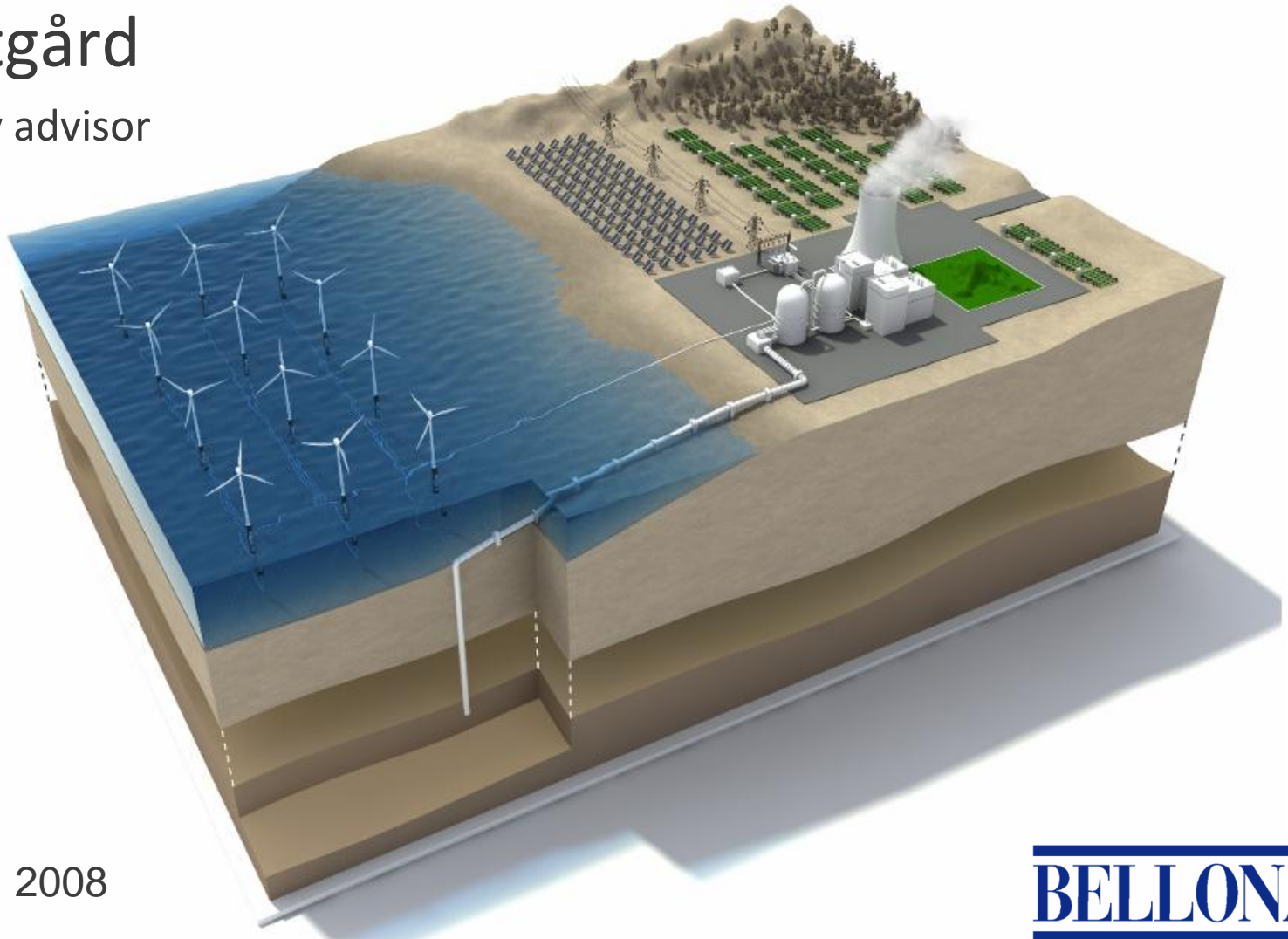


# Carbon Capture and Storage: an NGO's perspective

Bjørn Utgård

Energy policy advisor

Bellona



Oslo

September 9, 2008

**BELLONA**

# The Bellona Foundation: from pollution to solution since 1986



# The Bellona Foundation

- Independent foundation with a total of 60 economists, engineers, lawyers, journalists and political scientists
- Science based focus on technology, policy, politics and finance
- Pragmatic, solutions oriented, cooperation with industry
- Strong popular support
- Offices in Oslo, Brussel, St. Petersburg, Washington DC and Murmansk

