Forskning og udvikling i almindelighed og drivkraften i særdeleshed

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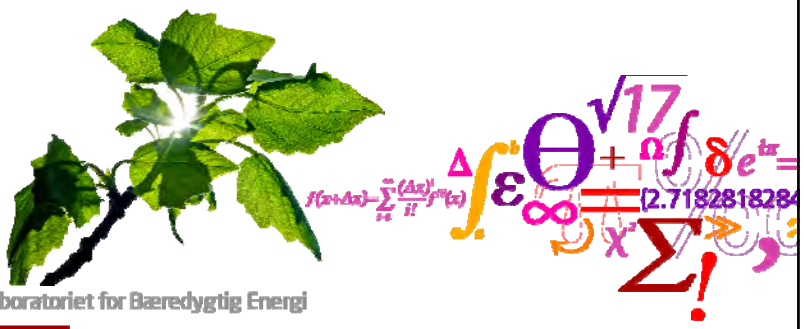
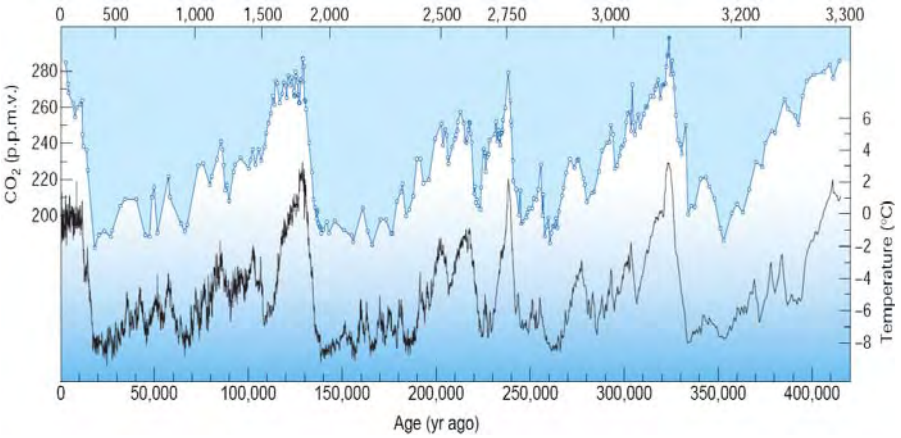


