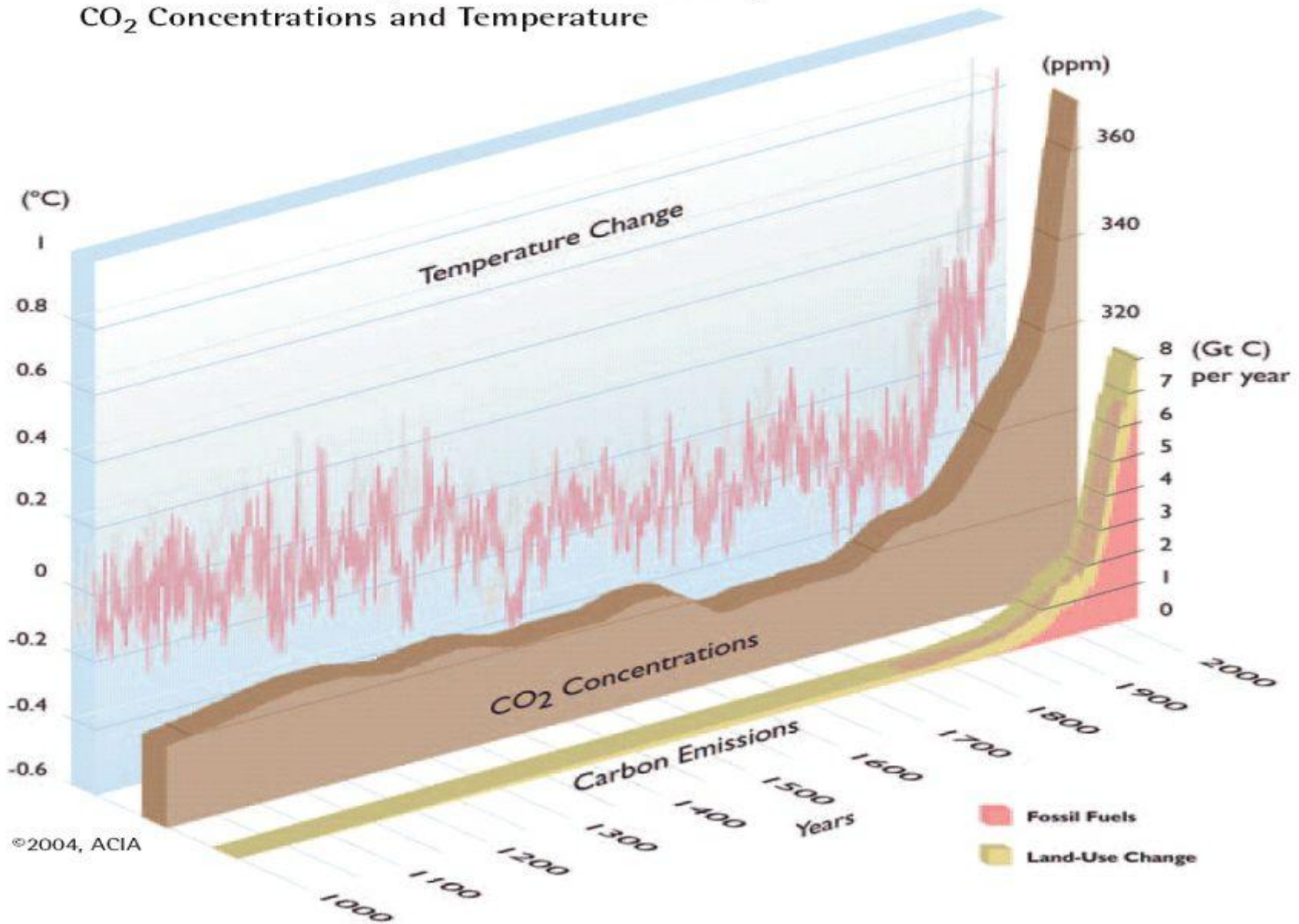


Ane T. Brunvoll
Head of Energy Department, Bellona

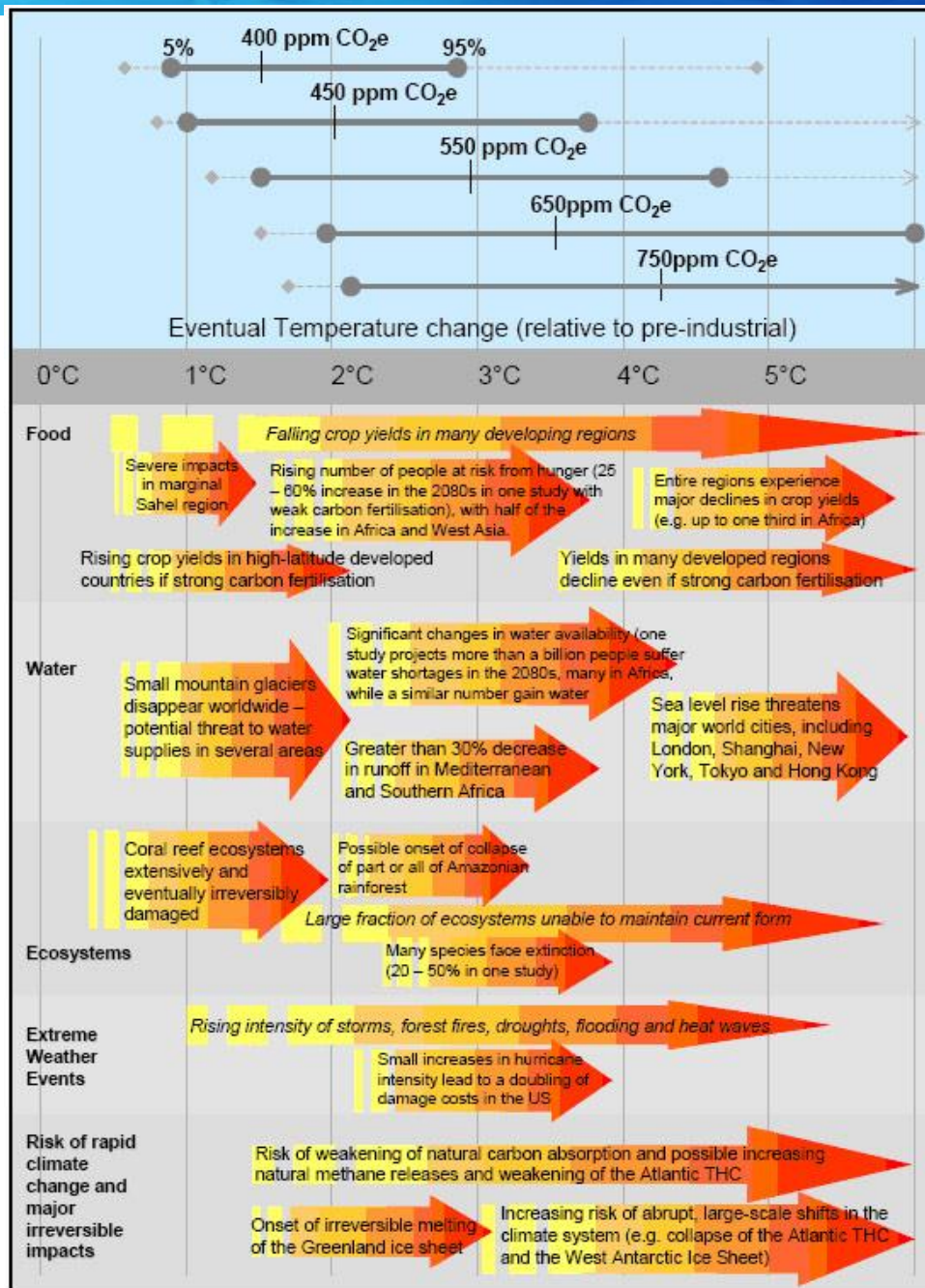
Policy Frameworks and