

Kiel Institute for the World Economy

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„Long-Term Challenges of Climate Change to the Global Economy“

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Long-term Challenges of Climate Change to the Global Economy

The new report by the IPCC has once more shown overwhelming evidence for a man made process of global climate change. If the current trends of greenhouse gas emissions continue in the next decades dangerous climate change is almost inevitable. The world will therefore need to reduce emissions and at the same time prepare for the adaptation to those consequences of climate change that can not be avoided any more. Numerous challenges arise from this process of mitigation of and adaptation to climate change for all nations:

- The global economy needs to find ways to curb fossil fuel emissions in such a way that climate change can be limited to levels that still leave room for adaptation to the negative impacts and at the same time do not reduce economic welfare and growth such that they become politically unacceptable.
- As climate change – although with effects that vary strongly across regions – is a global phenomenon and can only be tackled through collective action, the burden of climate policies needs to be allocated in such a way that at least those countries with the majority of emissions can agree on a significant reduction of greenhouse gases.
- The efficiency of energy use differs widely between countries. Different levels of technological development, different energy policies, and different incentives for the adaptation of advanced technologies provide the opportunity to reduce energy use without affecting economic growth. Yet, the ways in which this can be achieved are not well understood so far.
- The G8 Summit has already suggested to seriously considering a reduction of emissions by 50 percent relative to today's levels. In the long-run the global economy will need to practically bring emissions to a halt. That means the non-renewable fossil fuel driven world of the 20th century must be replaced by a renewable energy based economic system during the 21st century.
- Nevertheless, climate change will even under strong climate policy actions deprive some regions (especially in the tropics) of a significant part of their resource base. This will require appropriate help by the countries less affected.