FONDAZIONE ENI ENRICO MATTEI

ASSESSMENT AND COMPARISON OF INDCs

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The road to Paris: the INDCs

- 127 submissions to date, representing 155 Parties (EU-28)
- Different types of contributions:
  - economy-wide emission reduction targets (US, EU)
  - emission intensity targets GHG/GDP (China, India, Chile, Singapore, Tunisia)
  - percentage deviation from a BaU scenario (developing nations, LDC)
  - Adpatation actions, finance needs often included (developing nations, LDC)
- UNFCCC in the process to assess aggregate effect of INDCs by November 1

The road to Paris: overview of submitted INDCs

Country	GHG emissions reduction target	Reference year	Period for implementation
Algeria	7-22%	BAU	2021 – 2030
Australia	26-28%	2005	2021 – 2030
Brazil	37%/43%	2005	- 2025/- 2030
Canada	30%	2005	- 2030
Chile	30-45% GHG/GDP	2007	-2030
China	60-65% GHG/GDP	2005	-2030
Colombia	20-30%	BAU	-2030
Costa Rica	44% (BAU) 25% (2012)	BAU, 2012	2021-2030
Ethiopia	64%	BAU	- 2030
EU	≥40%	1990	2021-2030
India	33 – 35% GHG/GDP	2005	2021-2030
Indonesia	29%	BAU	-2030
Japan	26%	2013	April 2021 – March,2031
Mexico	22-36%	BAU (2013)	2020-2030
Morocco	13-32 %	BAU	2020-2030
New Zealand	11%	1990	2021-2030
Peru	30%	BAU	- 2030
Russia	25-30%	1990	2020-2030
South Africa	398 - 614 Mt CO2–eq	--	2020-2030
South Korea	37%	BAU	-2030
USA	26-28%	2005	2020-2025

3

The road to Paris: overview of submitted INDCs

Comparison among INDCs targets	Country			
	US	**EU**	**Russia**	**China (Emissions to peak by 2030)**
GHG Emissions [$MtCO_2eq/year$]	5204 - 5349	3380	2354 – 2523	**14496 - 15552**
GHG emissions change (%)				
wrt 1990	- 16 a - 14	**- 40**	- 30 a - 25	+265 a +291
wrt 2005	- 28 a - 26	**- 35**	+ 10 a + 18	+76 a +89
GHG/Pop Ratio [$tCO_2eq/per\ capita$]	14.5 - 15.0	6.6	**17.9 - 19.1**	9.8 - 10.5
GHG/GDP Ratio [$kgCO_2eq/US\$$]	0.30 - 0.31	0.27	**1.98 - 2.12**	1.11 - 1.19
Changes in GHG/GDP ratio ($kgCO_2eq/US\$$)				
wrt 1990 (%/year)	-3.0 a -2.9	-2.8	-3.7 a -3.5	**-4.7 a -4.5**
wrt 2005 (%/year)	-3.6 a -3.5	-2.9	-4.5 a -4.2	**-5.0 a -4.7**

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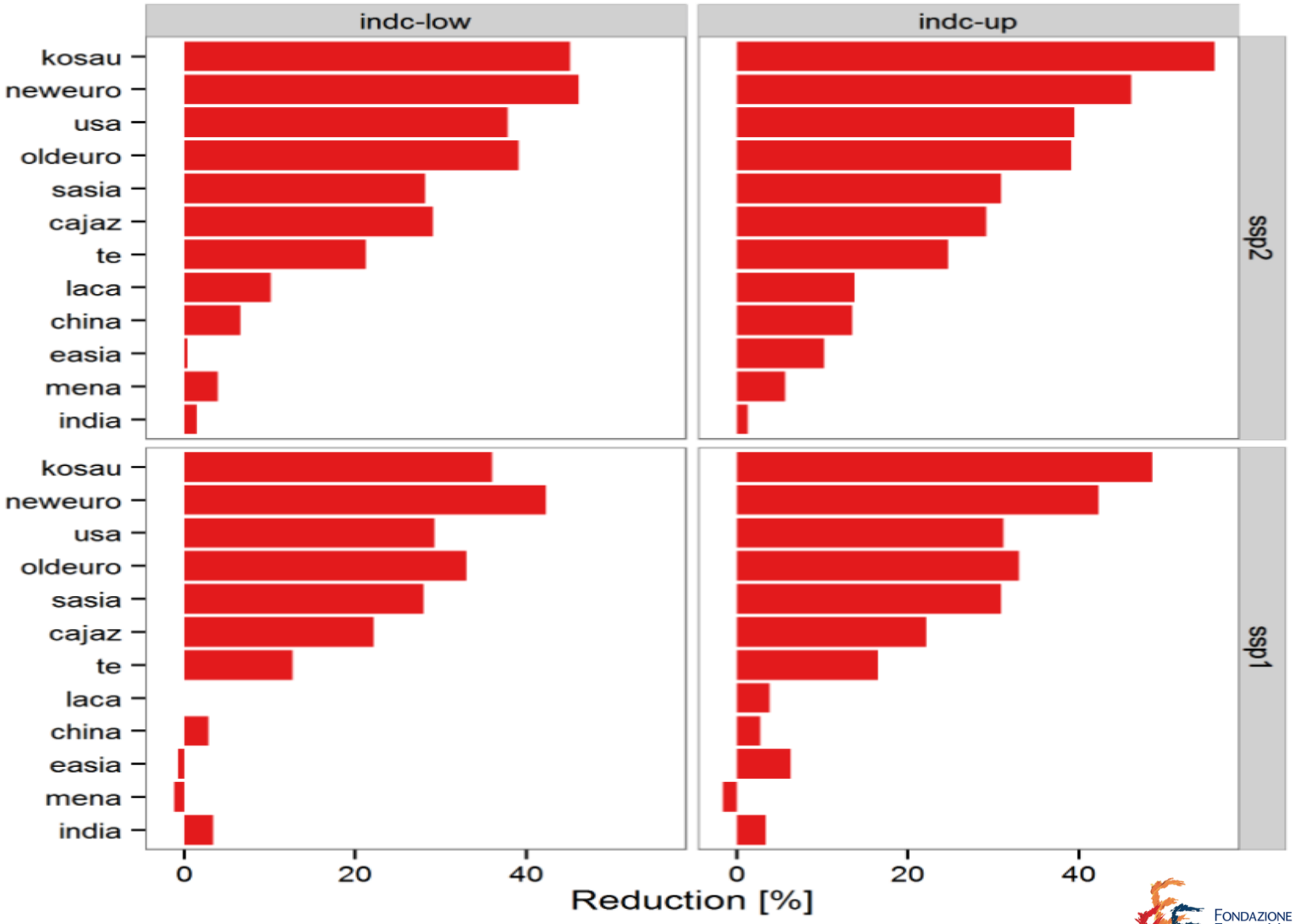
A preliminary assessment of INDCs

- 86.5% of global emissions covered, 155 countries committing to GHG emission control
- Top emitters on board (China, US, EU, India, Russia,…)
- Difficulty to compare different efforts
- Open questions:
  - On the right track to achieve the 2C target?
  - How is the burden of climate action distributed?

