Potsdam
Real-time
Integrated
Model for probabilistic
Assessment of emissions
Paths

Overview of quantification of Annex I proposals for 2020 emission targets

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Methodology

1. Reduction pledges/targets are converted to percent reduction relative to 1990 GHG emissions excl. LULUCF ("raw target")
   - Calculated with without Article 3.7
2. Application of Article 3.7 for eligible countries
3. Calculation of LULUCF credits (using country-preferred options)
4. "Effective target" as % of 1990 GHG emissions excl. LULUCF
   - Article 3.7 and LULUCF accounting.
5. "Effective target plus CP1 carryover"
   - Assume emission surpluses from CP1 are carried over from first commitment period.
- Data sources: CRF 2009; LULUCF data from CRF 2009 and informal submissions to KP

2020 Annex I proposals for Accord

	Reduction in % below Base year	Base year	'Raw target' % below 1990 GHG emissions excl. LULUCF
Australia	5 - (15) - 25%	2000	13% above to 11% below
Belarus	5-10%	1990	5-10%
Canada	17%	2005	3% above
Croatia	5%	1990	5%
EU27	20-30%	1990	20-30%
Iceland	15-30%	1990	15-30%
Japan	25%	1990	25%
Kazakhstan	15%	1992	10%
Liechtenstein	20-30%	1990	20-30%
Monaco	20-30%	1990	20-30%
New Zealand	10-20%	1990	10-20%
Norway	30-40%	1990	30-40%
Russian Federation	15-25%	1990	15-25%
Switzerland	20-30%	1990	20-30%
Ukraine	20%	1990	20%
USA	17%	2005	3%
Annex I (excl. Turkey)	12-18%	1990	12-18%

Effect of LULUCF options for Annex I 2013-2020

Absolute amount
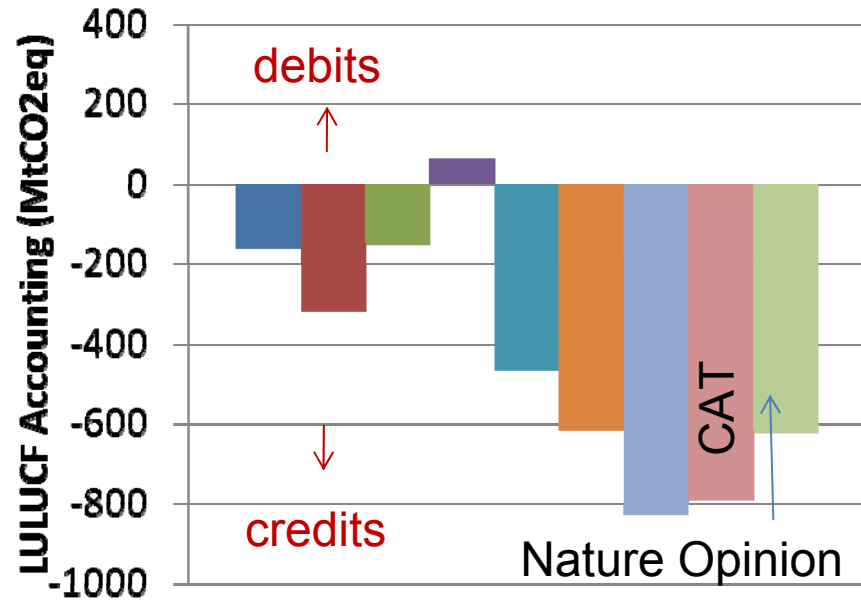
Relative to 1990 emissions