Risø DTU
Nationallaboratoriet for Bæredygtig Energi

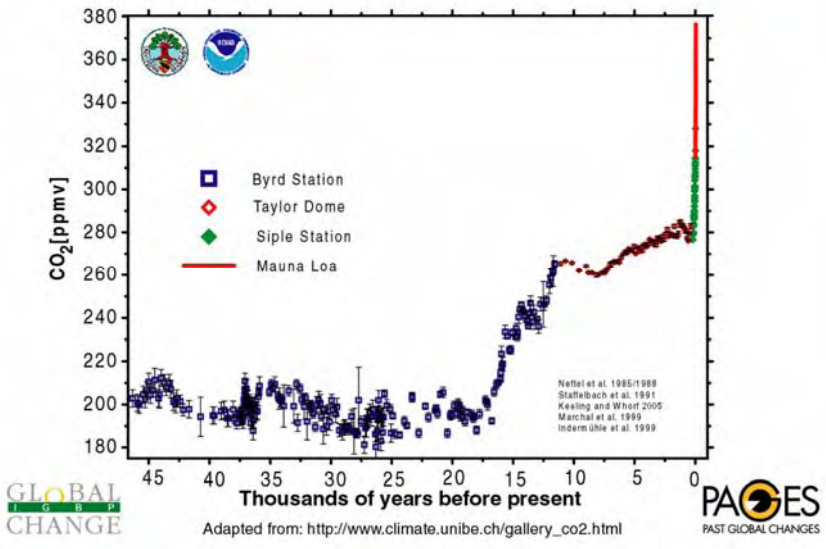
Nysgerrighed

CO_2 koncentration og temperatur de sidste 400.000 år



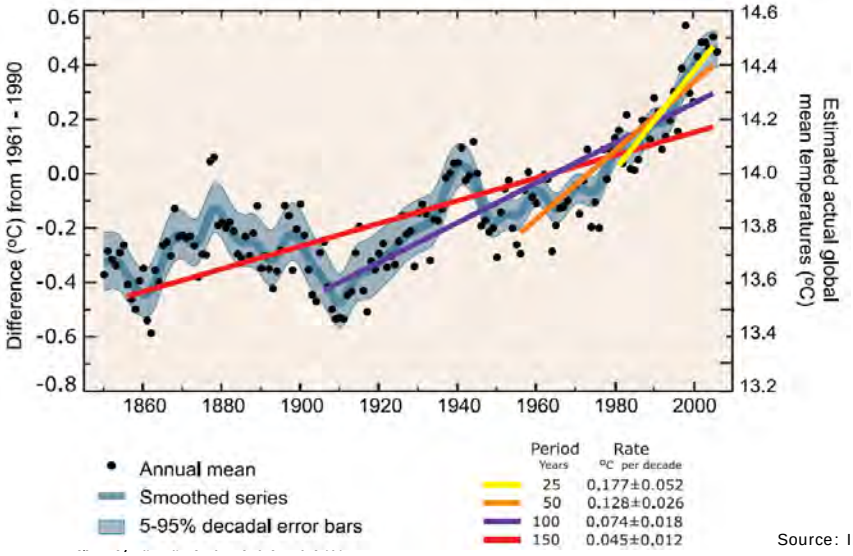
Source: Klump, Nature 419, 200

CO_2 koncentration de sidste 45.000 år



Adapted from: http://www.climate.unibe.ch/gallery_co2.html

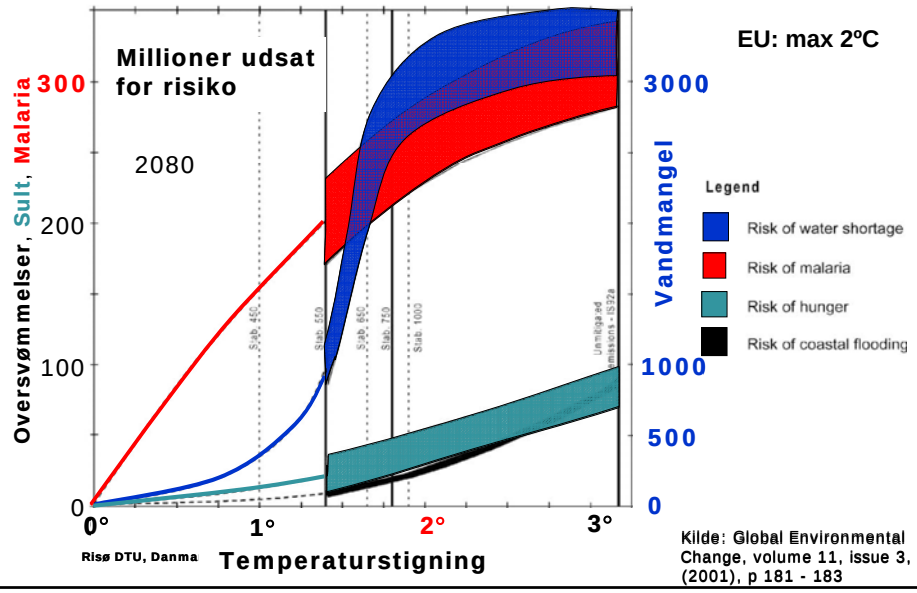
Stigninger i temperatur



Source: IPCC

Indsigt

Højere temperatur har store konsekvenser

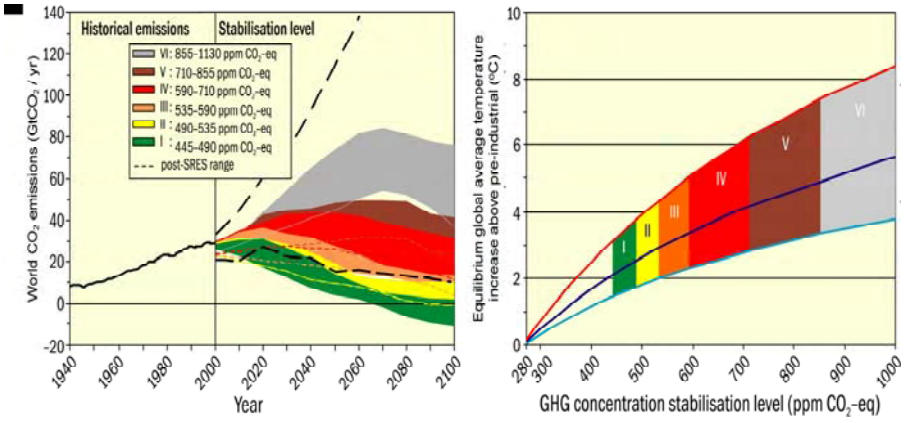


Risø DTU, Danma

Kilde: Global Environmental Change, volume 11, issue 3, (2001), p 181 - 183

CO_2 emission, koncentration og temperatur

CO_2 emissions and equilibrium temperature increases for a range of stabilisation levels

