Assessing what constitutes a *fair* scale of emission reductions to be achieved by individual Annex I Parties

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Overview

- A framework to ‘Assess Comparable Effort’: ACE
- Results from relevant international studies
- Assessing Comparable Effort Interactive Support Tool: ACE-IST
- Conclusions
- Next Steps
Assessing Comparable Effort (ACE) Framework

Within the negotiations there is a need for a framework within which effort can be measured.

The concept of effort being measured in terms of the costs faced by a country in meeting a specific target is widely accepted.

However, other criteria also need to be integrated, to ensure compatibility with Article 3 of the Convention.

Initial presentation on this framework in Poznan (see UNFCCC)
Assessing Comparable Effort (ACE) Framework

The ACE framework uses a simple three step process to assess the fairness of individual countries’ targets:

1) Develops a 2020 baseline/reference scenario for emissions
2) Estimates the costs of reducing emissions below this baseline
3) Integrates relative wealth/responsibility indicators
Assessing Comparable Effort (ACE) Framework

<table>
<thead>
<tr>
<th>Emissions</th>
<th>Country A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (MT)</td>
<td>relative to 1990 (%)</td>
</tr>
<tr>
<td>84</td>
<td>+40</td>
</tr>
<tr>
<td>78</td>
<td>+30</td>
</tr>
<tr>
<td>72</td>
<td>+20</td>
</tr>
<tr>
<td>66</td>
<td>+10</td>
</tr>
<tr>
<td>60</td>
<td>0</td>
</tr>
<tr>
<td>52</td>
<td>-10</td>
</tr>
</tbody>
</table>

1: baseline/reference
2: mitigation potential
3: equity variance

“equal cost target”
“equity target”
Assessing Comparable Effort (ACE) Framework

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (MT)</th>
<th>Relative to 1990 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>52</td>
<td>-10</td>
</tr>
<tr>
<td>2000</td>
<td>60</td>
<td>+10</td>
</tr>
<tr>
<td>2010</td>
<td>72</td>
<td>+20</td>
</tr>
<tr>
<td>2020</td>
<td>84</td>
<td>+40</td>
</tr>
</tbody>
</table>

- **Historic emissions**
- **BAU/baseline projections**

1: *baseline/reference*
Assessing Comparable Effort (ACE) Framework

2: Mitigation potential in 2020

Price of carbon (Euro)

Country A

Emission reductions (MtCO₂-e)
Assessing Comparable Effort (ACE) Framework

2: Mitigation potential in 2020

- Price of carbon (Euro)
- Emission reductions (MtCO$_2$-e)
- Mitigation potential in country A
- Target
- Total cost as % of GDP
- Purchase credits

Country A
Assessing Comparable Effort (ACE) Framework

3: Equity Variance

% impact on GDP

-0.30
-0.25
-0.20
-0.15
-0.10
-0.05

low

high

GDP/capita

GHG/capita

Equal cost target

Equity target
Assessing Comparable Effort (ACE) Framework

3: *Equity Variance*

![Graph showing the impact on GDP for different levels of GHG/capita and GDP/capita.](image)

- Pay more
- Pay less

% impact on GDP

-0.30 -0.25 -0.20 -0.15 -0.10 -0.05

low high

GDP/capita GHG/capita

- Equal cost target
- Equity target
Results show a large spread of targets relative to 1990 emissions:

- USA = +2%
- EU = -30%
- AUS/NZ = +19%
- JAPAN = -15%
- CANADA = -17%
- EU = -30%
- Russia = -40%
- Ukraine = -55%
International Institute for Applied Systems Analysis

http://gains.iiasa.ac.at/gains/index.html
Again, results show a large spread of targets relative to 1990 emissions
Assessing Comparable Effort
Interactive Support Tool
(ACE – IST)
ACE-IST: Baseline
ACE-IST: Marginal Abatement Cost Curves
ACE-IST: Total Abatement Cost relative to GDP
ACE-IST: Results

<table>
<thead>
<tr>
<th>PARTY</th>
<th>2020 Target</th>
<th>percapita</th>
<th>% GDP</th>
<th>2015 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-10%</td>
<td>-30%</td>
<td>-0.54%</td>
<td>-0%</td>
</tr>
<tr>
<td>B</td>
<td>22%</td>
<td>-11%</td>
<td>-0.51%</td>
<td>22%</td>
</tr>
<tr>
<td>C</td>
<td>33%</td>
<td>-9%</td>
<td>-0.07%</td>
<td>31%</td>
</tr>
<tr>
<td>D</td>
<td>45%</td>
<td>-4%</td>
<td>-0.03%</td>
<td>39%</td>
</tr>
<tr>
<td>E</td>
<td>-48%</td>
<td>-38%</td>
<td>-0.55%</td>
<td>-37%</td>
</tr>
<tr>
<td>F</td>
<td>-32%</td>
<td>-24%</td>
<td>-0.52%</td>
<td>-26%</td>
</tr>
<tr>
<td>G</td>
<td>-27%</td>
<td>-23%</td>
<td>-0.14%</td>
<td>-21%</td>
</tr>
<tr>
<td>H</td>
<td>-9%</td>
<td>-10%</td>
<td>-0.10%</td>
<td>-9%</td>
</tr>
<tr>
<td>I</td>
<td>-61%</td>
<td>-32%</td>
<td>-0.04%</td>
<td>-57%</td>
</tr>
<tr>
<td>J</td>
<td>-57%</td>
<td>-10%</td>
<td>-0.01%</td>
<td>-56%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-25%</td>
<td></td>
<td>-0.01%</td>
<td>-20%</td>
</tr>
</tbody>
</table>
ACE-IST: Results
Assessing Comparable Effort (ACE) Framework

Conclusions

1) Baseline emissions, relative to the base year, are a key input into determining a fair target: *higher population and economic growth = less reductions relative to historic base year*

2) The structure of an economy and domestic emissions profile are also important: *more efficient = less reductions*

3) Capability and responsibility need to also be taken into account: *higher GHG or GDP/capita = more reductions*
ACE-IST: Next Steps

Hope to present results from ACE-IST in June

Welcome any data on:

i) 2020 baseline emission projections

ii) 2020 MACCs

iii) 2020 GDP projections

Please send this data to:

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daniel.twaddle@mfe.govt.nz
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