Legend:
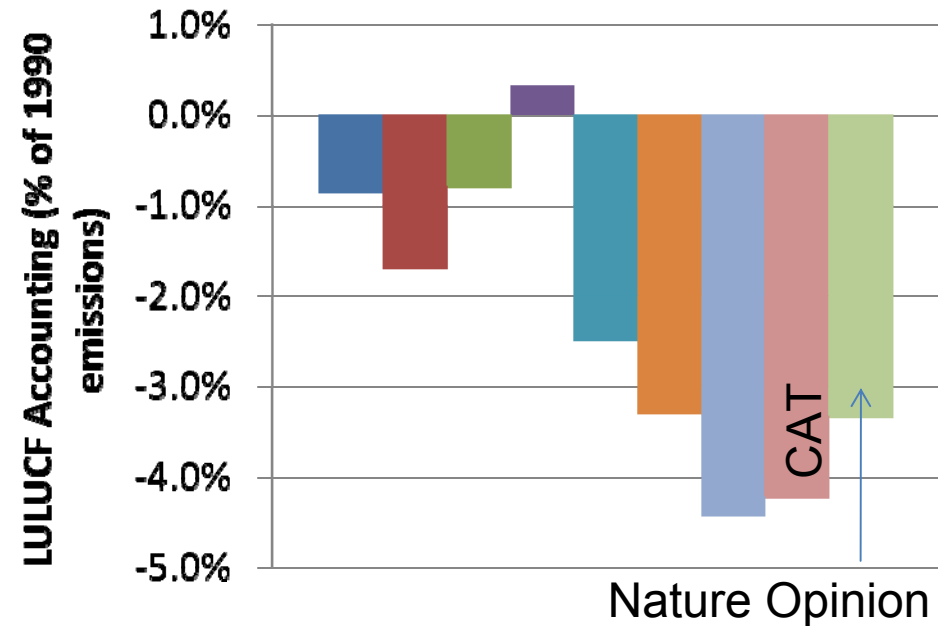
- ■ Option 1.1: KP LULUCF accounting
- ■ Option2.1: Discount factor 85%
- ■ Option 3.1: BAR to zero
- ■ Option 3.2: BAR with +/- 5% band
- ■ Option 4.1: Net-net with 1990 base year
- ■ Option 6.1: Net-net accounting for all KP activities with 1990 base year
- ■ Option 7.1: LULUCF land based accounting with 1990 base year
- ■ Climate Action Tracker: party preferred options
- ■ Nature Opinion piece: cap on FM 4% of industrial emissions