Incentive Mechanisms for Renewable Energy



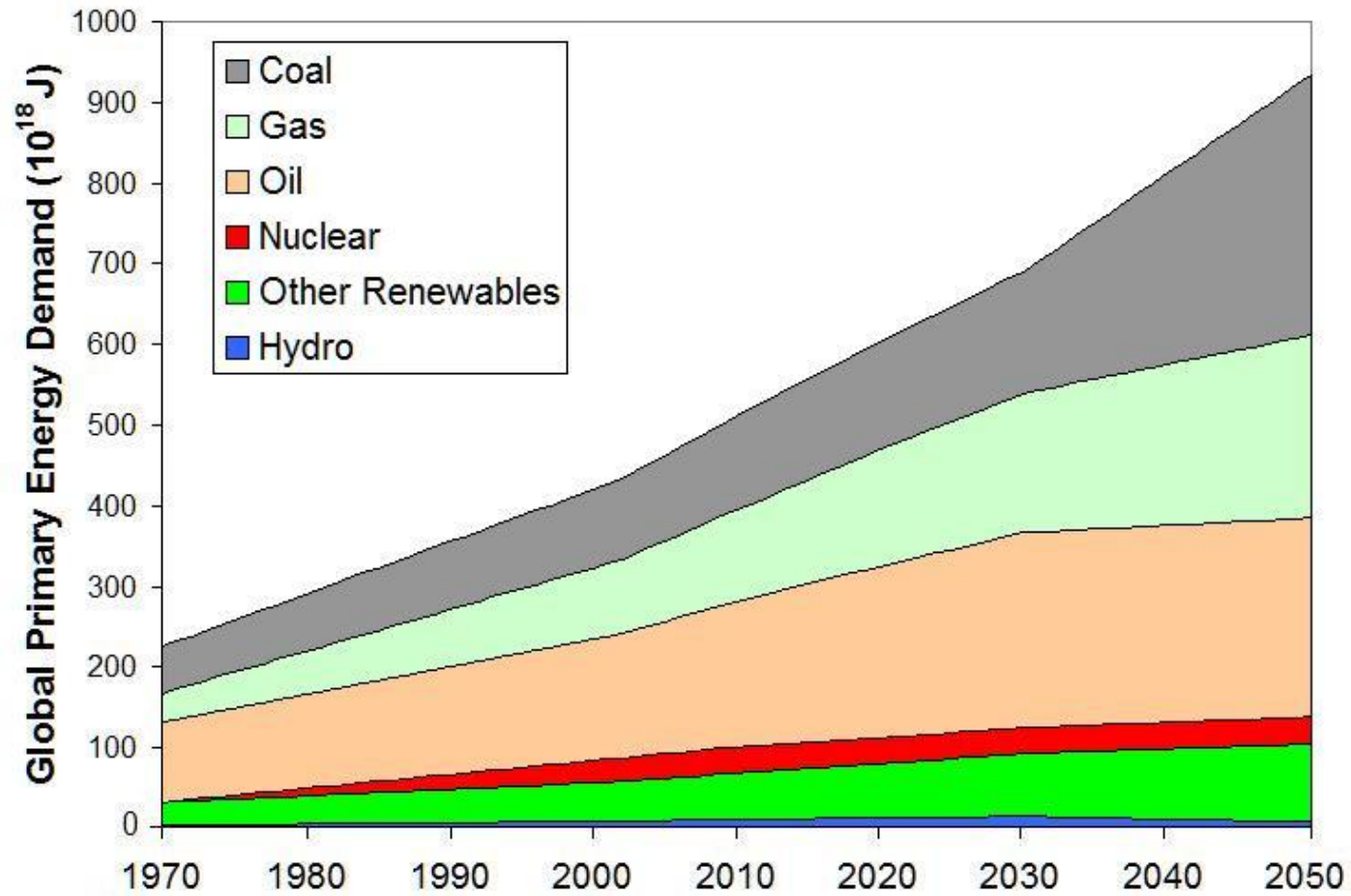
1000 Years of Changes in Carbon Emissions, CO₂ Concentrations and Temperature



