

Achieving 2°C Climate Stabilisation: benefits and costs

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Growth in GDP relates to increasing productivity: is it good or bad?

1. Bad, if we only use growth in GDP to keep people employed.
 - in that case the best answer is to reduce working hours and redistribute work
2. Good, if growth potentials in GDP is invested in green technology making the production system 'greener' by decoupling
 - if total decoupling is realized – and sustainability is achieved, there will be a 'free' choice to convert further productivity into leisure and reduced working time

How costly is fossil-free energy supply in year 2050?

1. Highest: PrinceWaterhouse 3 percent of global GDP (only 50 per cent reduction of global emission)
2. Medium: Stern-report said 2 percent of GDP each year until 2050 (the UK economy)
3. Danish Climate report said only $\frac{1}{2}$ per cent of GDP (when you take the reduced import of Gas and Oil at much higher prices into consideration)

Can society afford to invest 3 or 2 (or ½) percent of GDP in green technology?

- a. **Stupid question** – consider the alternative(s):
- b. In conventional ‘business as usual scenarios’ GDP is projected to increase with 100 per cent by the year 2050 (2 per cent yearly growth in productivity for 35 years) – hence potential GDP (and potential private consumption) has doubled due to assumed continued productivity gains
- c. **Hypocrisy** - in this ‘official’ scenarios, where sustainable development is established, private consumption will ‘only’ have grown by 97per cent!

How can it be so cheap?

- Each year from year 2014, 3 percent of GDP is invested in research, durable power stations, energy savings and conversion of transport systems (into electricity and hydrogen)
- In the year 2050 at least 95 per cent of all energy supply could come from durable energy and energy demand has been reduced
- There are no reason to expect potential productivity gains to have been reduced.
- Hence, at year 2050 the use of energy is at a sustainable form without stopping the world's potential grow – but it does not have to grow!
- People in the rich part of the world get more satisfied with less GDP/capita, cf. Tim Jackson, *Prosperity without growth*' Earthscan, 2010.

Hence, the 'only' problem left is

1. not a technical one
2. not an economic one
3. But, a tough one:

To convince politicians that the coal-, oil-
and gaz-lobby is entirely wrong