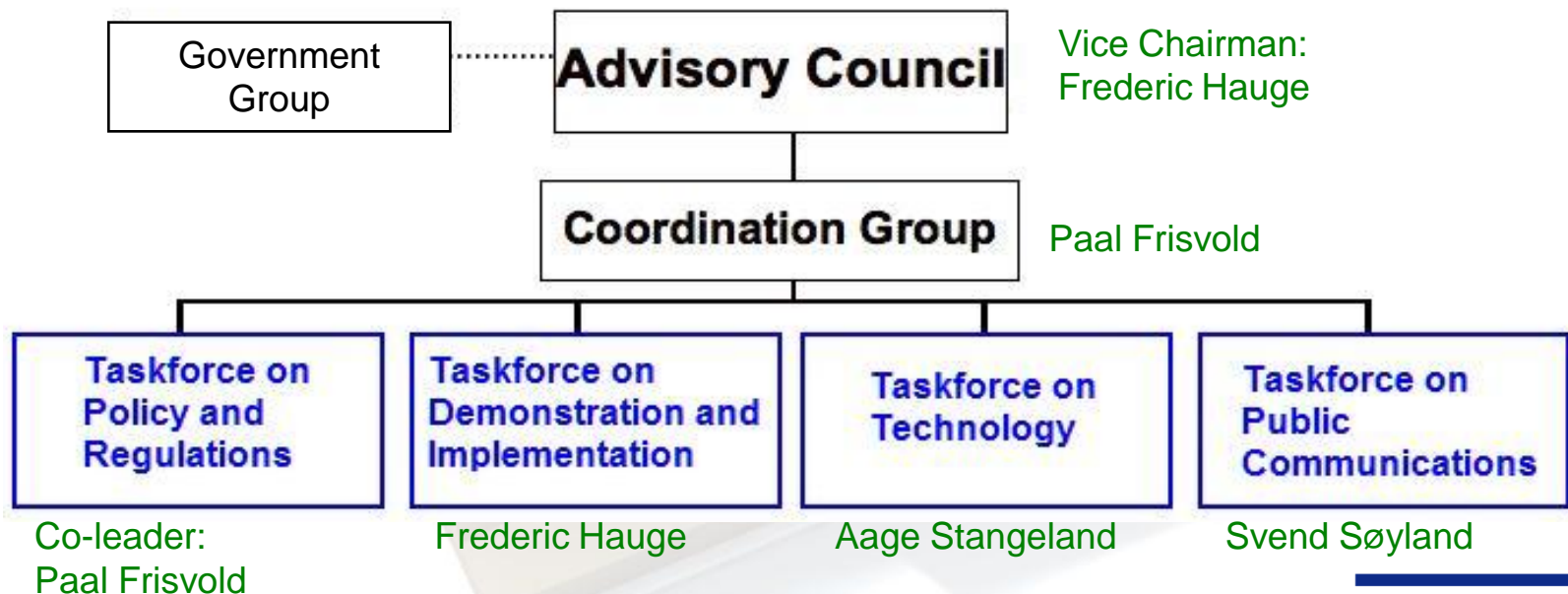
# Bellona and CCS

- Worked on CCS as a means to combat global warming since 1991
- Played a key role in making the Norwegian government commit to CCS – and even had a government overthrown on the way
- Closely working with CCS on the European level

