Chapter 3 - Appendix A: Methodology of national and global studies

Appendix A gives an overview of the national and global studies that are used for the calculation of the emission projections resulting from the current policies scenario and NDC scenario.

Table A.1: Overview of global NDC studies included in the assessment (in alphabetical order).

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sector and gas coverage</th>
<th>Cut-Off date for analysis and countries included</th>
<th>Scenario coverage</th>
<th>Unconditional NDC case</th>
<th>Conditional NDC case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Action Tracker (CAT, 2017)</td>
<td>All</td>
<td>August 2017</td>
<td>Current policy trajectory, NDC</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Climate and Energy College/University of Melbourne dataset (Meinshausen, 2016)</td>
<td>All</td>
<td>November 2016</td>
<td>NDC</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Climate Interactive (Climate Interactive, 2017)</td>
<td>All</td>
<td>20 October 2015</td>
<td>NDC</td>
<td>X</td>
<td>—</td>
</tr>
<tr>
<td>Danish Energy Agency (DEA, 2015)</td>
<td>All</td>
<td>8 December 2015</td>
<td>NDC</td>
<td>X</td>
<td>—</td>
</tr>
<tr>
<td>Joint Research Centre (JRC) (Vandyck et al., 2016; Kitous et al., 2017)</td>
<td>All</td>
<td>August 2017</td>
<td>Current policy trajectory, NDC</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>London School of Economics and Political Science (LSE) (Boyd et al., 2015)</td>
<td>All</td>
<td>Mid-October 2015</td>
<td>NDC</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Pacific Northwest National Laboratory (PNNL) (Fawcett et al., 2015)</td>
<td>All</td>
<td>Mid-October 2015</td>
<td>NDC</td>
<td>X</td>
<td>—</td>
</tr>
<tr>
<td>PBL Netherlands Environmental Assessment Agency (PBL, 2017; den Elzen et al., 2016; Kuramochi et al., 2016)</td>
<td>All</td>
<td>August 2017</td>
<td>Current policy trajectory, NDC</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>UNFCCC Synthesis Report on the Aggregate Effect of NDCs (UNFCCC, 2016)</td>
<td>All</td>
<td>4 April 2016</td>
<td>NDC</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

<sup>a</sup> Only available at the global level. Here the IEA current policies scenario is used.

Source: Updated from Rogelj et al. (2016) and UNEP (2016).
Table A.2: Overview of current policies and NDC studies included in the G20 member assessment by type of source (in alphabetical order)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Geographic coverage</th>
<th>Sector and gas coverage</th>
<th>Scenario coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global NDC analyses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Action Tracker (CAT, 2017; Kuramochi <em>et al.</em>, 2016)</td>
<td>All G20 economies included</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td>Climate and Energy College/University of Melbourne dataset (Meinshausen, 2016)</td>
<td>All G20 economies included</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>Climate Interactive (Climate Interactive, 2017)</td>
<td>About nine countries, i.e.: Australia, Canada, EU, India, Japan, Mexico, Russia, Republic of Korea, the USA(^a)</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>Joint Research Centre (JRC) (Vandyck <em>et al.</em>, 2016; Kitous <em>et al.</em>, 2017)</td>
<td>All G20 economies included</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td>London School of Economics and Political Science (LSE) (Boyd <em>et al.</em>, 2015)</td>
<td>All G20 economies, except Australia</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>Pacific Northwest National Laboratory (PNNL) (Fawcett <em>et al.</em>, 2015)</td>
<td>China, India, Russia(^c)</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>PBL Netherlands Environmental Assessment Agency (den Elzen <em>et al.</em>, 2016)</td>
<td>All G20 economies included</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td><strong>Official country-specific data sources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Government (2015)</td>
<td>Australia</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Biennial Report/Biennial Update Report (UNFCCC National Reports, 2015) (^a)</td>
<td>Brazil, Japan, Norway, Republic of Korea, Russia and Switzerland</td>
<td>Varies</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Department of Environmental Affairs (2014)</td>
<td>South-Africa</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td>EEA (2014)</td>
<td>EU</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Government of Canada (2014)</td>
<td>Canada</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>NDCs (UNFCCC, 2015a)</td>
<td>Argentina, Brazil, Japan, Mexico, Republic of Korea, South Africa, Turkey and the USA</td>
<td>Varies</td>
<td>NDC</td>
</tr>
</tbody>
</table>
### Geographic coverage

<table>
<thead>
<tr>
<th>Reference</th>
<th>Geographic coverage</th>
<th>Sector and gas coverage</th>
<th>Scenario coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Climate Change Strategy (2013)</td>
<td>Mexico</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>National Communications (UNFCCC, 2015b)</td>
<td>Indonesia, the USA</td>
<td>Varies</td>
<td>NDC</td>
</tr>
</tbody>
</table>

### Independent country-specific data sources

<table>
<thead>
<tr>
<th>Reference</th>
<th>Geographic coverage</th>
<th>Sector and gas coverage</th>
<th>Scenario coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputex (2016)</td>
<td>Australia</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Centre for Policy Research (Dubash et al., 2015)</td>
<td>India</td>
<td>CO₂</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Climate Advisers (Belenky, 2015; Climate Advisers, 2017)</td>
<td>United States a</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td>Climate Interactive (2017)</td>
<td>United States</td>
<td>All (excl. LULUCF)</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Energy Research Institute Low carbon scenarios (based on Jiang et al., 2013)</td>
<td>China</td>
<td>CO₂ d</td>
<td>Current policy trajectory, NDC</td>
</tr>
<tr>
<td>Indian Institute of Management, Ahmedabad (Garg et al., 2014)</td>
<td>India</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Institut du Développement Durables et des Relations Internationales (Garg et al., 2014)</td>
<td>Japan</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>King Abdullah University of Science and Technology (2014)</td>
<td>Saudi Arabia</td>
<td>CO₂ d</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>National Center for Climate Strategy and International Cooperation (Sha et al., 2015)</td>
<td>China</td>
<td>CO₂ d</td>
<td>NDC</td>
</tr>
<tr>
<td>Rhodium Group (2017)</td>
<td>United States</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>Resources For the Future (Hafstead, 2017)</td>
<td>United States</td>
<td>All</td>
<td>Current policy trajectory</td>
</tr>
<tr>
<td>World Resources Institute (Kuramochi, 2014)</td>
<td>Japan</td>
<td>All</td>
<td>NDC</td>
</tr>
<tr>
<td>World Resources Institute (Hausker et al., 2015)</td>
<td>United States</td>
<td>All</td>
<td>Current policy trajectory, NDC</td>
</tr>
</tbody>
</table>

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a: Compared to last year we have deleted the NDC estimate of China for the studies Climate Interactive and Climate Advisers because of data inconsistency, but this does not affect the NDC estimate of China, as the number of studies included is still 10 (instead of 12).

b: Augmented with the US Environmental Protection Agency (2012), JRC/PBL (2012) and den Elzen et al. (2015) to produce economy-wide figures.

c: Not all countries’ projections of the studies are included for this analysis.

d: Augmented with Tavoni et al. (2015) and Government of China (2012) to produce economy-wide figures.
References


BOYD, R., STERN, N. and WARD, B. 2015. What will global annual emissions of greenhouse gases be in 2030, and will they be consistent with avoiding global warming of more than 2°C? London: ESRC Centre for Climate Change Economics and Policy and Grantham Research Institute on Climate Change and the Environment.