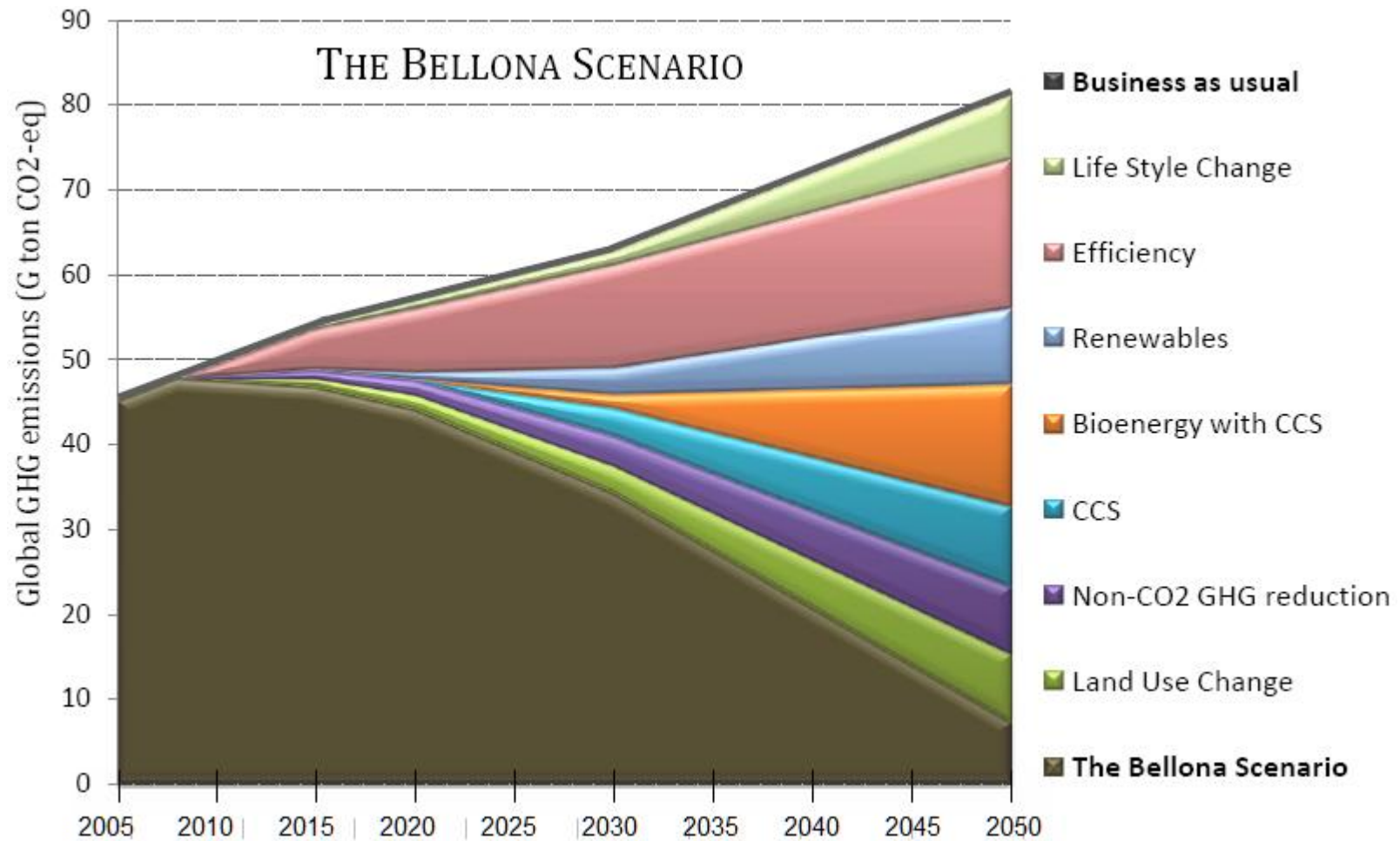
©2004, ACIA



Global Energy Demand



How to Combat Global Warming



Wind power, Biomass and CCS

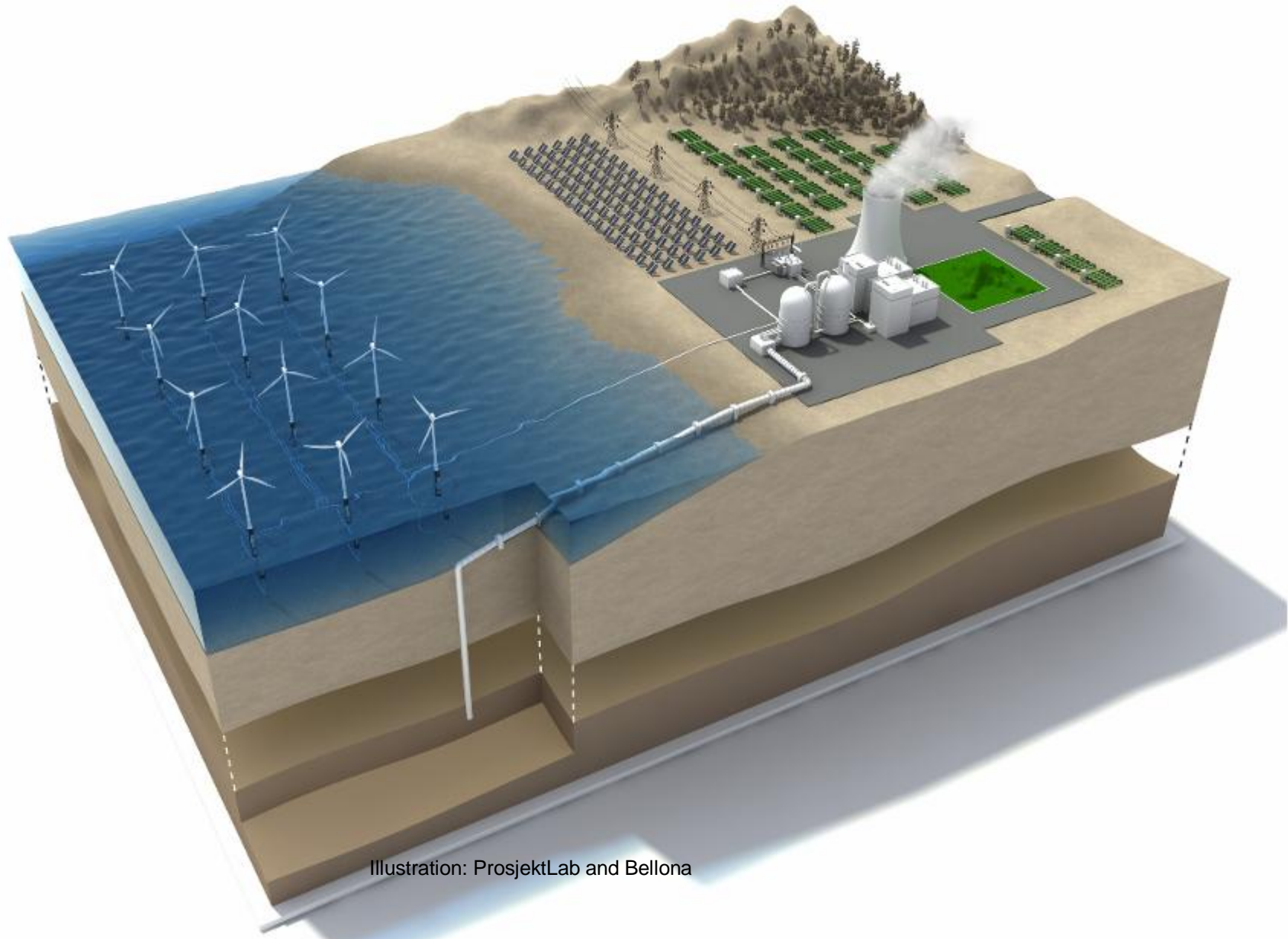


Illustration: ProsjektLab and Bellona

Pluss-energy house

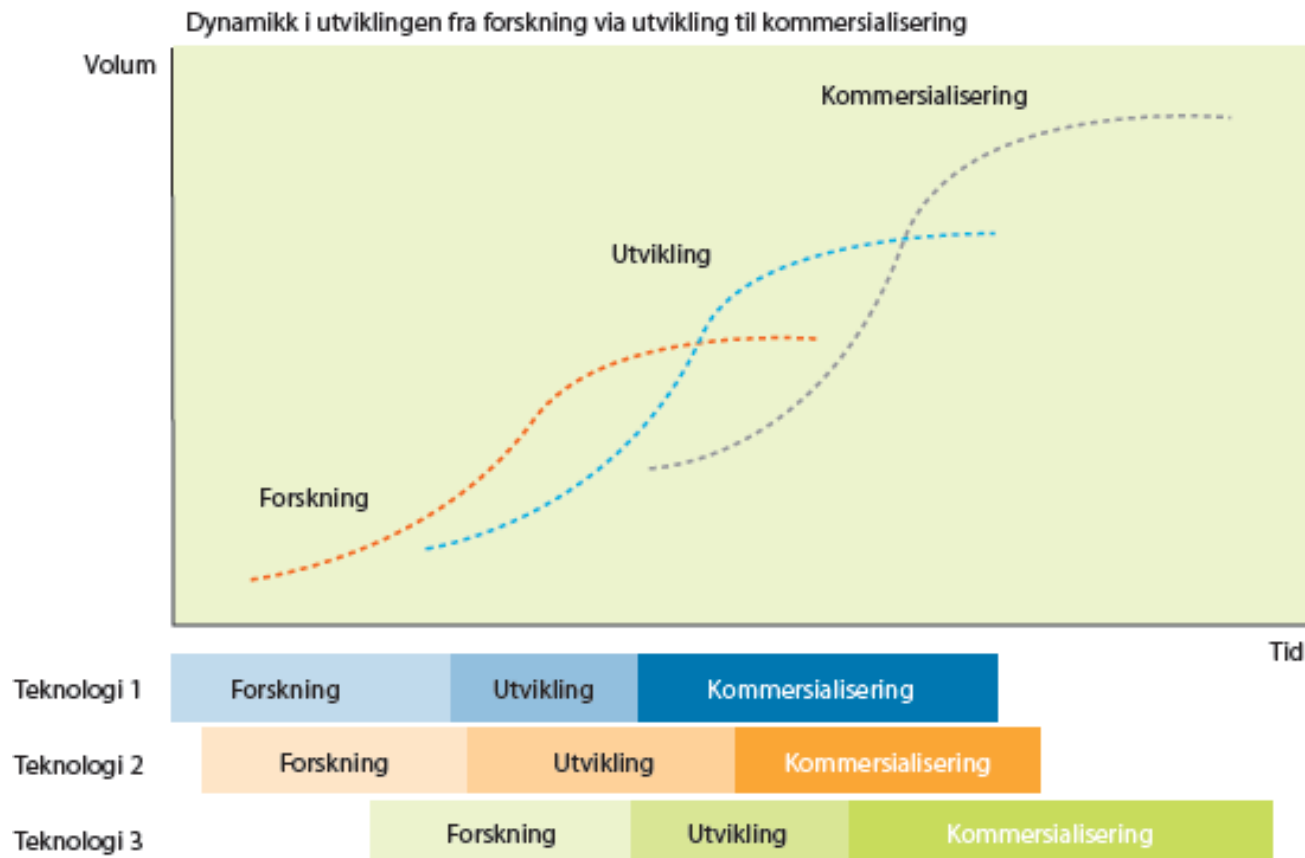


Centralized and decentralized energy supply