PERCENT REDUCTION WRT BAU



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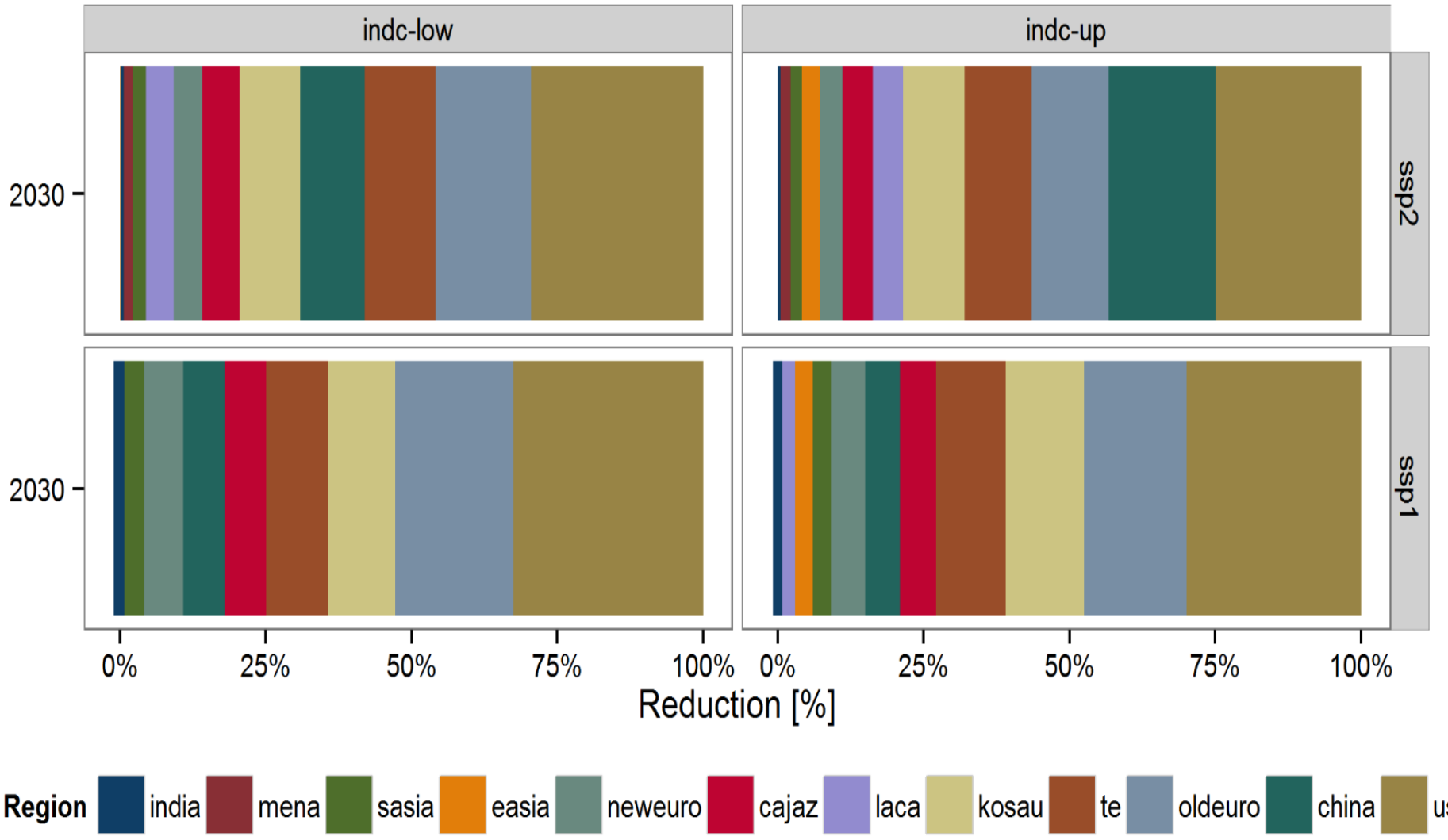
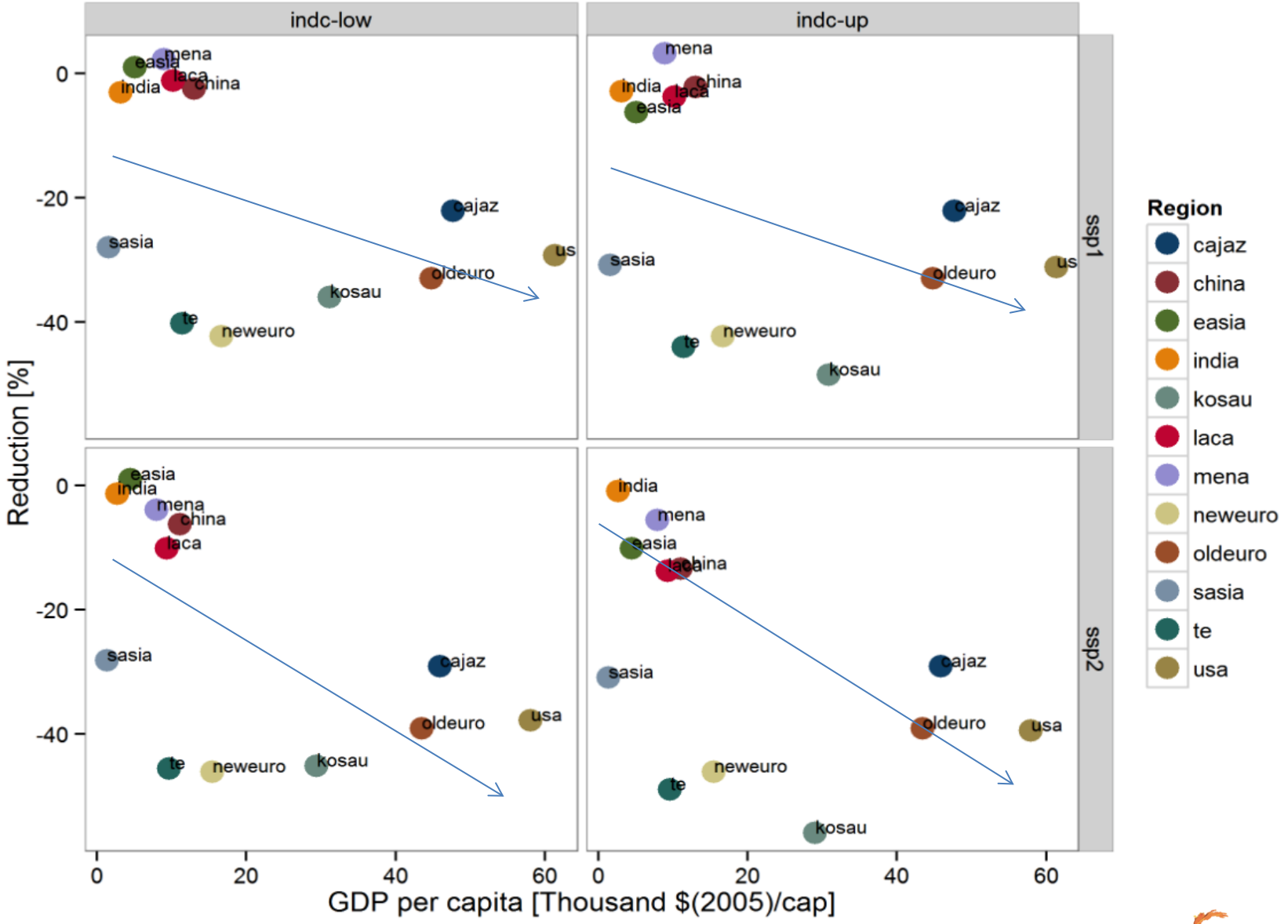
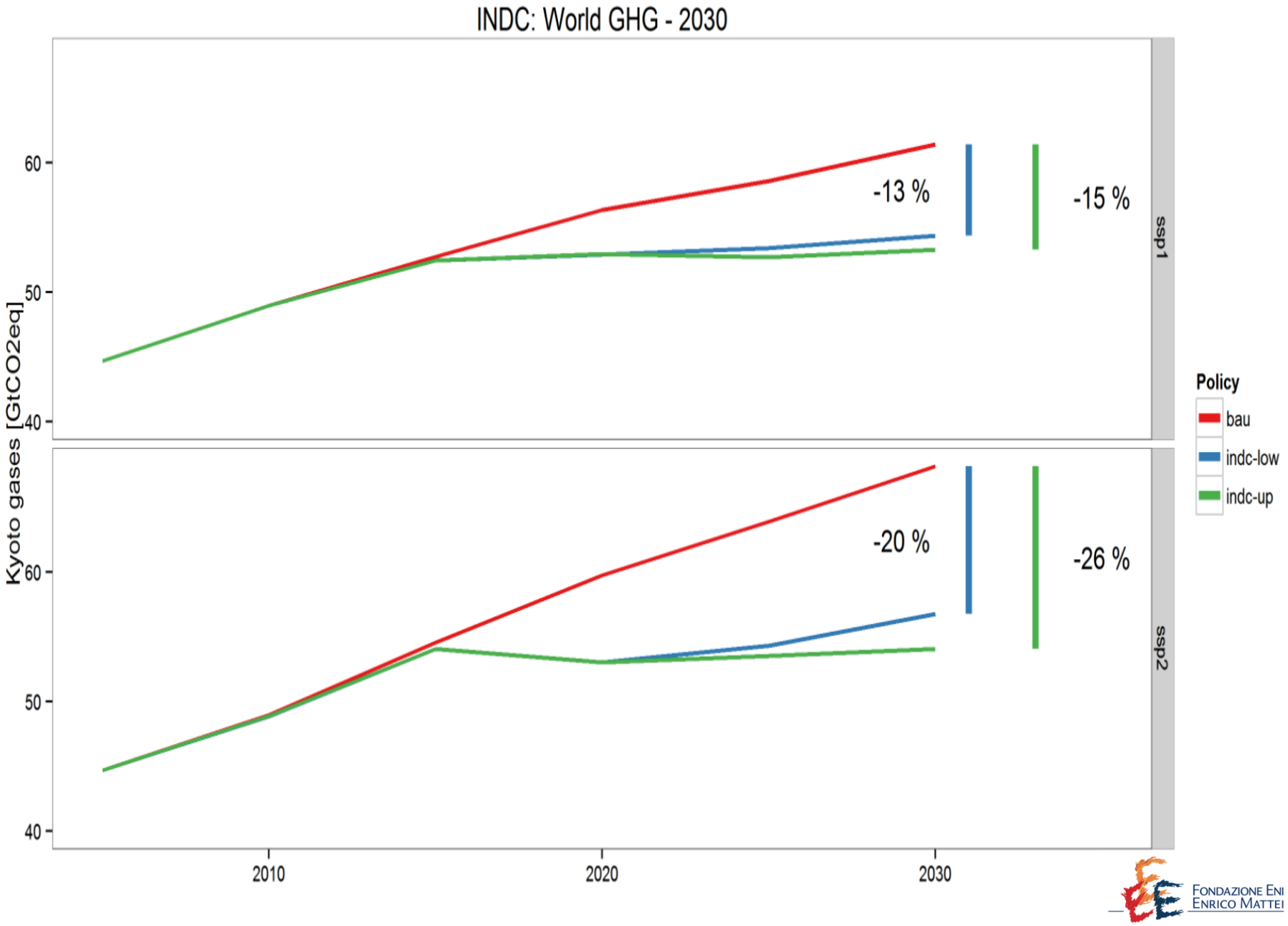


