Low climate IMPact scenarios and the Implications of required
Tight emission control Strategies

Regional implications for 2C

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COP Warsaw

The research leading to these results has received funding from the
European Community’s Seventh Framework Programme FP7/2007-2013
under grant agreement n° 282846 (LIMITS)
Key dimensions considered

<table>
<thead>
<tr>
<th>Year</th>
<th>Stringency</th>
<th>Likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>weak</td>
<td>50%</td>
</tr>
<tr>
<td>2020</td>
<td>weak</td>
<td>66%</td>
</tr>
<tr>
<td>2030</td>
<td>weak</td>
<td>66%</td>
</tr>
</tbody>
</table>

**Short term mitigation**
*(when and how much)*

- Carbon tax, no transfer
- Cap and trade, equalization of regional per capita emissions (by 2050)
- Cap and trade, equalization of regional mitigation costs (from 2025)
Regional carbon budgets 2010-2100

2C likely: 1150 GtCO2

- OECD: 321
- MAF: 124
- LAM: 28
- ASIA: 586
- REF: 98

2C as likely as not: 1570 GtCO2

- OECD: 435
- MAF: 187
- LAM: 63
- ASIA: 760
- REF: 131
## To peak or not to peak?

### Year of CO2 emissions peak

<table>
<thead>
<tr>
<th>WORLD</th>
<th>OECD</th>
<th>ASIA</th>
<th>Latin America</th>
<th>Middle East &amp; Africa</th>
<th>Reforming economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2C likely</td>
<td>2030</td>
<td>now</td>
<td>2030</td>
<td>2023</td>
<td>2030</td>
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<tr>
<td>2C as likely as not</td>
<td>2030</td>
<td>now</td>
<td>2033</td>
<td>2022</td>
<td>2035</td>
</tr>
</tbody>
</table>
It is the **relative** economy, stupid!

Regional distribution of mitigation costs, wout transfers
Sharing the burden

Carbon tax, no transfer

**Resource sharing:**
Allocation based on the equalization of regional per capita emissions by 2050

**Effort sharing:**
Allocation based on equalization of regional mitigation costs (2025 onwards)
Allocation of allowances: 2050 reductions from 2010

Resource sharing

--China: -70%
-Middle East: -50%
-EU: -76%

Effort sharing

-China: -50%
-Reduction in 2050 from 2010
-Middle East: +15%
-EU: -98%
Is ‘per capita’ fair?

Resource sharing

Still better off!
Transfers and carbon market

In both schemes, a large carbon market would be needed:

• 4 GtCO2-yr by 2030 … in every year, more than twice the CERs issued by all CDM projects to date

• 100 USD Billions-yr of transfers

• Trading positions depend on regional abatement opportunities and allocation scheme: OECD buyers, China/Russia/Middle East sellers only in the effort sharing scheme.
Conclusions

1. Between now and 2035 emissions should peak in all major economies

2. Without transfers, mitigation costs would be distributed unevenly (OECD -, DC +, EEX ++)

3. Carbon markets can alleviate these distributional concerns, but:
   
   I. An integrated, large market with significant (4GtCO2/100 USD Billions) volumes will be eventually needed
   
   II. There is no ‘right’ allocation scheme

   2C leaves us with a tight carbon budget: sharing it equitably and efficiently is the biggest challenge
LIMITS special issue

12 papers covering the Durban Platform scenarios:

- financing and investments
- 2C and energy security
- technological transitions
- fiscal policy
- ...

Already available at the project website
Scenario DataBase will be made public shortly

http://www.feem-project.net/limits/03_outreach_01_02.html
Thanks!

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