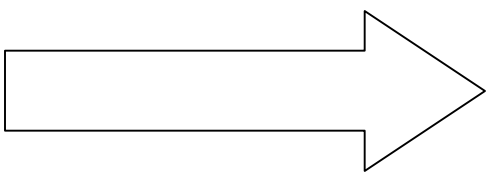


. Illustrasjon: Solarnor

Push and pull of technology development



Ulike faser fordrer ulik ressursbruk, noe som må reflekteres både i de offentlige ressursene som settes av og næringslivets egne prioriteringer.



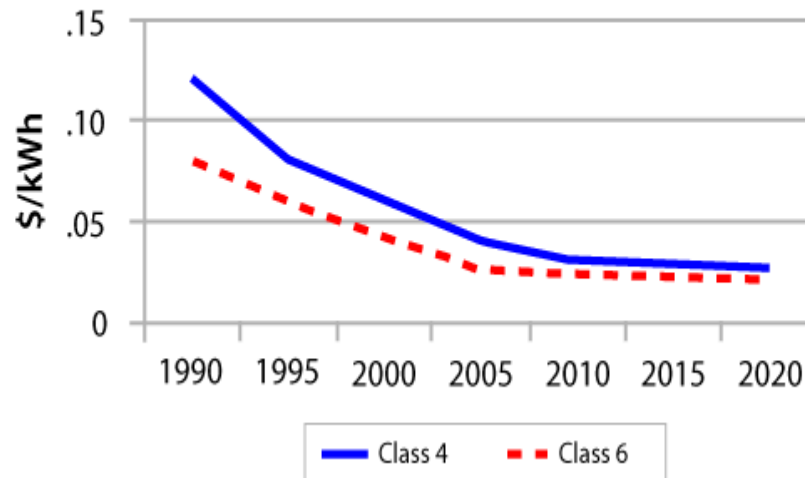
1987:
47.000 kr