EMISSION REDUCTIONS wrt BAU



GLOBAL GHG EMISSION REDUCTIONS



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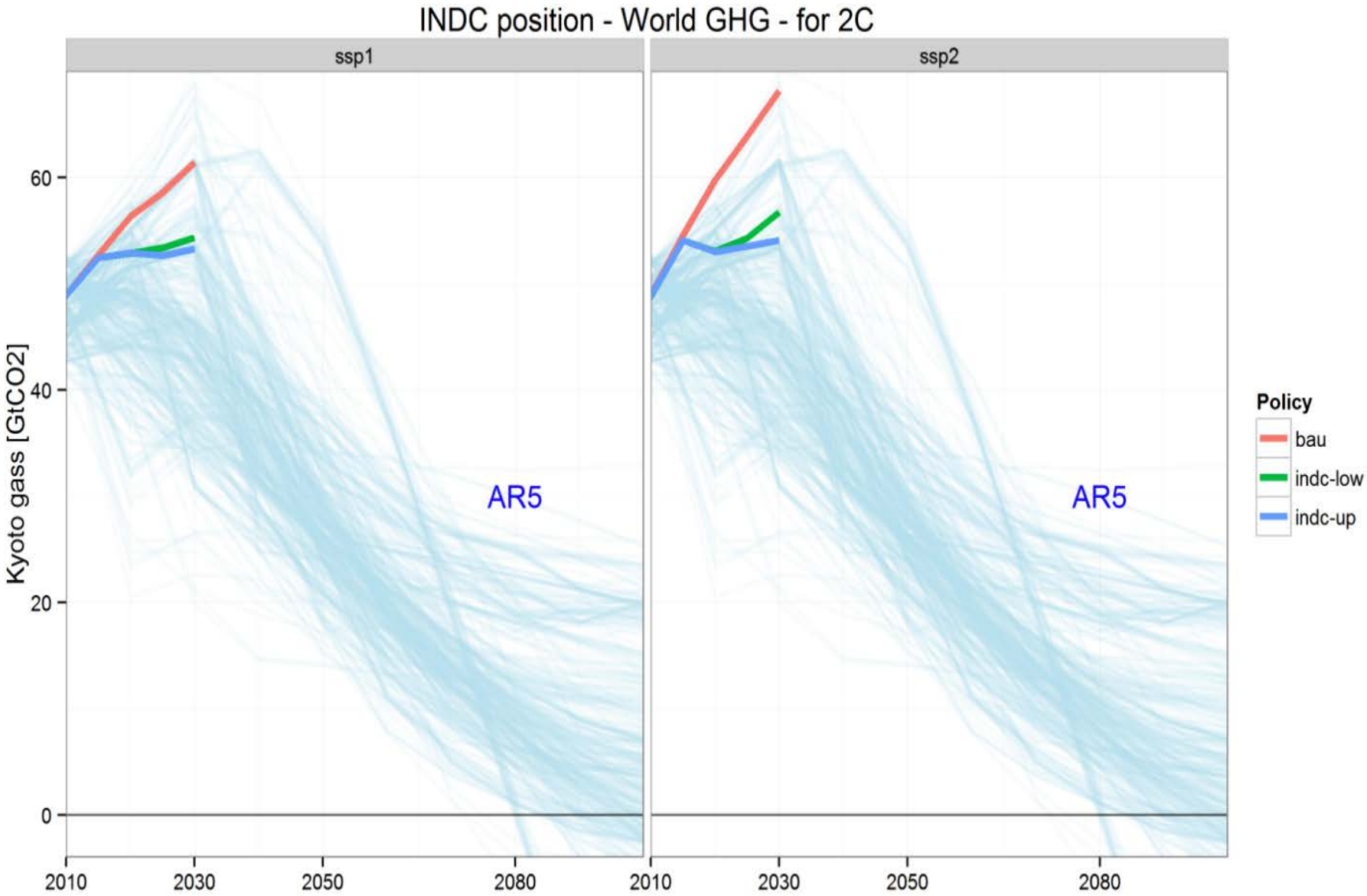
CONSISTENCY WITH THE 2°C TRAJECTORY



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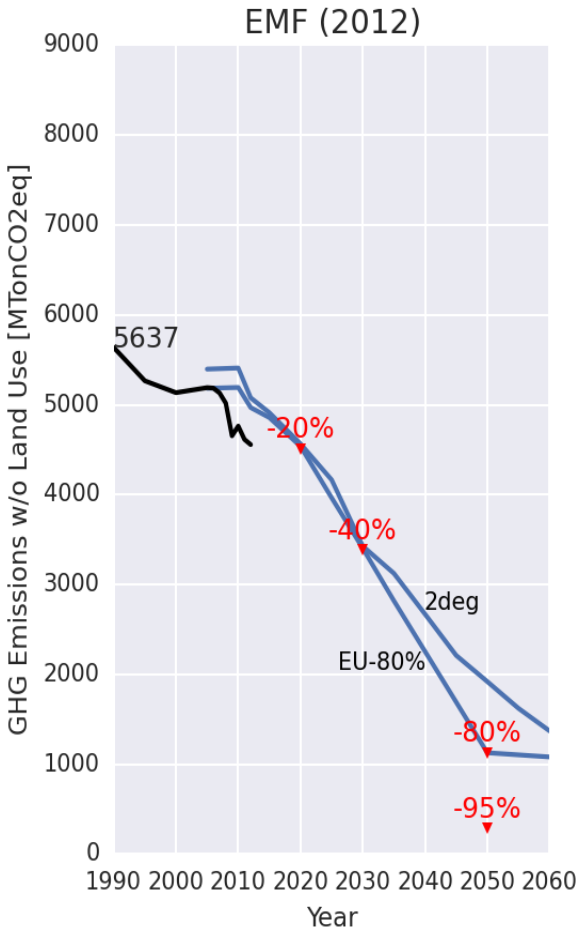
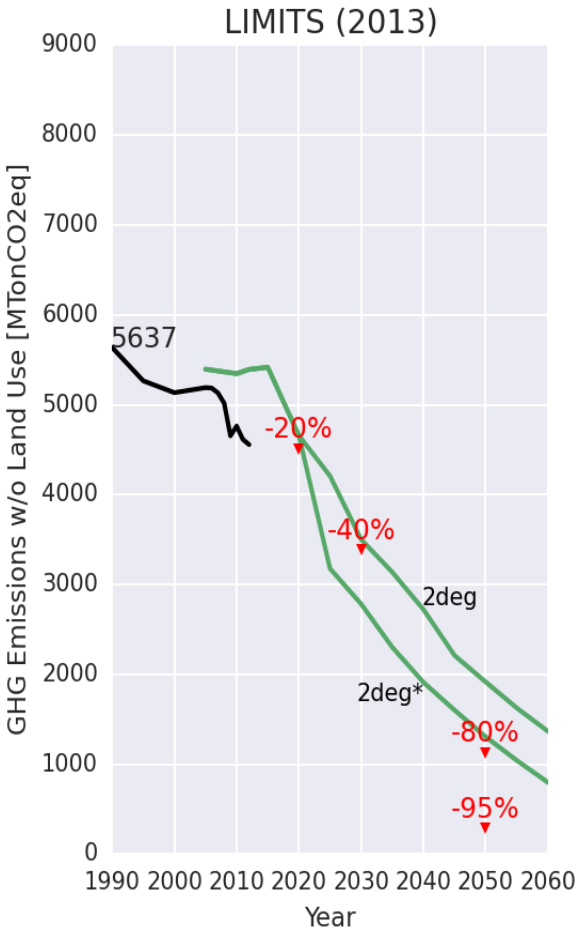
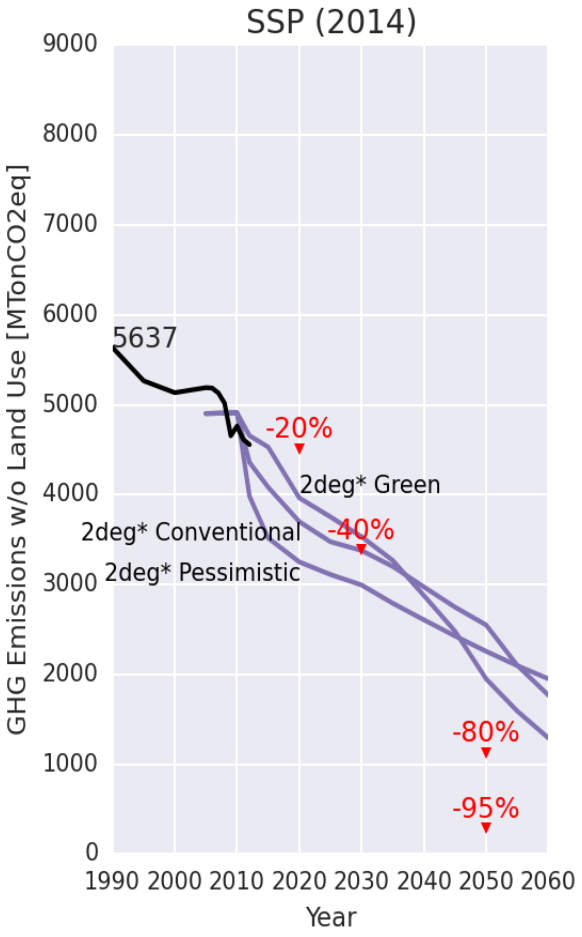
EU emission pathways to achieve the 2C target







