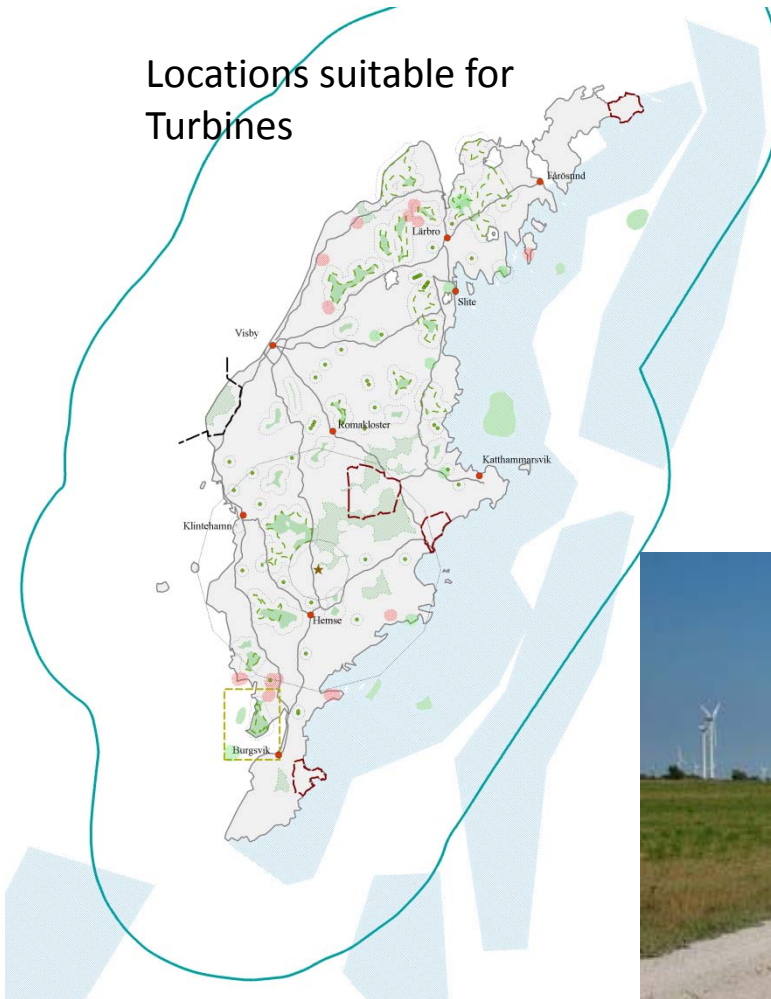


Biogas buses in main city of Visby



Biogas waste collection trucks

Locations suitable for
Turbines



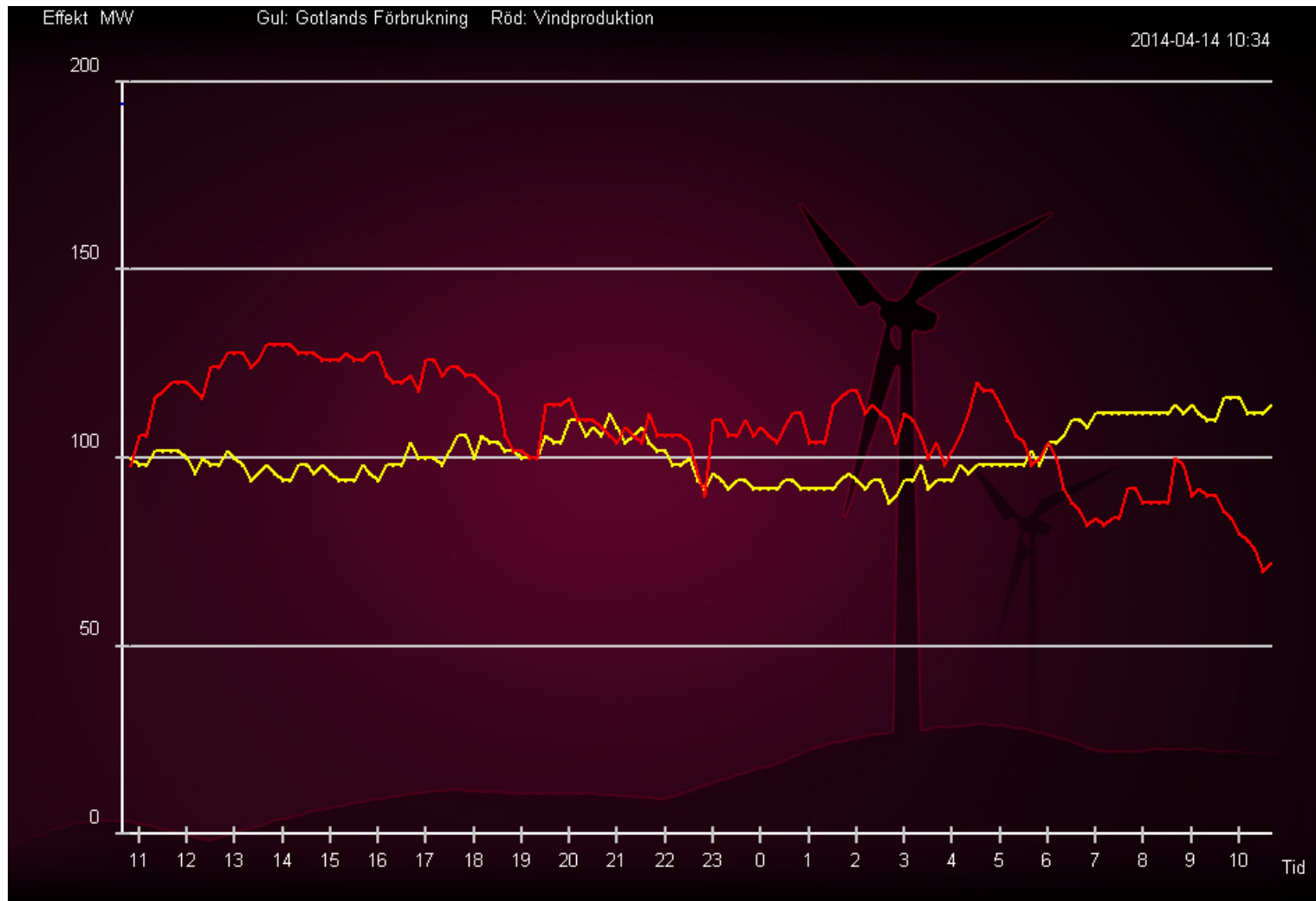
Wind power in the future!

- Today,
180 Mw installed
- Tomorrow,
Target - 2,5 TWh (could mean up to 500
turbines)
A new 500 Mw connection to main Sweden decided



