Feasibility and benefits of the 1.5°C limit

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“Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels (...)”

What are the benefits of limiting warming to 1.5°C?

What is the current state of science in this range of issues?

How much lower do we need to get in a 1.5°C world compared to 2°C?

Is 1.5°C feasible?
Where do we stand?

- Paris-related pledges could trigger a strong deviation from Baseline at the aggregate global level in terms of long-term warming
- ... BUT: widening gap between what is needed and where the actual current emissions reduction pledges lead us for the next decades
Feasibility of 2 and 1.5°C and emissions thresholds

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<thead>
<tr>
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<th>2°C</th>
<th>1.5°C</th>
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<tbody>
<tr>
<td>Global GHG emissions need to reach zero</td>
<td>2080-2100</td>
<td>2060-2080</td>
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<tr>
<td>Global energy and industry CO2 emissions need reach zero</td>
<td>2060-2075</td>
<td>2045-2075</td>
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- Both are **economically and technically feasible**
- 1.5°C means same technologies as in 2°C, but deployment needs to happen sooner and faster!
- For both scenarios the same economics apply: the earlier one starts the cheaper it is thus there is a strong economic incentive to not postpone action!
Alignment with 1.5°C

Current alignment of country climate policies with the Paris Agreement & the degree to which benefits are being experienced.

- Higher alignment
- Moderate alignment
- Lower alignment
- Not assessed
What are the benefits of limiting warming to 1.5°C?

• Climate policies support economic growth and poverty-reduction strategies:
  ▪ Most cost-benefit analysis fail to factor in co-benefits of climate policies: savings associated with welfare risks will **offset a large portion of the cost** of stronger climate policies:
    - **Reduced climate impacts**
    - **Reduced impacts costs**
    - **Cleaner air**
    - **More energy security**
    - **Stable economies**
    - **Greater energy access**
    - **Better employment**
    - **Wider economic benefits**
Let’s look into one specific aspect of the transition needed: the phase-out of coal!

Expansion of coal is not consistent with the remaining ”carbon budget”
What are the alternatives? Renewables!

- High renewable energy potential for virtually all countries
- Generally higher than total energy consumption, with plenty space to grow
- Increases energy security as countries would exploit their own energy wealth at an affordable price

Source: IRENA 2016
Economic benefits of wider action

- International momentum to mobilize climate finance and investments in renewables in developing countries, achieve global economies of scale, technological progress and technology transfer ➔ lower the cost of renewable energy technologies for all!
Improving trade balance and economic stability

• Fossil fuels imports represent large dependency for many countries

• Expanding renewables would reduce this dependency and strongly reduce vulnerability of national economies to international price volatility
Health Co-benefits – reducing air pollution

WHO: 3 million premature deaths just in 2012 due to outdoor air pollution – 1.5°C compatible climate action eliminates this risk

- 98% of cities in low- and middle-income countries do not meet WHO air quality guidelines
- Savings associated with reduced mortality will offset a large portion of the cost of stronger climate policies.
Key messages

• There are no technological, economic and scientific barriers to get to 1.5°C – **1.5°C is feasible!**

• Ambitious and effective climate policies in line with 1.5°C will lead to wide benefits:
  
  ✓ Renewable energy sources, notably solar and wind are abundant worldwide and currently remain far from being exploited to their full potential.
  ✓ Lead to more economic stability
  ✓ Energy security
  ✓ Mitigate costs associated with reduced mortality caused by air pollution will offset a large portion of the cost of stronger climate policies.
Additional information about climate impacts and feasibility of the 1.5°C limit on our website...

1.5°C temperature limit - key facts

Since 2009 over a hundred Small Island Developing States, Least Developed Countries and many others have been calling for limiting global temperature rise to below 1.5°C above pre-industrial levels. This page is an information pool for material around the below 1.5°C temperature limit. It covers these questions:
- Why 1.5°C? Science, impacts and risks.
- What will it take to limit warming below 1.5°C?
- What is needed in the Paris Agreement for 1.5°C?

How is 1.5°C tracking in the climate negotiations?

Why 1.5°C? Science, impacts and risks. 

This fact sheet provides key points on risks to ecosystems, food security and sustainable development associated with 1.5°C warming. It also provides responses to arguments commonly made against 1.5°C and provides the scientific evidence for each point made.

http://climateanalytics.org/hot-topics