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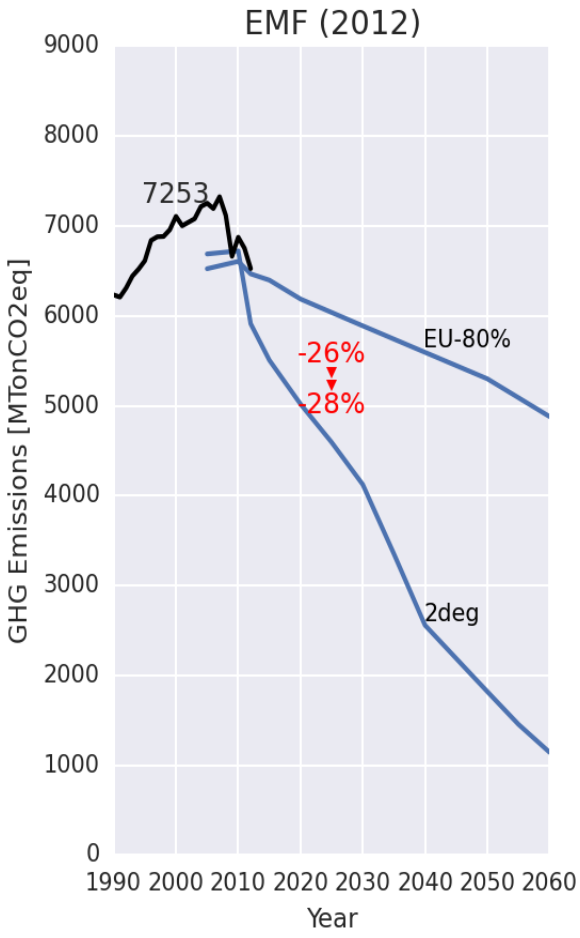
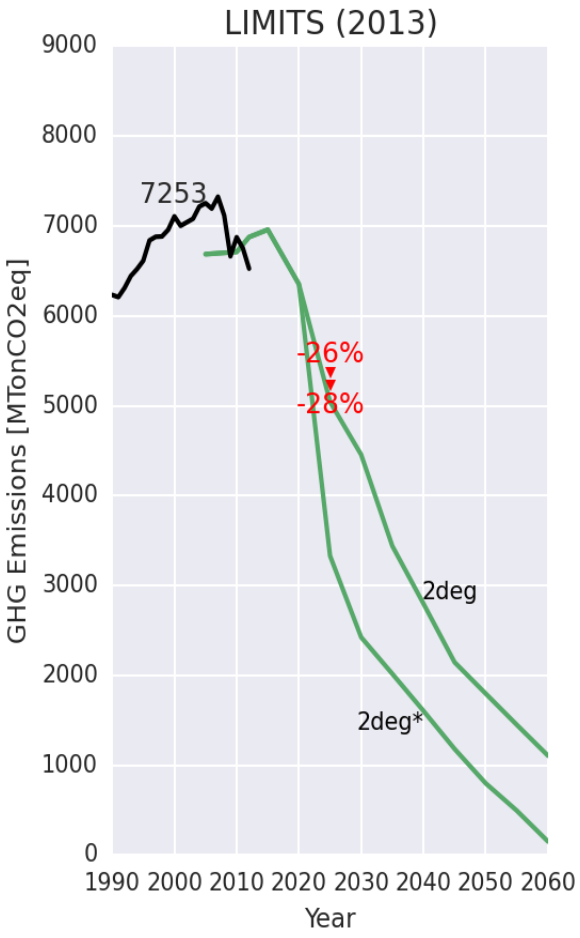
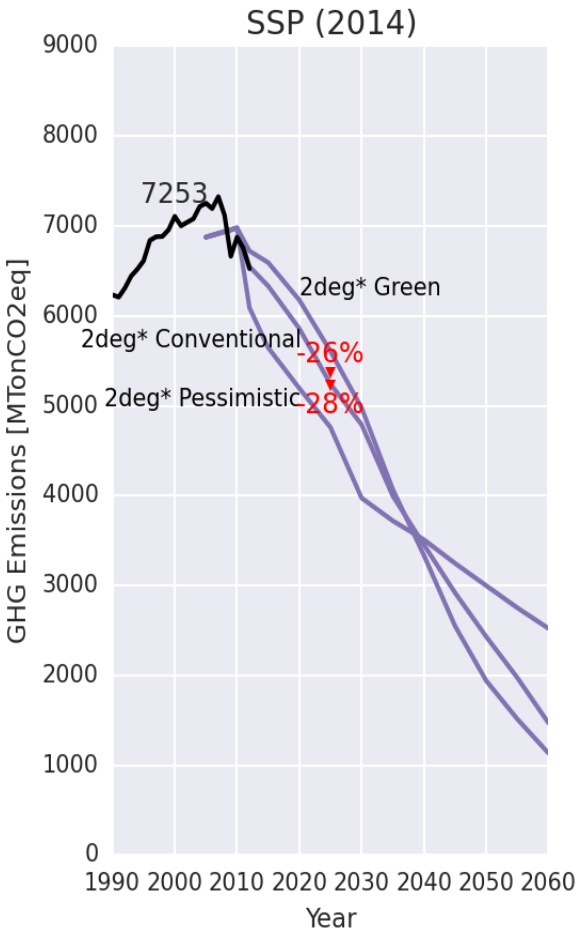
US emission pathways to achieve the 2C target







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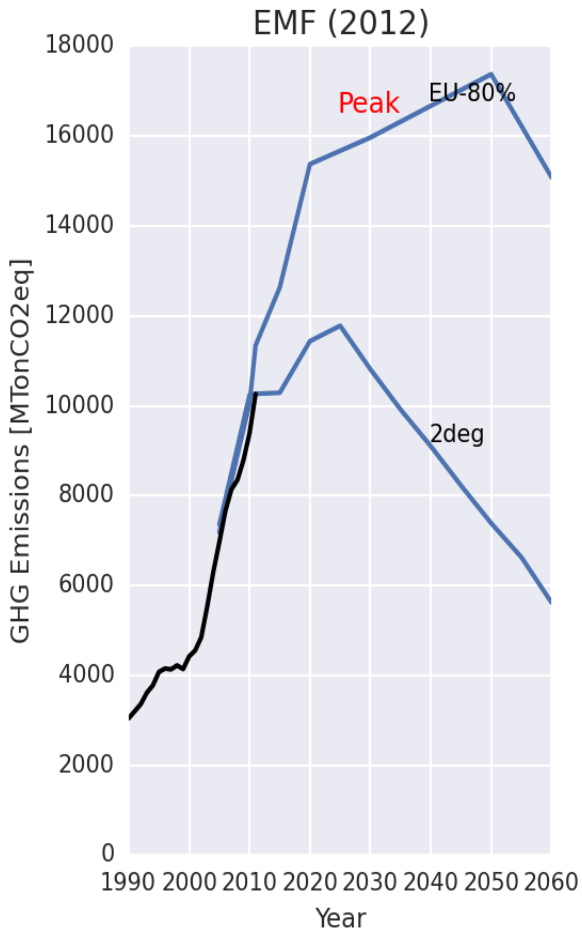
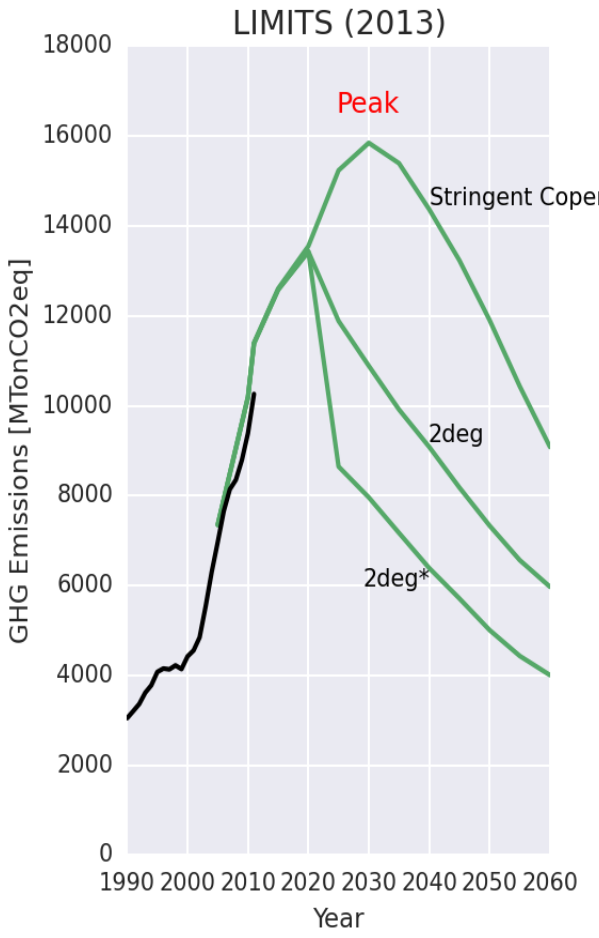
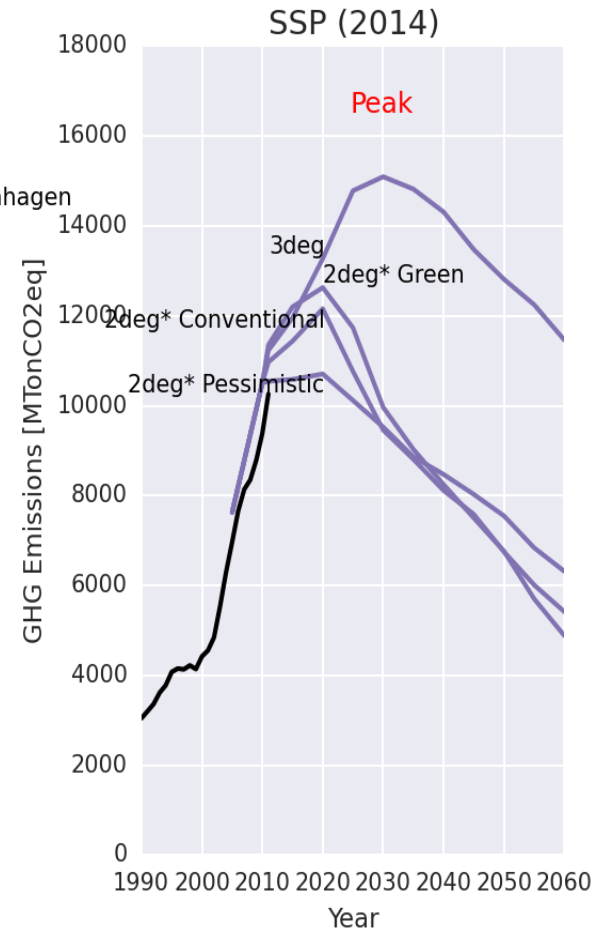
China emission pathways to achieve the 2C target







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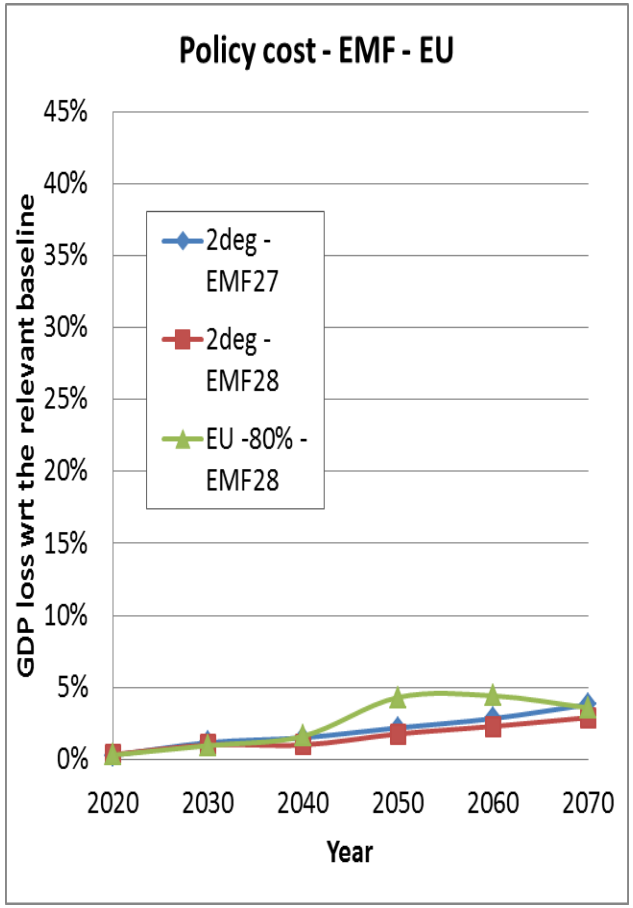
China emission pathway is not very ambitious, but costly