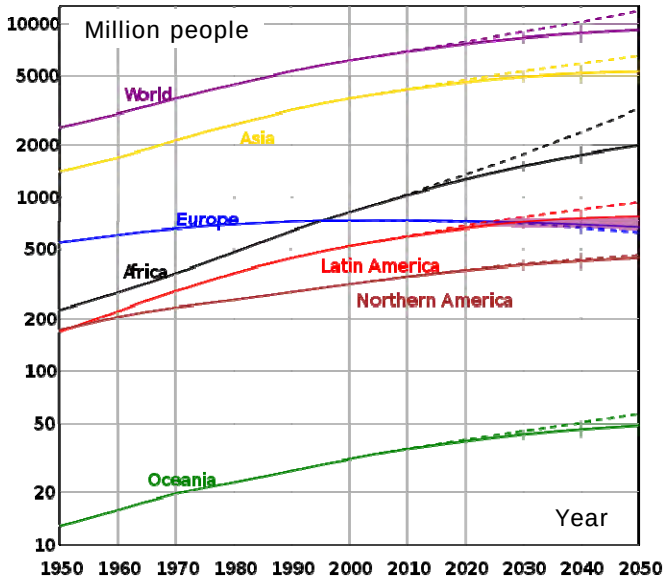


Risø DTU, Danmarks Tekniske Universitet

Source: IPCC

Befolkningstilvækst

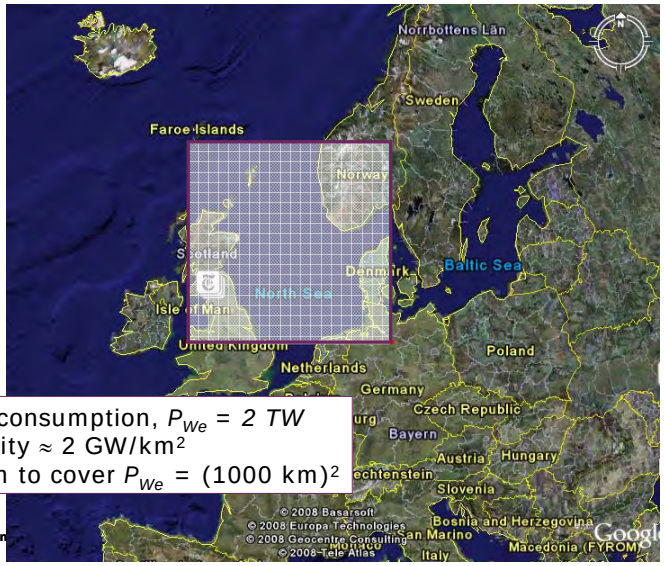
9 milliarder mennesker i 2050



http://en.wikipedia.org/wiki/Population_growth

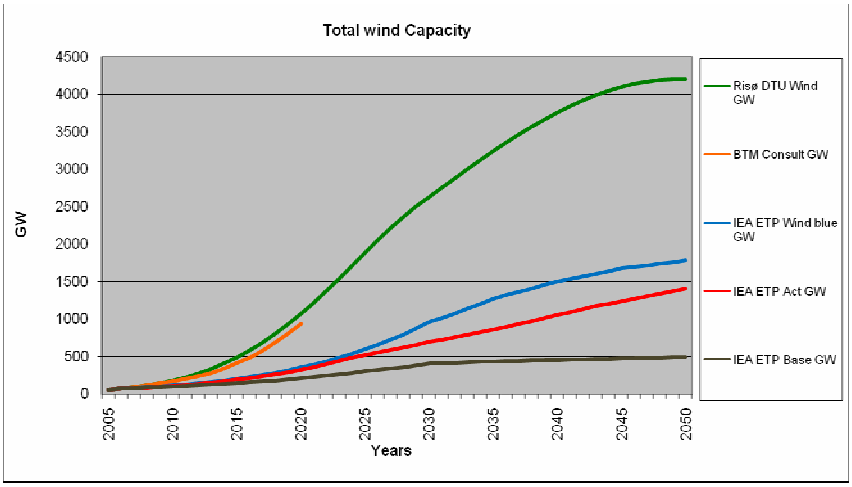
Opfindsomhed

Wind farm area to cover World electricity consumption 2008



World electricity consumption, P_{We} = *2 TW*
Wind power density ≈ 2 GW/km^2
Area of wind farm to cover P_{We} = (1000 km)^2

