


Sustainable Energy Visions

European Visions

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http://www.inforse.org/europe/seminar07_samsø.htm



Global Sustainable Energy Vision 2050 by INFORSE

The world energy system:


- ❖ is beyond the environmental limits
- ❖ does not provide basic energy needs as light and healthy cooking facilities to 1/4 of the world's population
- ❖ Environmental imperative: keep global warming to 1°C in 21. century (1.6°C above pre-industrial level)
- ❖ Social imperative: provide all with basic energy needs and allow developing countries to develop, including use of cheap energy supply



EU-27 Sustainable Energy Vision

The EU leaders have recognized:

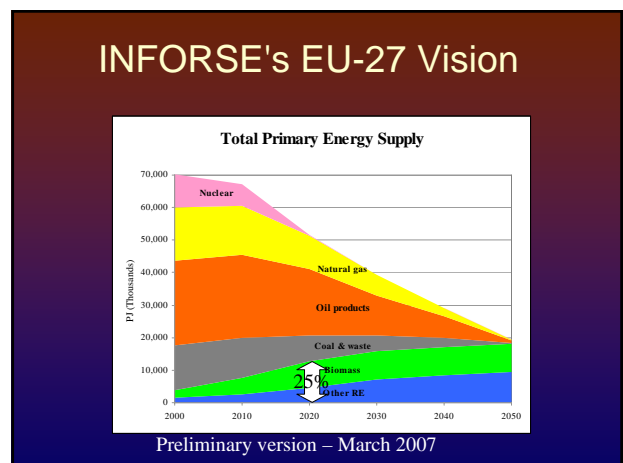
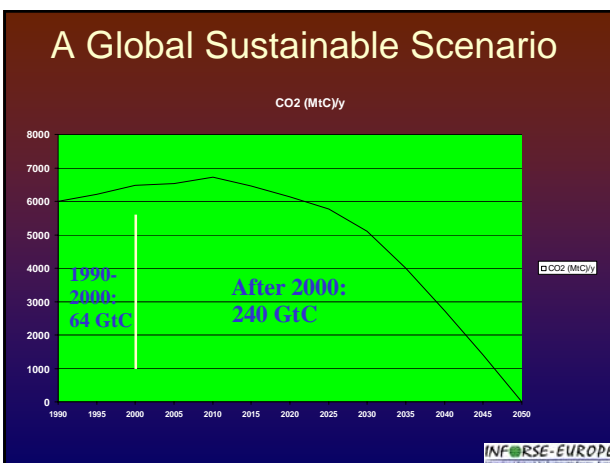
- ❖ We must limit global warming to 2°C above pre-industrial level
- ❖ EU must take the lead

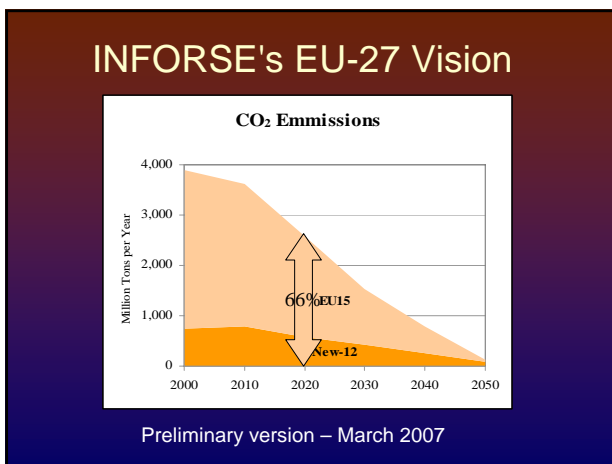
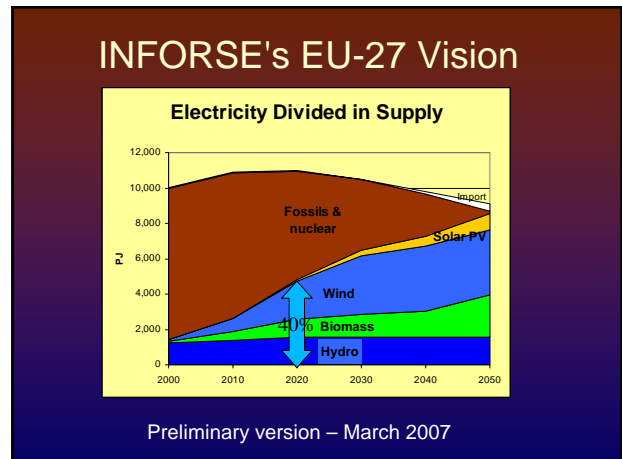
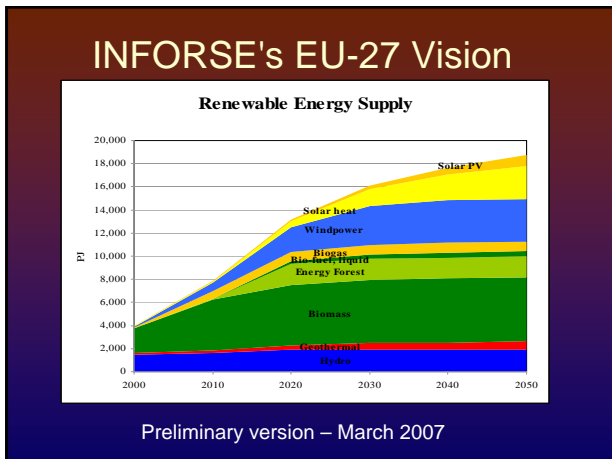


EU Policies for Energy

- ❖ Limit global warming to 2°C above pre-industrial
- ❖ Reduce CO₂ 8% by 2010 (Kyoto) and 20-30% by 2020
- ❖ Increase energy efficiency 20% 2005-2020 with equipment standards, national plans, improvements of buildings, etc.
- ❖ 12% Renewables by 2010 (White Paper) and 20% by 2020