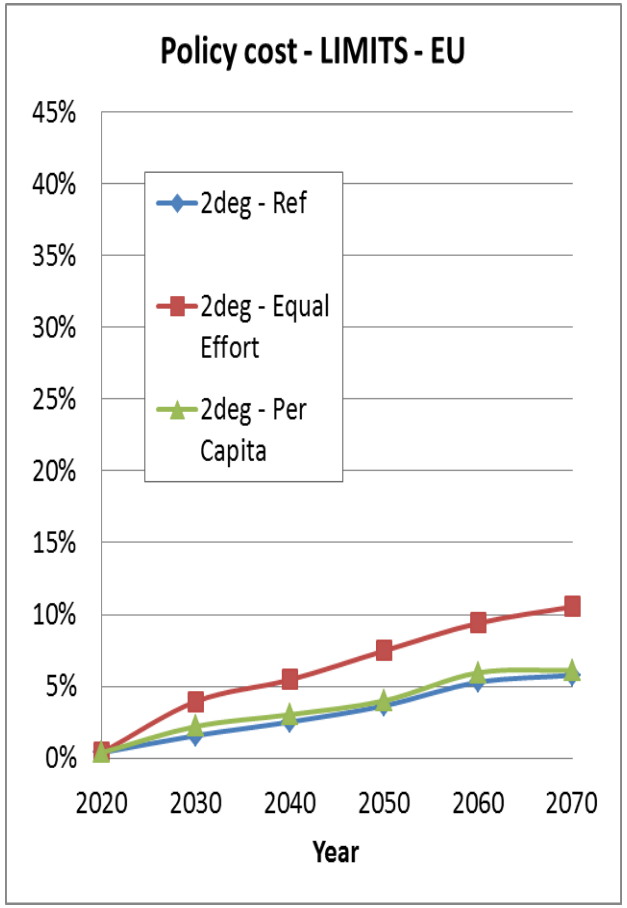
- China emission pathway is not consistent with 2C target

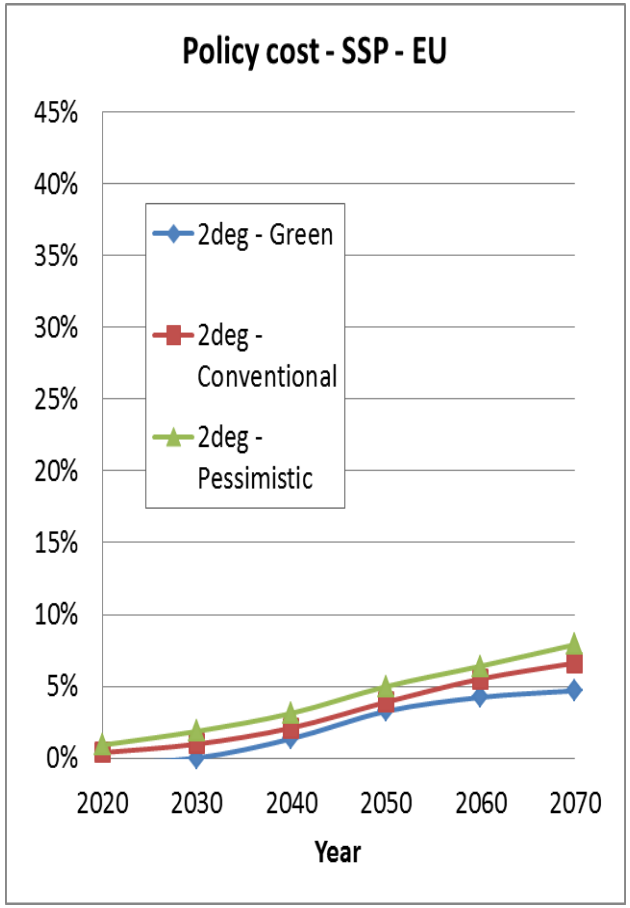
- However, consistency with 2 degrees would be too costly for China

- Fairness of INDCs is at least as important as their effectiveness

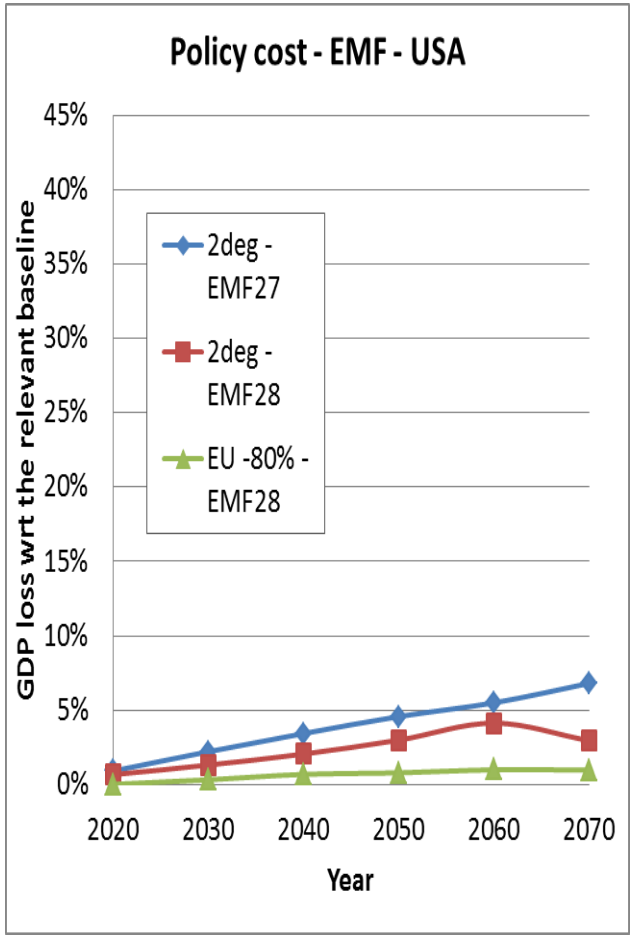
Comparing 2C pathway wrt to a BaU scenario: EU policy costs