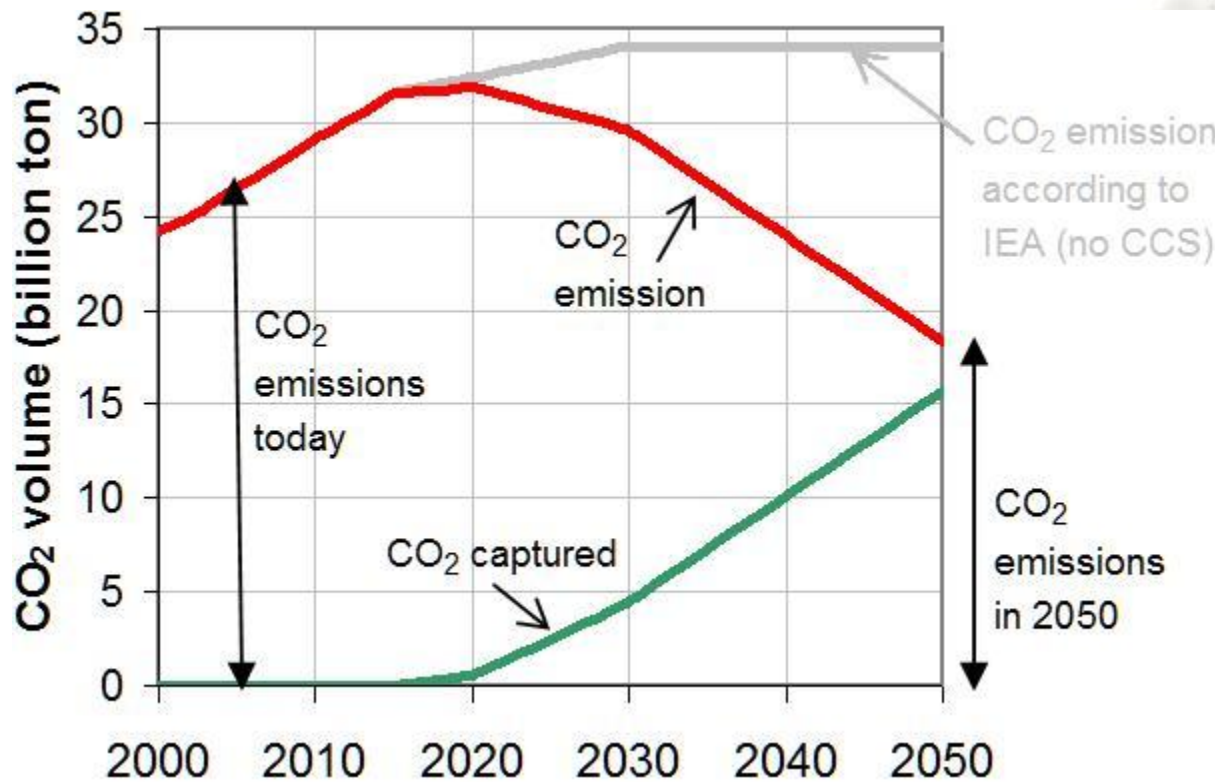
# Bellona and ZEP



- To enable fossil fuel power plants to have zero CO<sub>2</sub> emissions by 2020
- Recommendation: 10-12 large scale CCS demonstration projects (Flagship Programme) by 2015
- EU SET: ZEP Recommendations = EU Energy Policy
- ZEP focus 2008: Ensure financing of the demonstration projects