7000 g

2006:
500 kr
100g

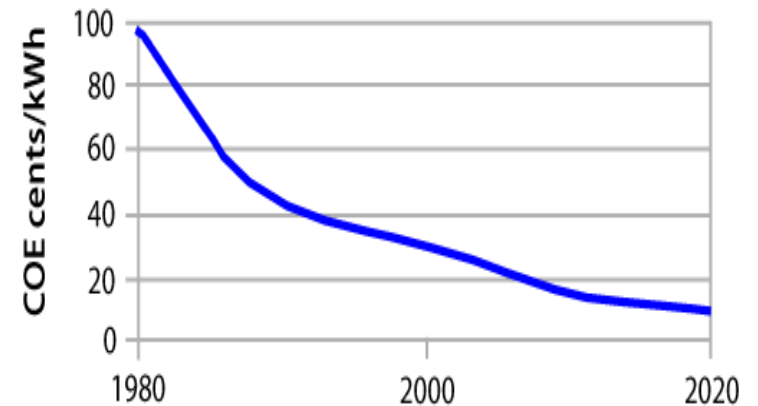
Criteria for good incentive schemes

- Efficient and measurable
- Long term and cost efficient
- International founded à global contribution
- Technology driven incentives
- Use the existing economical system
- Not excluding alternative technology