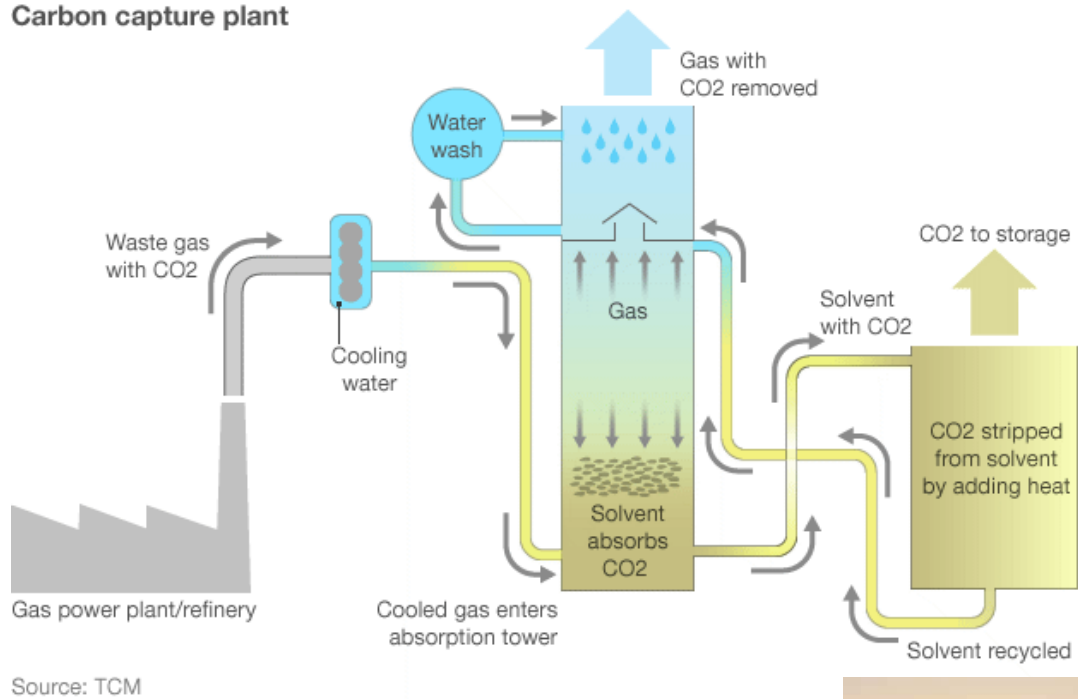
Part of Näsuddens wind park

The production of windpower and demand on Gotland can be followed on the web http://www.gotlandsenergi.se/geabgraf/default_1.htm



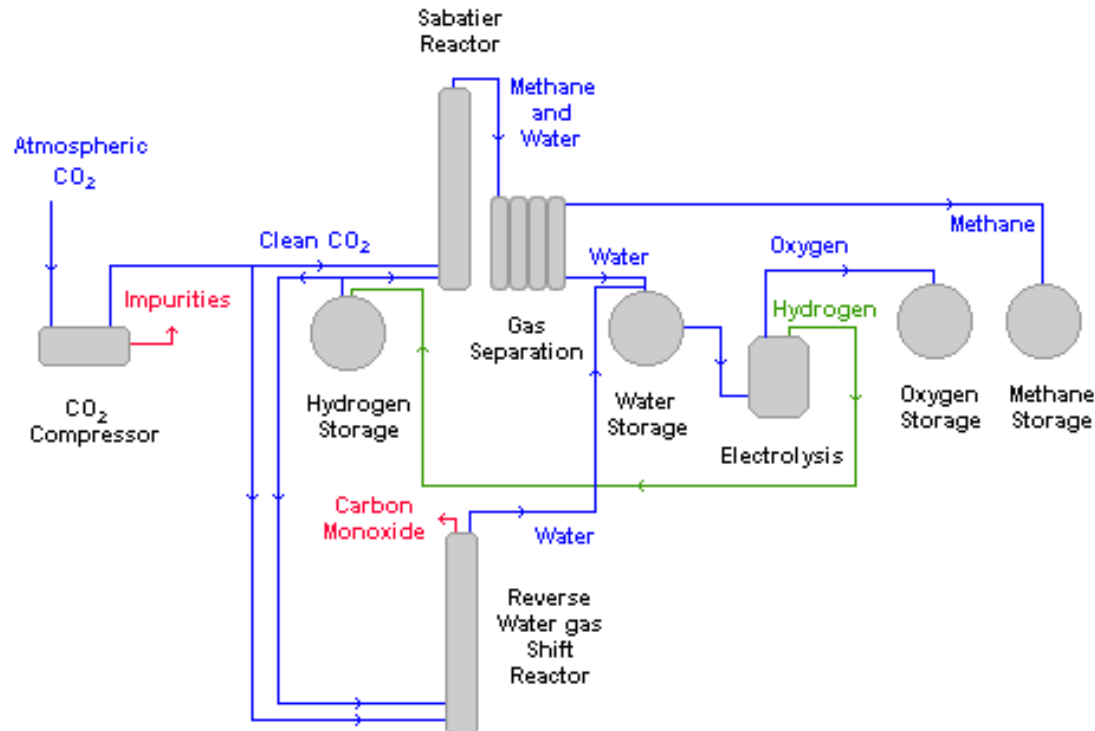
New interesting project possibilities

Carbon capture plant



Part of this emission could be a fuel !

Methane from captured CO₂, a reaction between Hydrogen and CO₂



Paul Sabatier 1854-1941
Nobel prize winner 1928

Who wants to use the produced Methane? Cars, lorries and ?

Ferry vessels today, two Ropax 1500
and two SF 700



The Company who won the contract for ferries to main Sweden until 2027 has a vision for vessels using more environmentally friendly fuels. EU,s Sulphur directive also plays a important role in that decision.

- LNG/LBG ? One new LNG ferry ordered for 2018
- Low particle emissions
- CO2 reduction with app. 20% (LNG)
- Low NOX emissions





• GOTLAND INSPIRE AND CREATE MEMORIES



Thank you for your attention!
Welcome to visit Gotland



www.gotland.se

Bertil Klintbom, e-mail bertil.klintbom@gotland.se Phone +46-498-26 92 40, mobile +46-708-86 50 20