# Global CO<sub>2</sub> Capture Potential

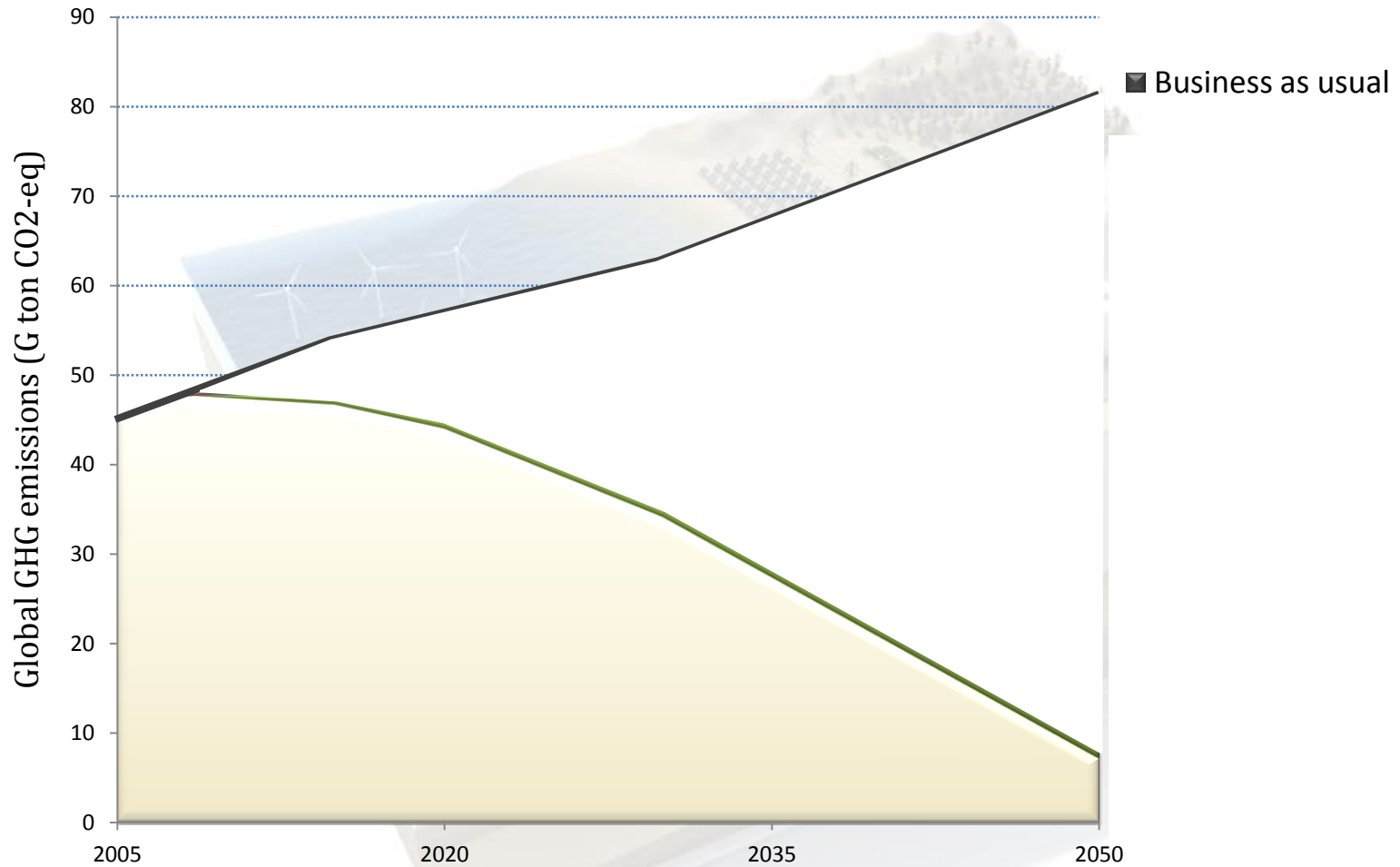


CO<sub>2</sub> emissions in 2050  
reduced by

**33 %**

compared to  
emissions today

# The Bellona Scenario



# Implementation timelines

- 20 full-scale capture projects proposed by 2016 (IEA)
- IEA ETP 2008, BLUE:
  - CCS in 12 % of power generation by 2030, 30% by 2050
  - 19% of reductions in a 50% emission reduction scenario
- SINTEF
  - Full-scale ramp-up from 2013-2015
  - Likely to see 10's of plants by 2020 and 50-150 plants by 2030



# Bioenergy with CCS: Carbon negative

- Carbon negative (heat and) power generation
  1. CO<sub>2</sub> is absorbed from the atmosphere by growing biomass
  2. Biomass partially or completely replaces fossil fuels in power or industrial plants
  3. CO<sub>2</sub> produced in combustion is captured and stored
- Existing technologies can be used, new are under development
- IEA Energy Technology Perspectives 2008 BLUE: 3% of needed reductions in 2050 (and increasing thereafter)
- CCS *enhances* the renewable energy society

# Public communication is key

- Low public awareness
  - What is global warming?
  - What is CCS and why is it relevant?
- Storage integrity - is it safe?
- The **message** and the **messenger** equally important
- Bellona is already playing an enabling role, and is dedicated to continue to do so

# Combating global warming means making CCS happen

- We must do everything possible to combat global warming: failing is not an option
- 50 – 85% global emission reduction means Europe will have to cut emissions where possible
- Need both short-term reductions and technologies for the long-term
- From 2020: No new power plant should be allowed to emit GHG's
- **We must start NOW!**

# Thank you for your attention!

[www.bellona.org](http://www.bellona.org)

[bjorn@bellona.no](mailto:bjorn@bellona.no)