2020 Annex I proposals for Accord

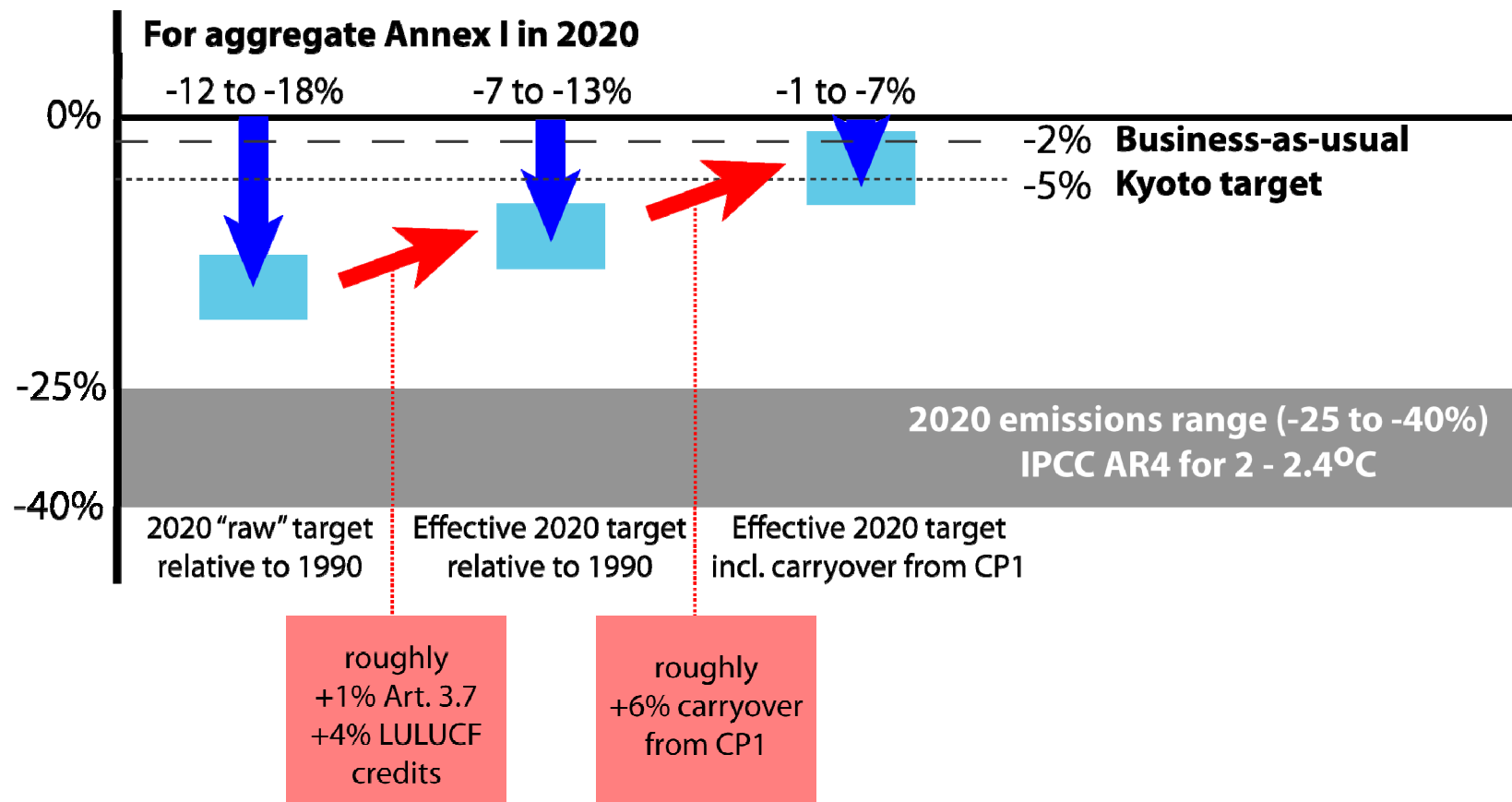|	'Raw target' (MtCO2eq/yr)	LULUCF credits (MtCO2eq/yr)	Effective target (MtCO2eq/yr)	Effective target (% above 1990)
Australia	470-371	Incl. Art 3.7 73-41	543-413	+30 to -1%
Belarus	123-116	-	123-116	-5 to -10%
Canada	607	1	607	+3%
Croatia	30	-	30	-5%
EU27	4,450-3,894	0--15	4,450-3,879	-20 to -30%
Iceland	3-2	0.04	3-2	-14 to -29%
Japan	952	6	958	-25%
Kazakhstan	269	-	269	-10%
Liechtenstein	0.18-0.16	-	0.16	-20 to -30%
Monaco	0.09-0.08	-	0.08	-20 to -30%
New Zealand	56-49	15	71-65	+15 to +5%
Norway	35-30	5	40-35	-20 to -30%
Russian Federation	2,821-2,489	431	3,252-2,920	-2 to -12%
Switzerland	42-37	0.3	42-37	-19 to -29%
Ukraine	741	19	760	-18%
USA	5,878	403	6,282	+3%
Annex I (excl. Turkey)	16,477-15,467	952-906	17,430-16,372	-7 to -13%