Wind Cost of Energy

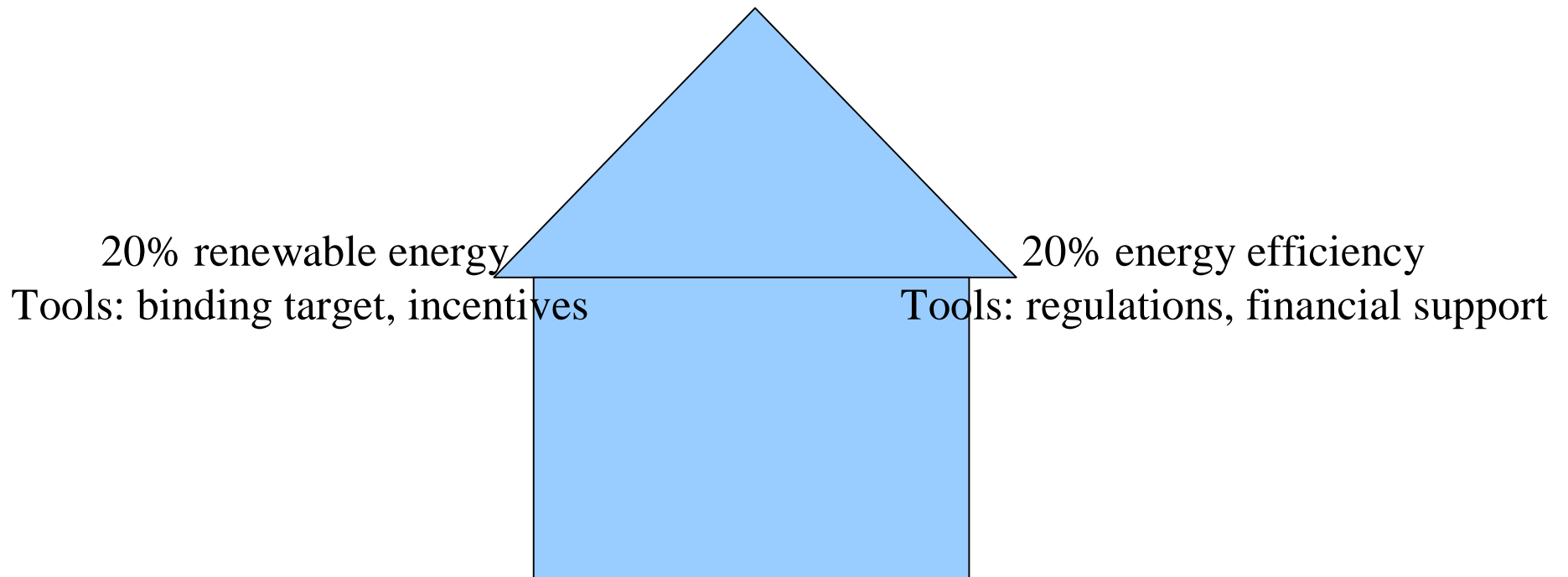


PV Cost of Energy



EU 20-20-20

20% reduction of emissions
Tools: carbon-price, emission targets





Renewable Energy Roadmap

- Increase share of renewables in EU energy mix to 20% by 2020;
- Minimum 10% biofuels in each Member State.
- Binding overall renewables target for each Member State;
- Member State National Action Plans, setting share of electricity, heating & cooling and biofuels and policy measures;