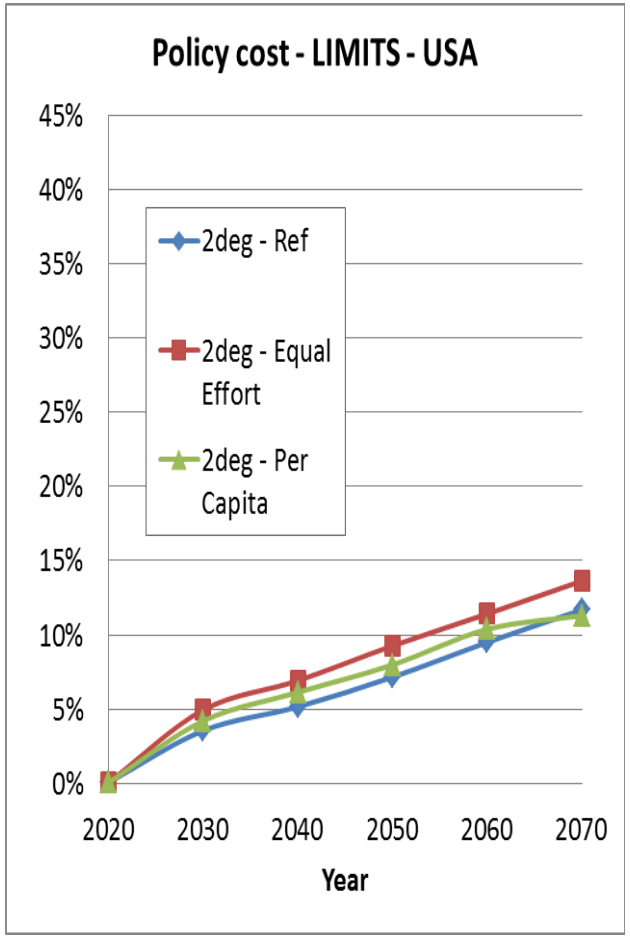


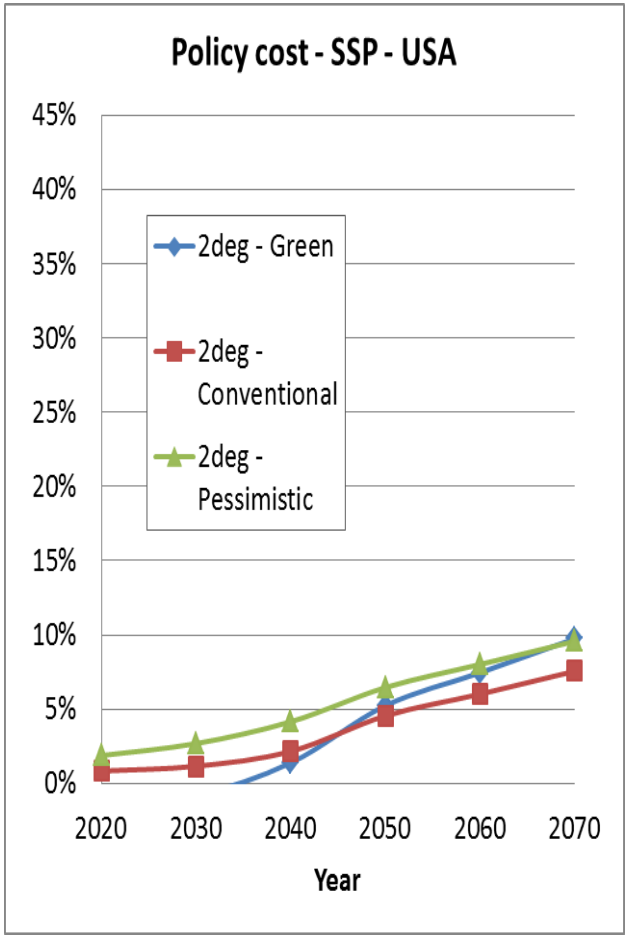




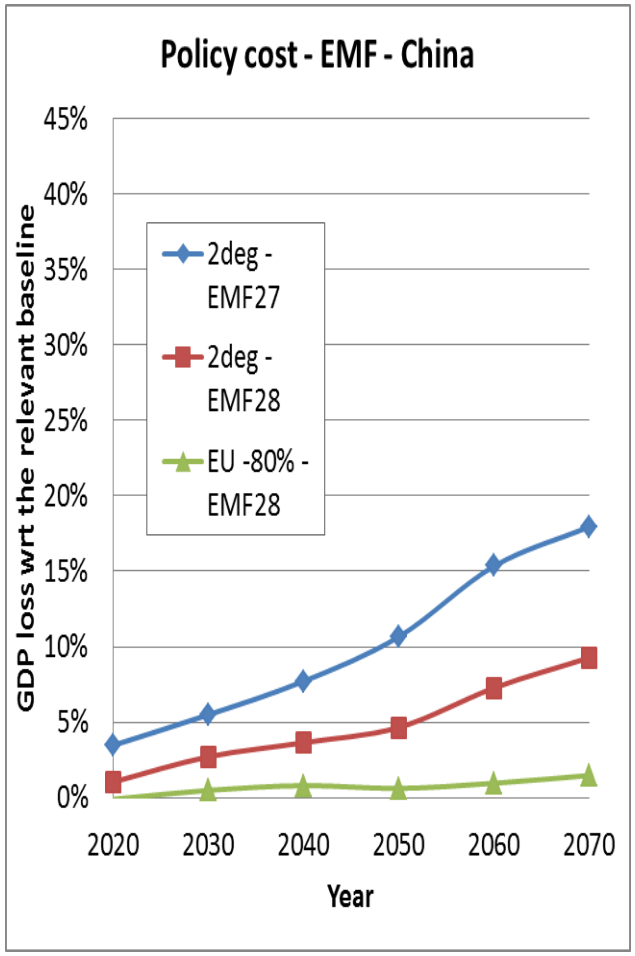
Comparing 2C pathway wrt to a BaU scenario: USA policy costs

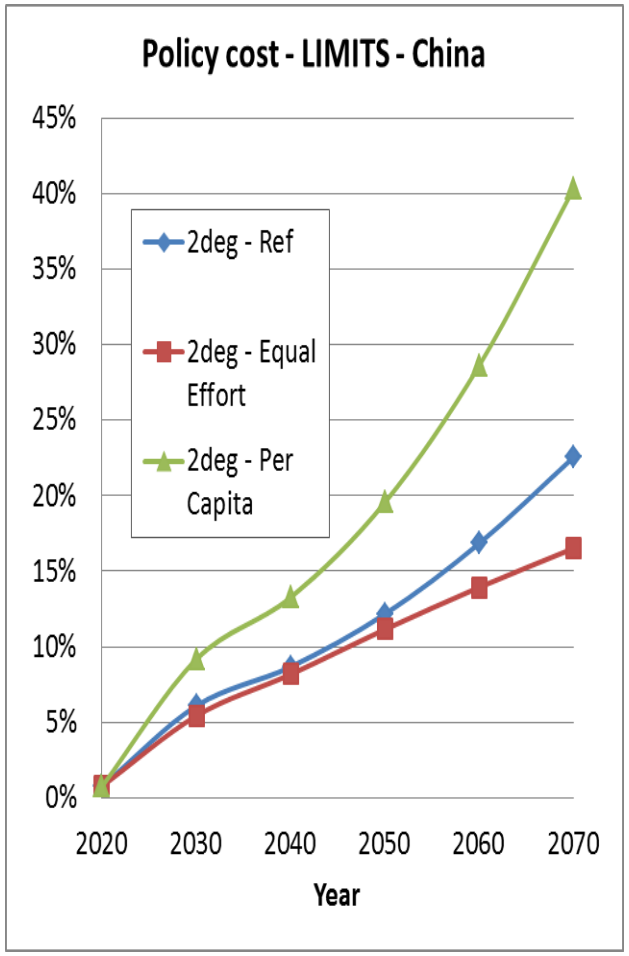


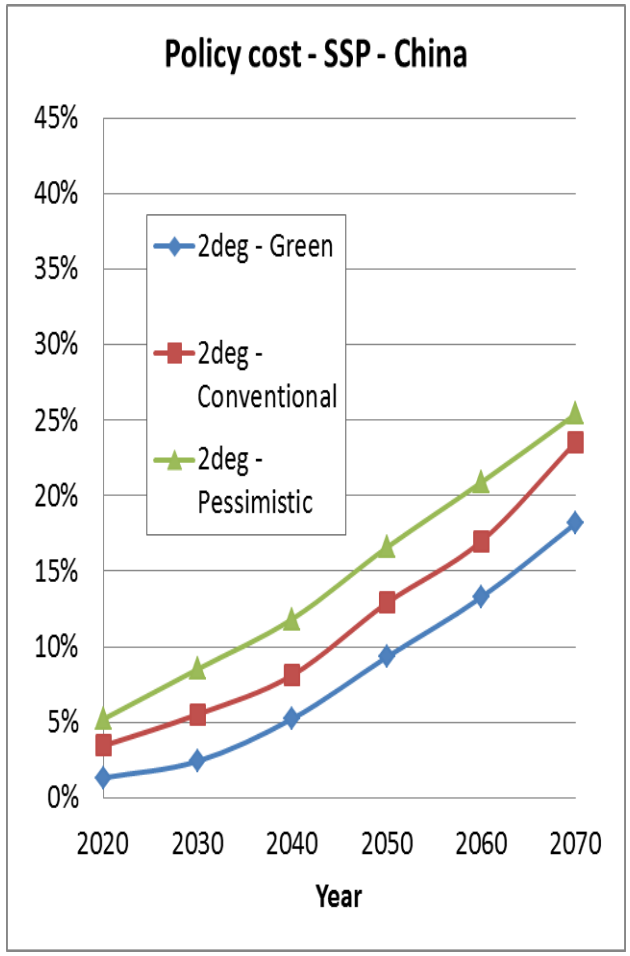




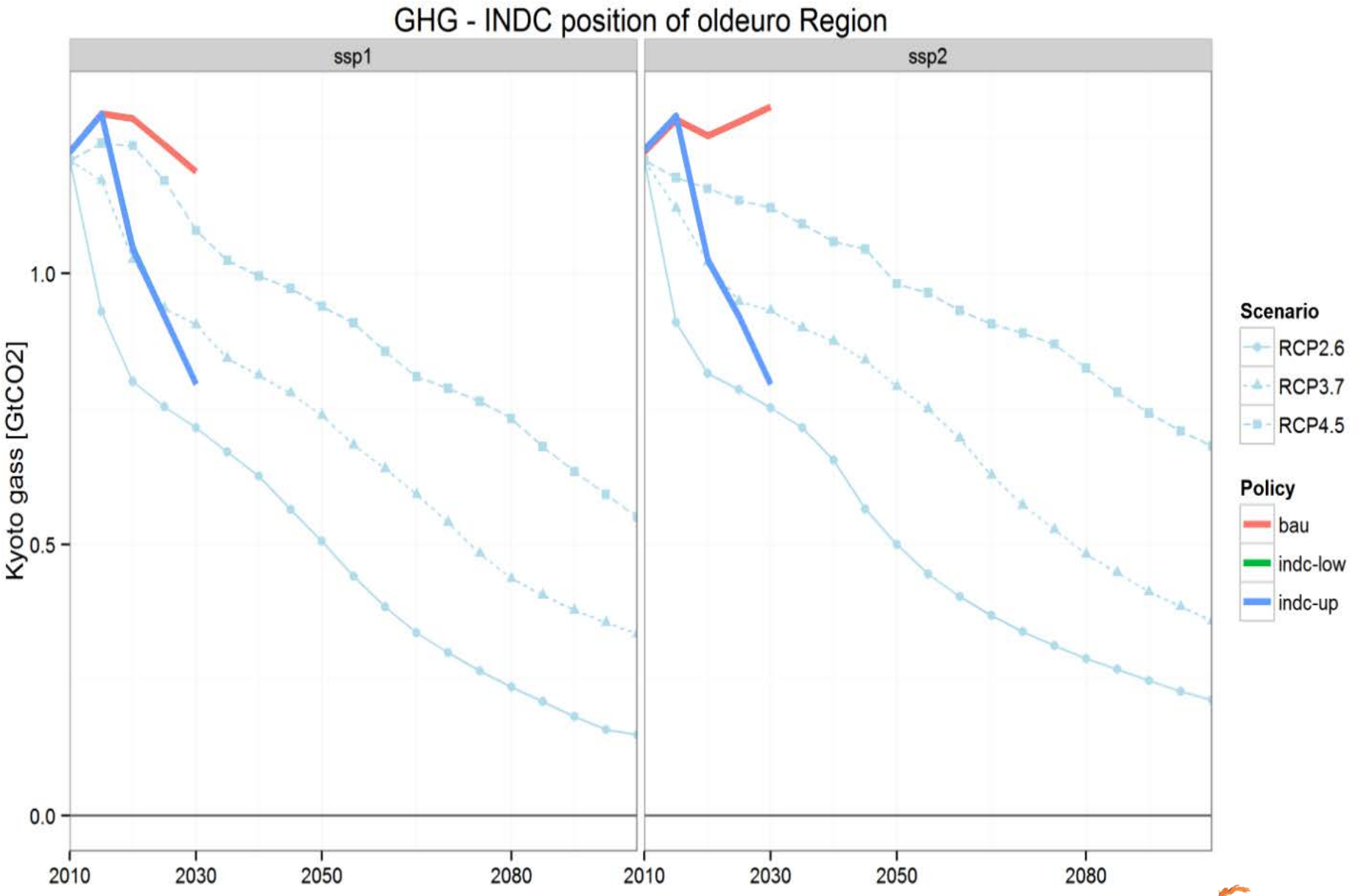
Comparing 2C pathway wrt to a BaU scenario: China policy costs