Wind: Scope




Replacements 2050:
IEA BLUE: 4 per hour
Risø DTU: 10 per hour
Nysted
72 x 2.3 MW
- on a nice day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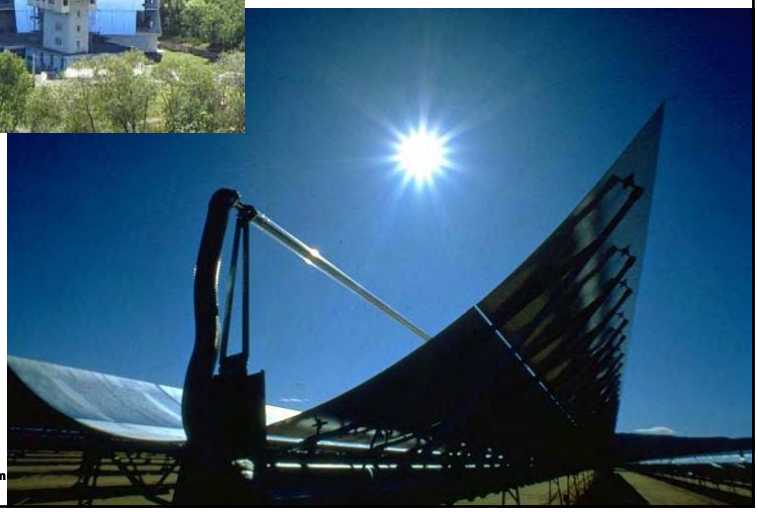
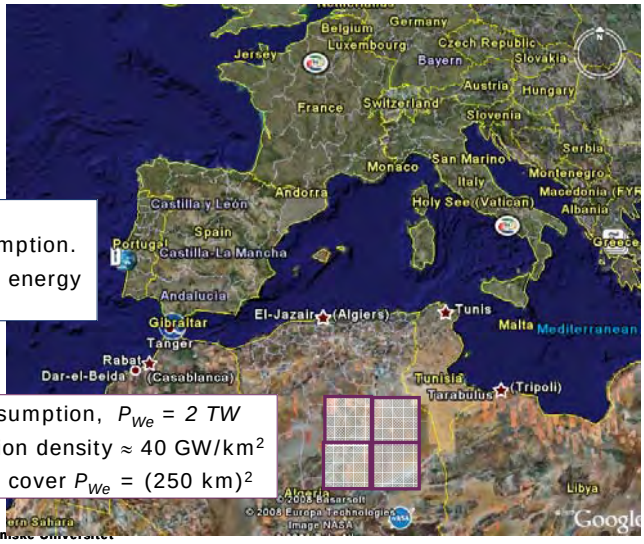


Solar farm area to cover World electricity and energy consumption 2008



1 square for world electricity consumption.