Feed-in vs. green certificates

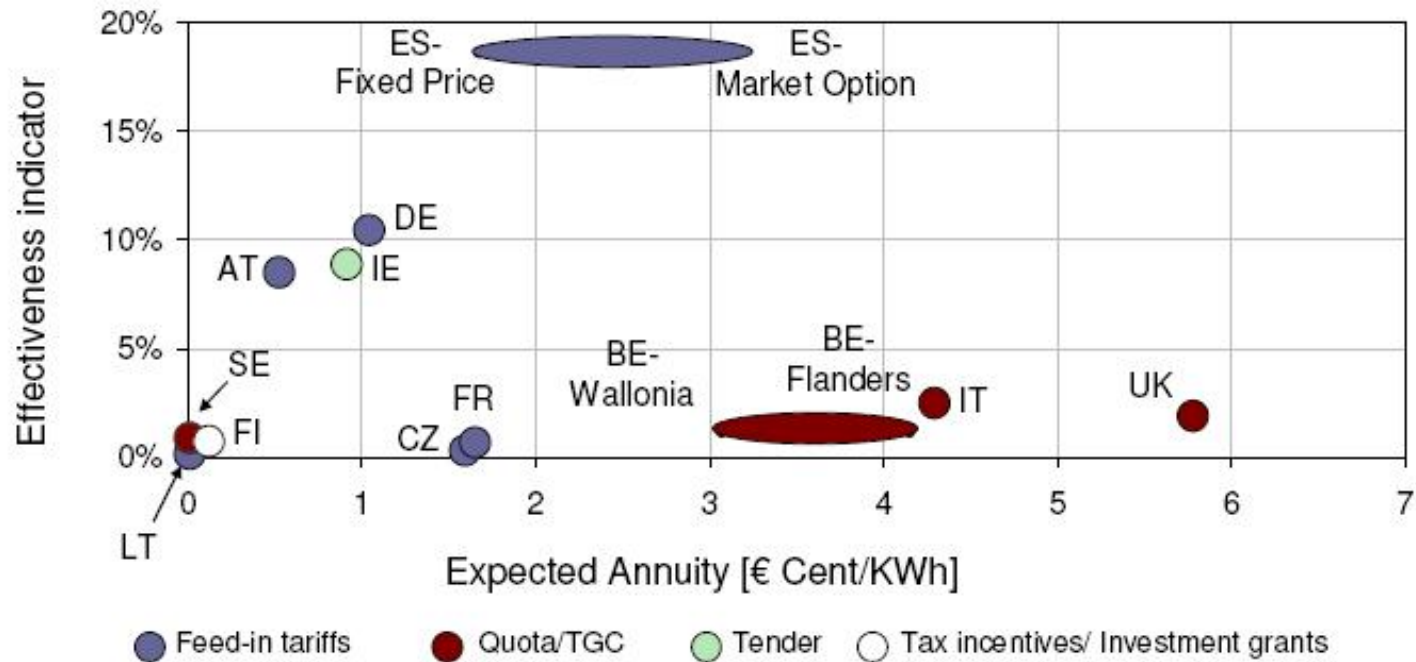


Figure 1 Historically observed efficiency of support for wind energy (COM (2005) 627)

Summary

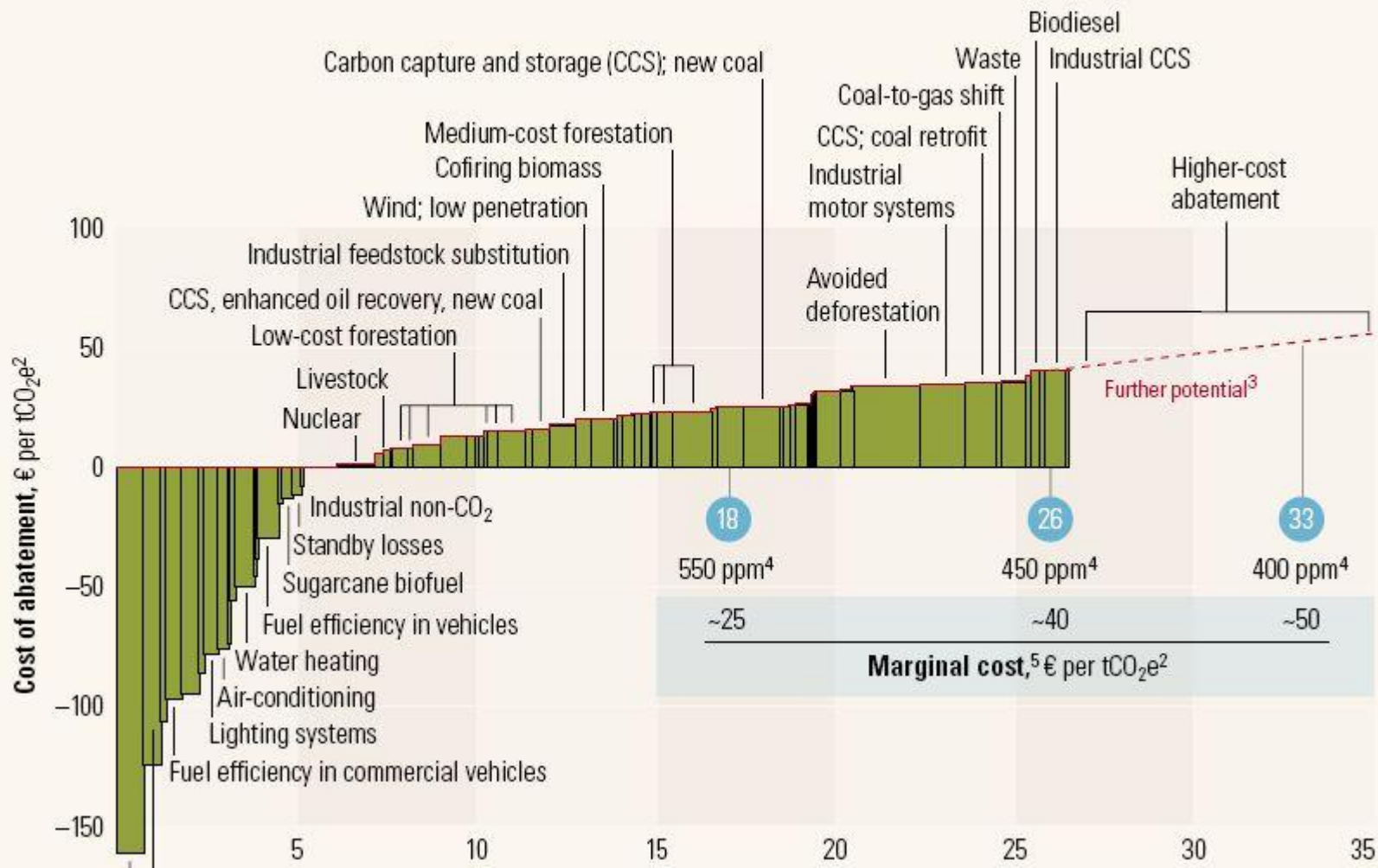
- Climate change is the world's biggest challenge ever
- Technology is not the problem..
- Governmental policy frameworks and incentive schemes must be implemented to facilitate the change towards a low-carbon world