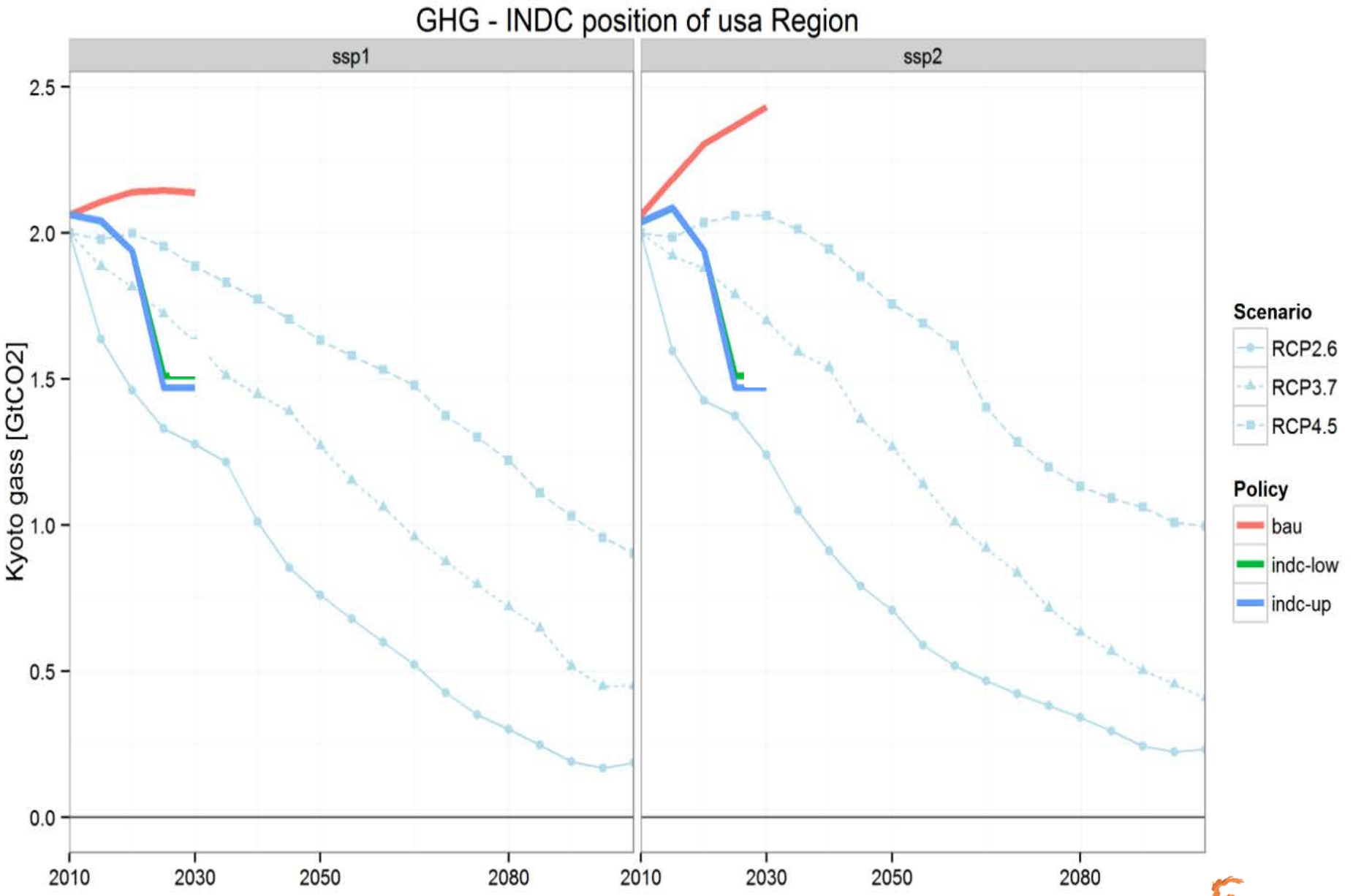




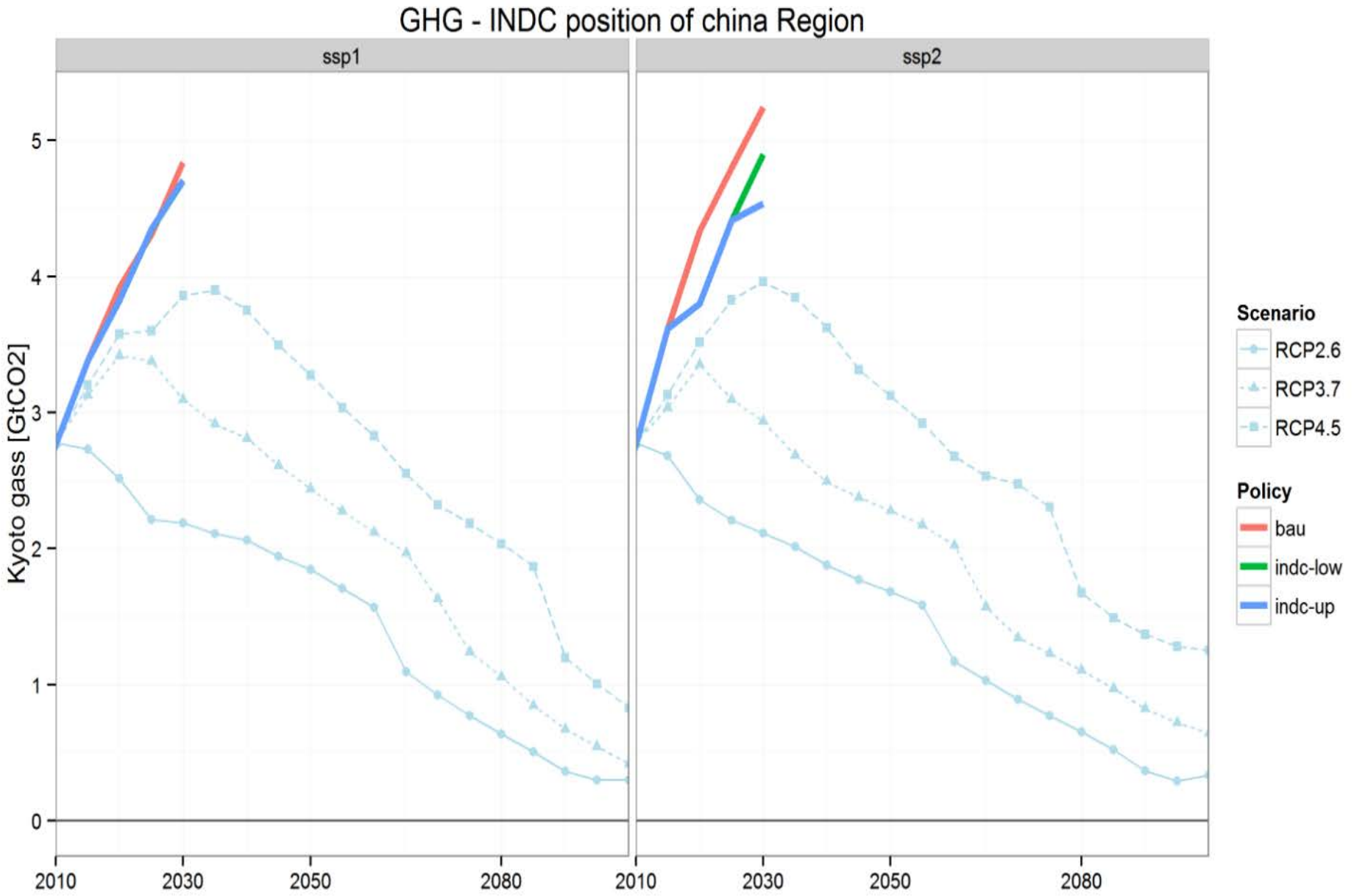
EUROPE


GHG - INDC position of oldeuro Region
ssp1
ssp2
Kyoto gass [GtCO2]
1.0
0.5
0.0
2010
2030
2050
2080
Scenario
RCP2.6
RCP3.7
RCP4.5
Policy
bau
indc-low
indc-up

USA


GHG - INDC position of usa Region
ssp1
ssp2
Kyoto gass [GtCO2]
2.5
2.0
1.5
1.0
0.5
0.0
2010
2030
2050
2080
Scenario
RCP2.6
RCP3.7
RCP4.5
Policy
bau
indc-low
indc-up