2020 Annex I proposals for Accord

	Effective target (% above 1990)	BAU emissions 2020 INCLUDING RECESSION AND IMPLEMENTED POLICY (% above BAU)
Australia	+30 to -1%	+43%
Belarus	-5 to -10%	-22%
Canada	+3%	+34%
Croatia	-5%	+11%
EU27	-20 to -30%	-7%
Iceland	-14 to -29%	+18%
Japan	-25%	-6%
Kazakhstan	-10%	-10%
Liechtenstein	-20 to -30%	+14%
Monaco	-20 to -30%	-14%
New Zealand	+15 to +5%	+32%
Norway	-20 to -30%	-4%
Russian Federation	-2 to -12%	-28%
Switzerland	-19 to -29%	-10%
Ukraine	-18%	-41%
USA	+3%	+16%
Annex I (excl. Turkey)	-7 to -13%	-2% Note: BAU = PIK-PRIMAP4

Effect of LULUCF and surplus AAUs on aggregate Annex-I 2020 targets

Reductions from 1990 (%)
GHG emissions excluding LULUCF

For aggregate Annex I in 2020

-12 to -18%   -7 to -13%   -1 to -7%

0%

-2% **Business-as-usual**

-5% **Kyoto target**

-25%

2020 emissions range (-25 to -40%)
IPCC AR4 for 2 - 2.4°C

-40%

2020 "raw" target relative to 1990   Effective 2020 target relative to 1990   Effective 2020 target incl. carryover from CP1

roughly
+1% Art. 3.7
+4% LULUCF
credits

roughly
+6% carryover
from CP1

Annex I pledges and 2°C goal

- Global limit for 2°C in 2020   <44-45 GtCO$_2$e/yr
  - Pledges of all Parties add up to 48-53 GtCO$_2$e/yr
- Annex I "raw target" is 15.5-16.5 GtCO$_2$e/yr
  - Annex I "effective target with carryover" is 18.5 GtCO$_2$e/yr
- IPCC Annex I 25-45% range is ≈2°C consistent: 11-14 GtCO$_2$e/yr
  - Range is an emission allocation and does not include LULUCF
- Annex I pledges well above 2°C 2020 emission level

Conclusions

- Current pledges for 2020
  - Annex I "raw targets": Aggregate 12-18% below 1990 without LULUCF
  - Annex I "effective target": Aggregate 7-13% below 1990 with LULUCF credits (and KP Art. 3.7)
    - LULUCF based on Parties preferred options
  - Annex I "effective target plus CP1 carryover": Aggregate 1-7% below 1990
    - Simple estimate of carryover from CP1 spread out evenly over 2013-2020 adds another 6% of 1990 aggregate emissions
  - Above IPCC AR4 Annex-I range of 25-40% below 1990 by 2020

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Thank you.
Further information
www.primap.org
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Our Aim: Synthesis of climate science, including its uncertainties, for informing international climate policy negotiations.

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Party preferred post-2012 LULUCF options

- Canada, NZ – current rules, with mandatory forest management calc. net-net with forward-looking baseline

- EU27 – current rules, with mandatory forest management - bar (2001-2005) with proportional band (+/-5%)

- Russian Federation – current rules, with mandatory forest management with no cap

- Switzerland – current rules, with mandatory forest management calc. net-net relative to 1990

- Australia, Norway –for all activities, net-net relative to 1990

- USA - land-based LULUCF sector, net-net relative to 1990

- remaining countries – current rules, with forest management cap at the lesser of 3% of base year or 15% of activity

Data Sources

- We construct a dataset for the activities – afforestation/reforestation (AR), deforestation (D), forest management (FM), cropland management (CM), and grassland management (GM)

- We use data that has been submitted to UNFCCC in 2009:
  - Informal submissions to AWG-KP – some countries reported historical data and projections
  - Proxies from national submissions – constructed KP activities from LULUCF convention categories where data was available – most comprehensive in terms of number of countries and number of activities, only historical data
  - Voluntary submissions to the KP of activities as part of national inventory submissions – sparse data from 10 countries, not necessarily consistent with informal submissions; these were not used

- Use informal submissions, if not available, use proxy from national submissions. Linearly interpolate between data points if years in between missing. Linear regression of historical data if projections missing.

- For more detail on how this data is constructed, please refer to the www.primap.org website under link, "Documentation"