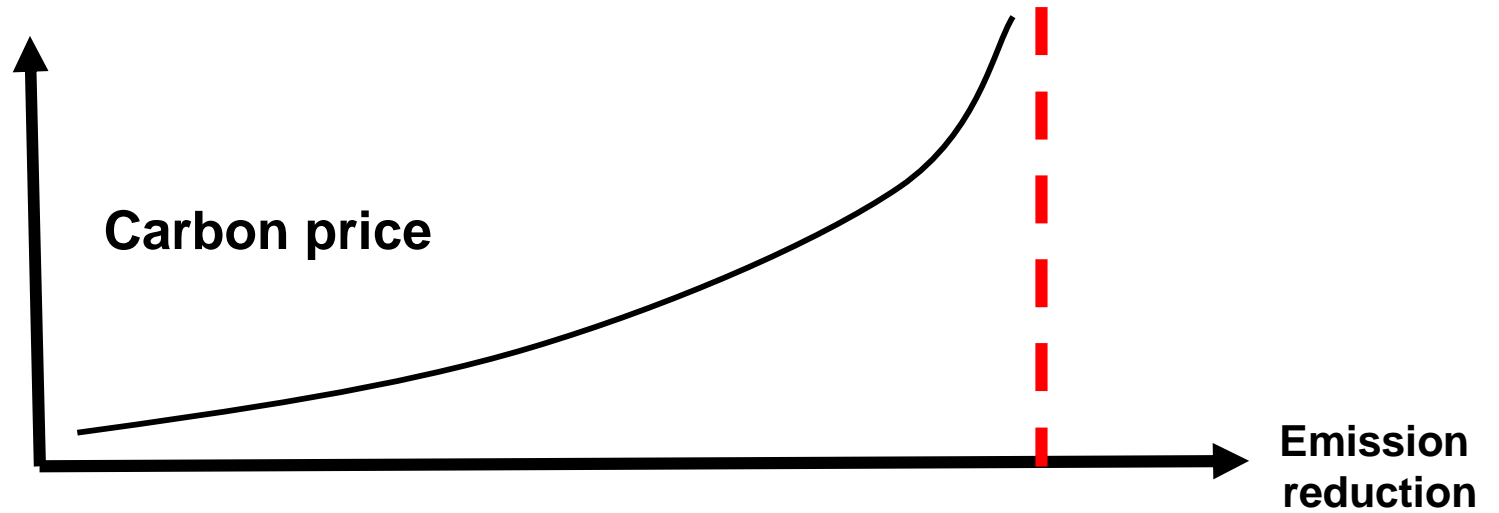
Is it wise to do the cheapest first?

Global cost curve for greenhouse gas abatement measures beyond 'business as usual'; greenhouse gases measured in GtCO₂e¹

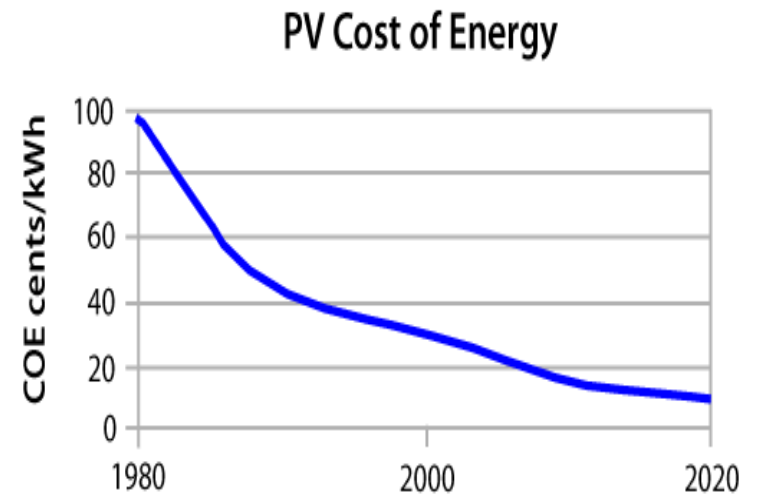
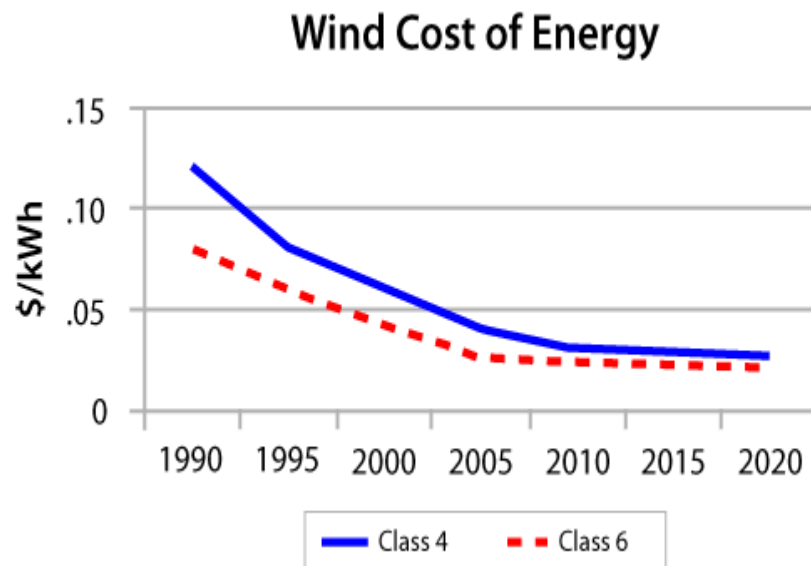
● Approximate abatement required beyond 'business as usual,' 2030



Instead of a cost-curve like this..



...We could, by learning and by technology development...



Kilde: US DOE

...get this curve for carbon...