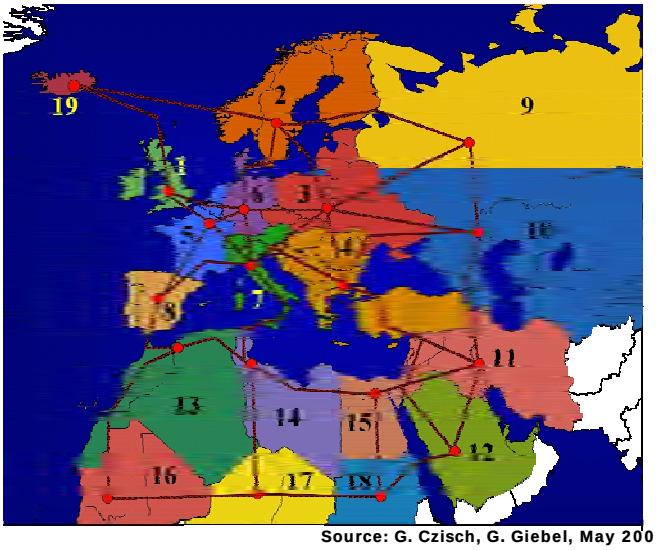
4 squares for world energy consumption

World electricity consumption, P_{We} = *2 TW*

Solar power generation density ≈ 40 GW/km^2

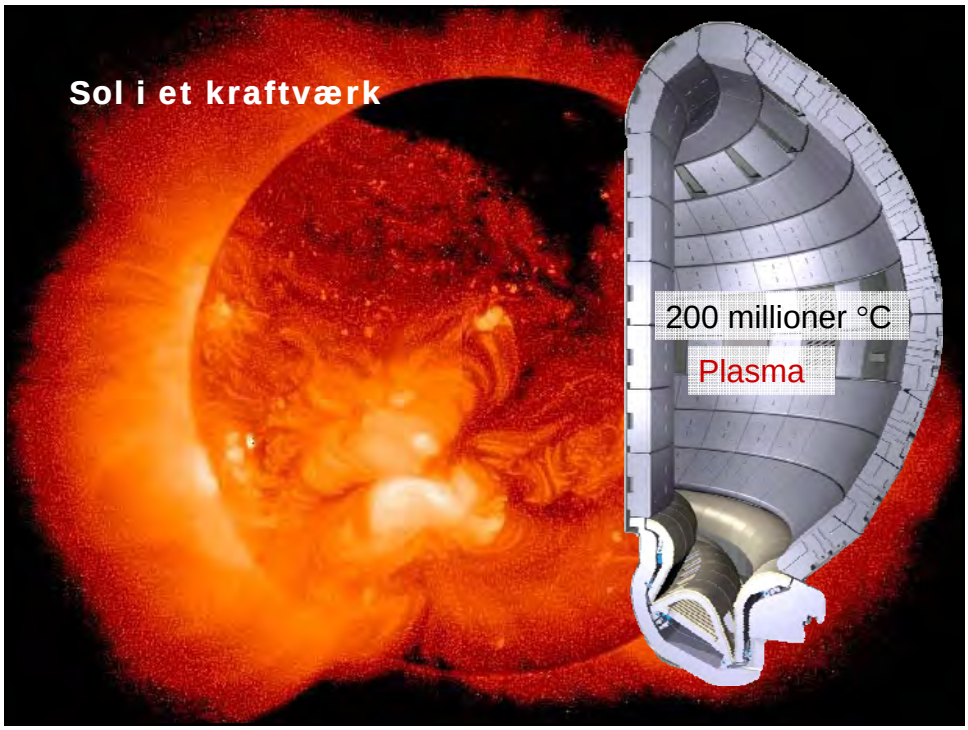
Area of solar farm to cover P_{We} = (250 km)^2