EU Prime ministers, March 2007





Develop energy balances for 2010, 2020, 2030, 2040 and 2050

Year	Final Energy	Electricity	Heat	Transport	Other
2000	10,000 EJ	2,000 EJ	7,000 EJ	1,000 EJ	0 EJ
2010	10,000 EJ	3,000 EJ	6,000 EJ	1,000 EJ	0 EJ
2020	10,000 EJ	4,000 EJ	5,000 EJ	1,000 EJ	0 EJ
2030	10,000 EJ	5,000 EJ	4,000 EJ	1,000 EJ	0 EJ
2040	10,000 EJ	6,000 EJ	3,000 EJ	1,000 EJ	0 EJ
2050	10,000 EJ	7,000 EJ	2,000 EJ	1,000 EJ	0 EJ

Energy Demand

- Most energy consuming equipment will be replaced many times before 2050: new generations of equipment should maximize efficiency. Technology learning drives prices down.
- One exception is houses. In EU houses could use only 1/7 of today's heat demand in 2050. For the vision is proposed 1.7% p.a. specific reduction leading to 57% reduction 2000 – 2050.
- For transport is expected increase in conversion efficiency from today's 15-20% to 50%, and re-gain of "break energy": factor 4 efficiency increase
- Energy service demand will increase, 0-100%
- 33% in car use in EU-15, but + 100% in Lithuania

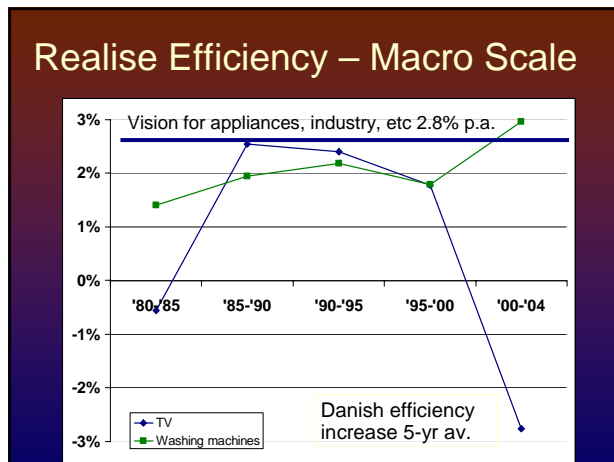
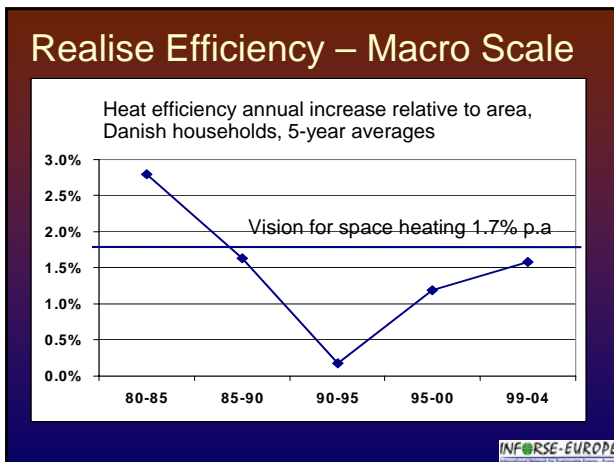
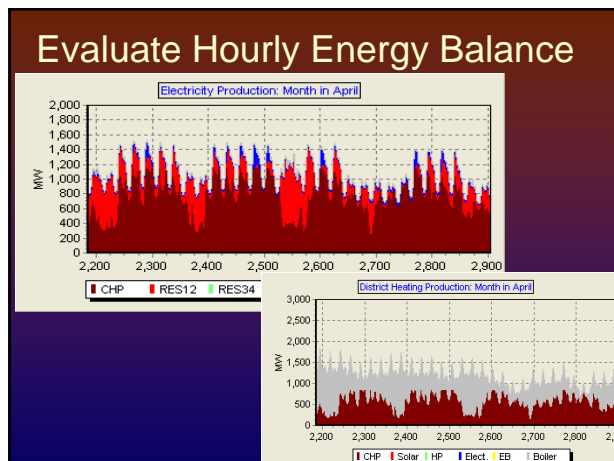
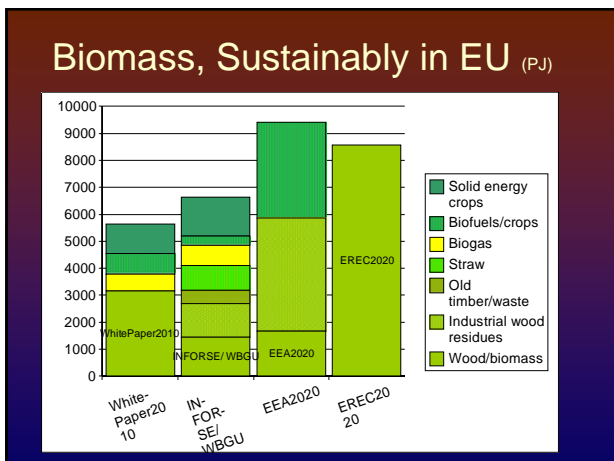
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EU Energy Supply

Wind: Growth to 70,000 MW in 2010 (current trend), 220,000 MW in 2020 and 375,000 MW in 2040 (up to 15,000 MW/year), now 6000 MW/year),
 ¼ expected offshore. This is 20-30% higher than EWEA/EREC forecasts for 2020.

Solar: PV market has reached the critical 500 MWp/year globally, and grows > 25% pr. year

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Thank you

<http://www.inforse.org/europe/Vision2050.htm>