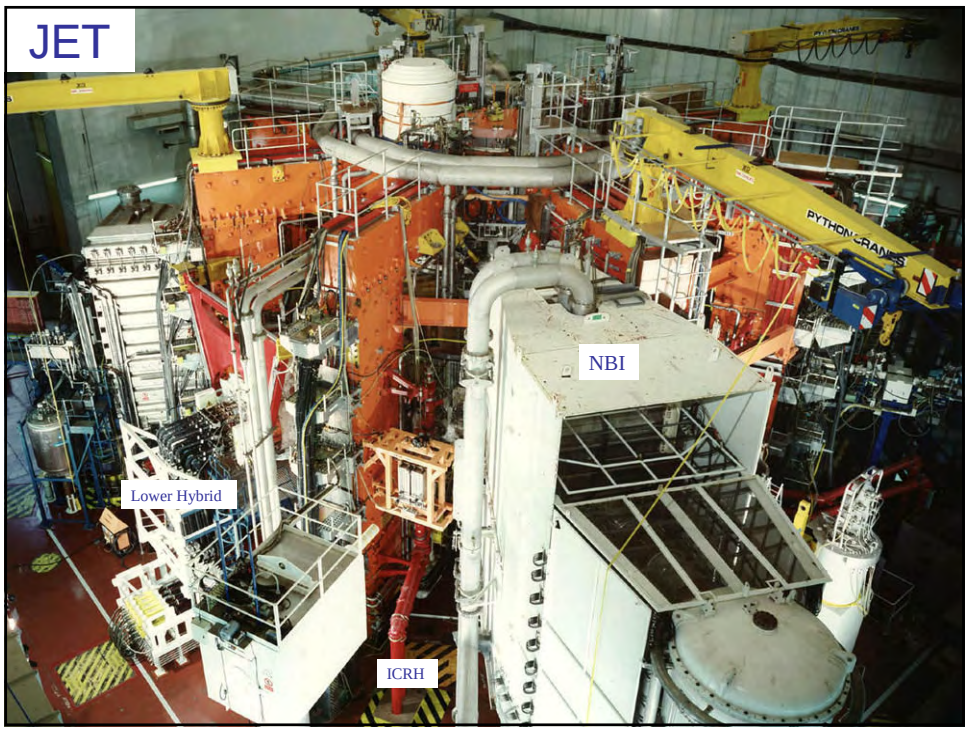
HVDC grid



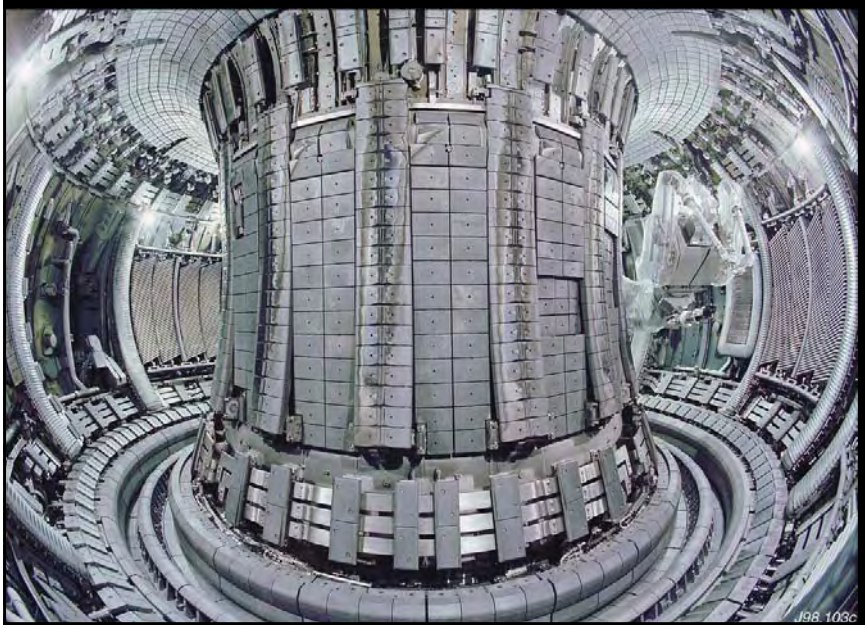
Source: G. Czisch, G. Giebel, May 2007

Integration, samspil og genbrug


Sol i et kraftværk
200 millioner °C
Plasma

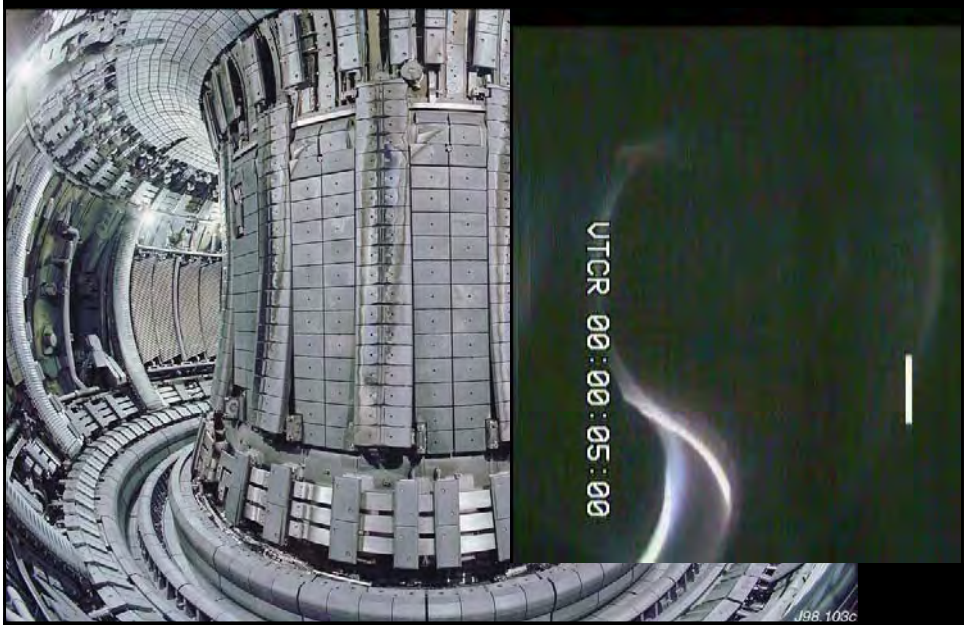

JET
NBI
Lower Hybrid
ICRH

Inside JET



Inside JET

200 million °C



Mission

DTU

Nysgerrighed
Indsigt
Opfindsomhed
Mission

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