CHINA


GHG - INDC position of china Region
ssp1
ssp2
Kyoto gass [GtCO2]
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1
2
3
4
5
2010
2030
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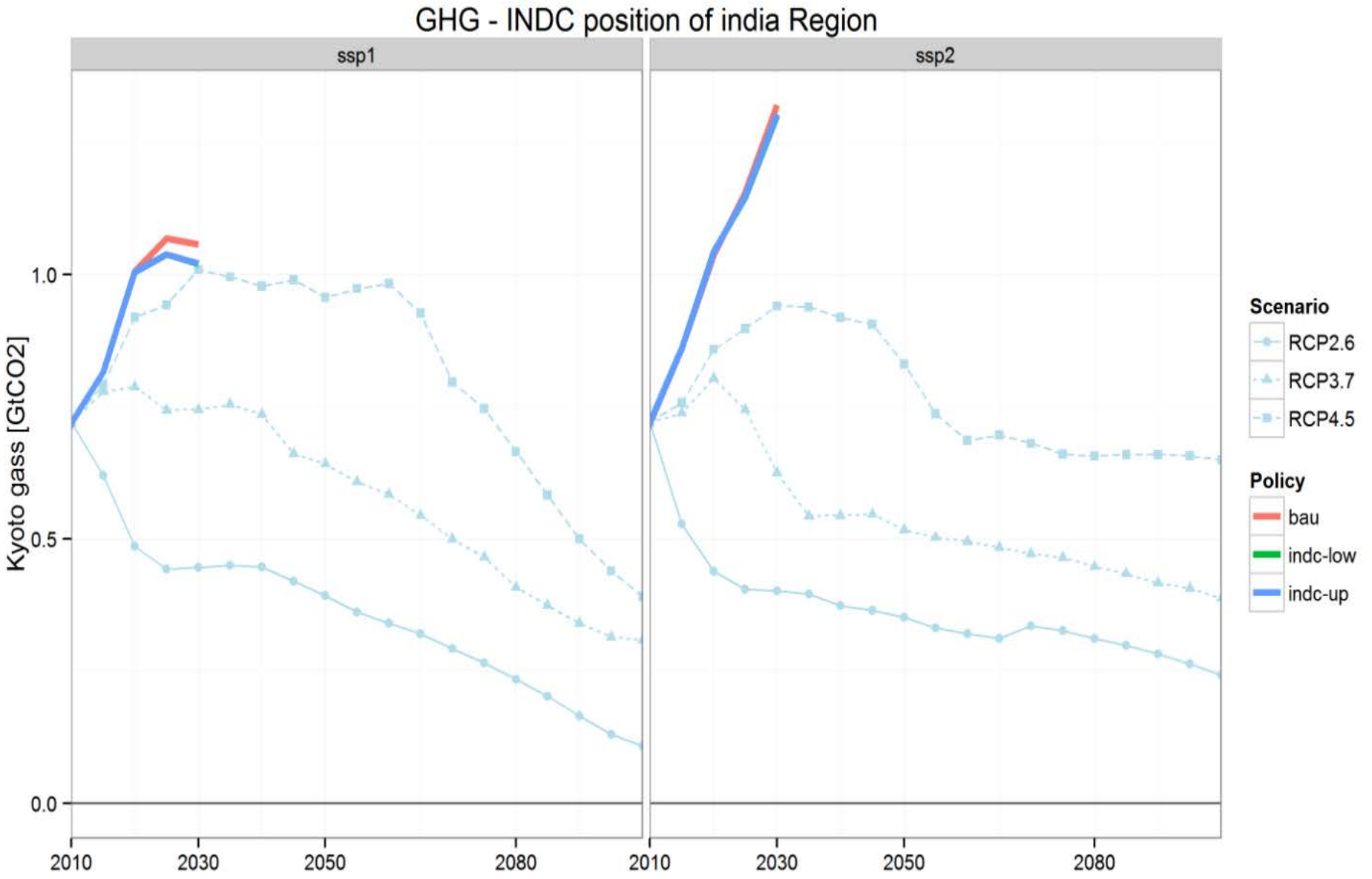
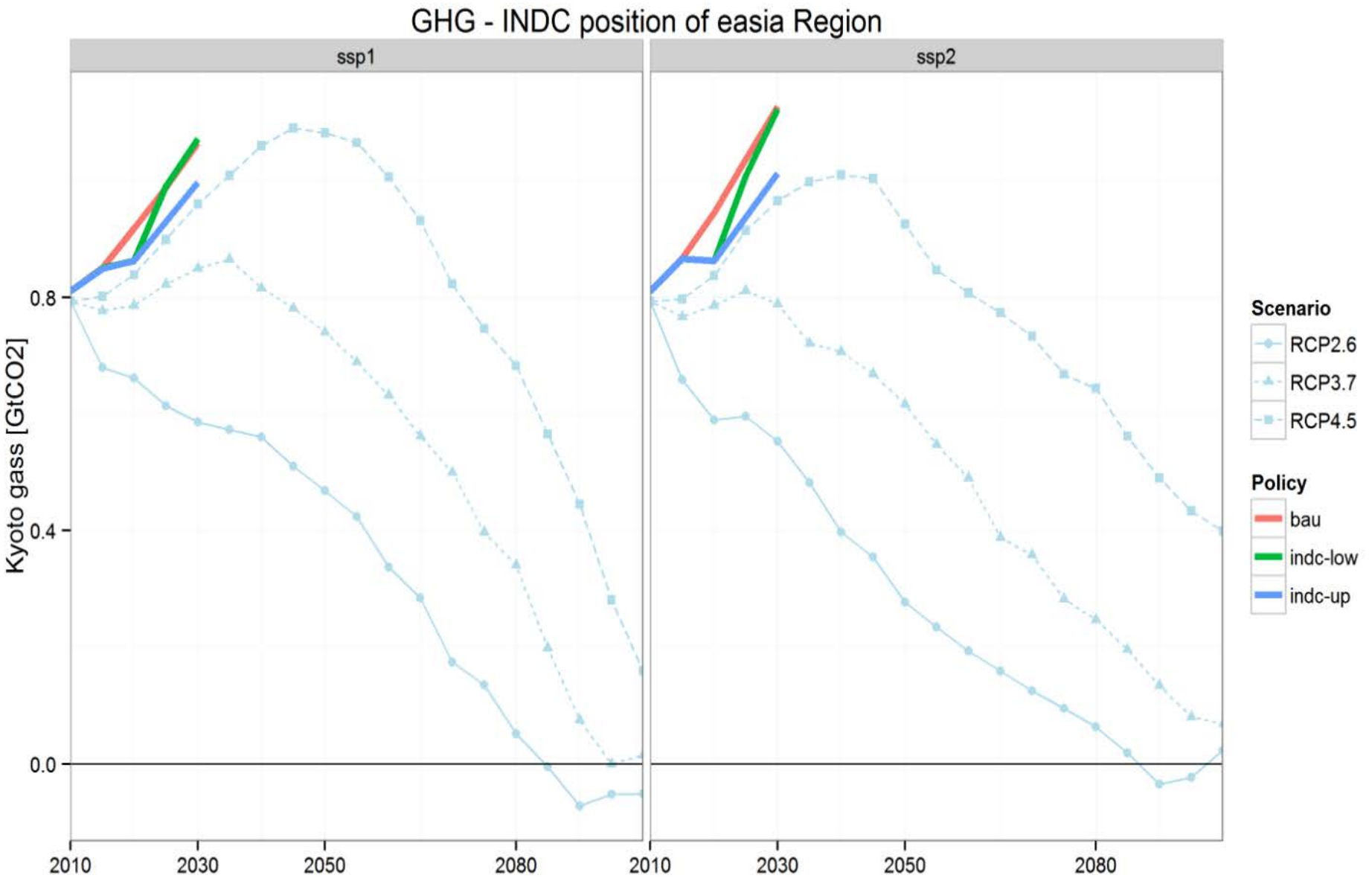
2080
Scenario
RCP2.6
RCP3.7
RCP4.5
Policy
bau
indc-low
indc-up

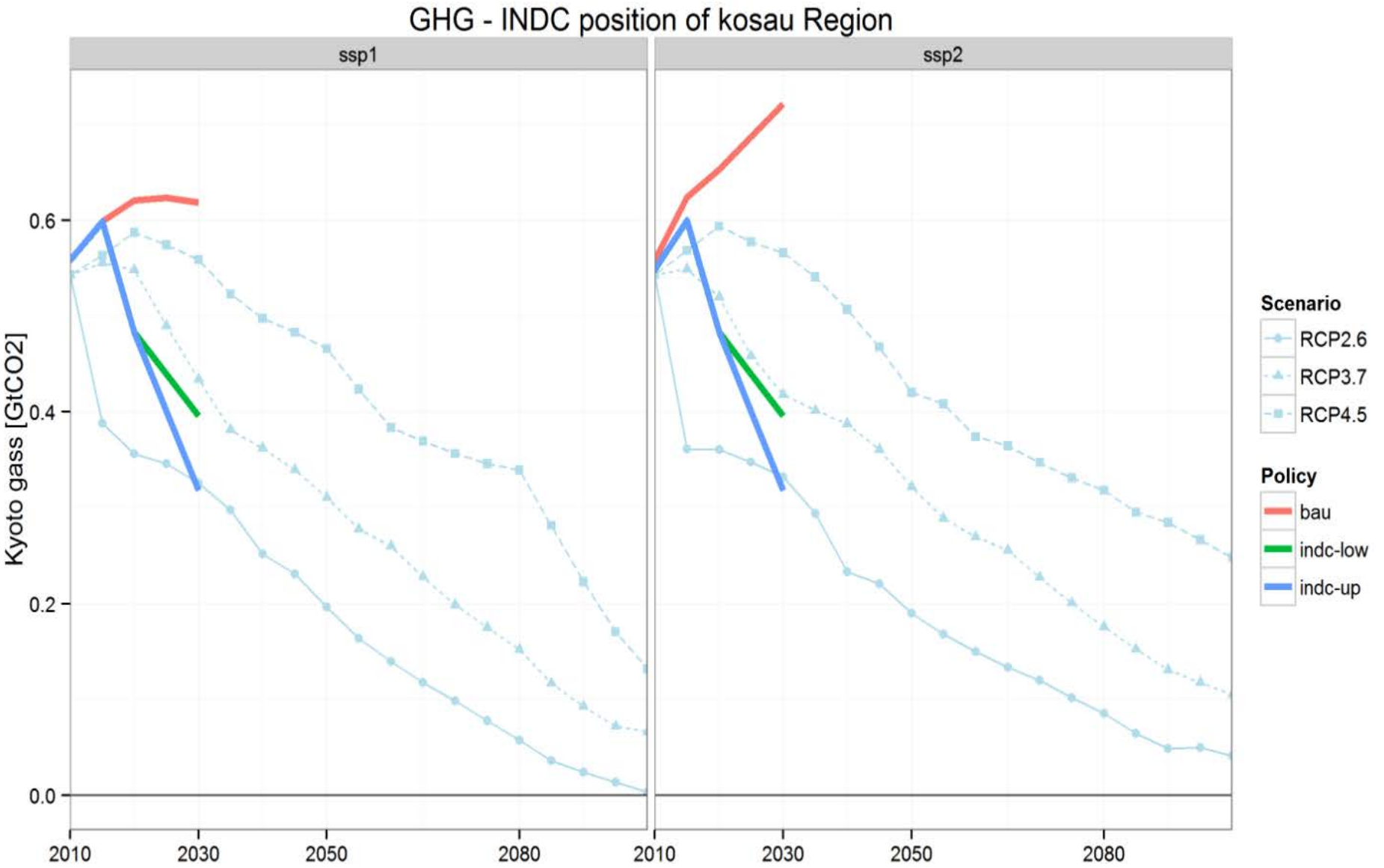
INDIA



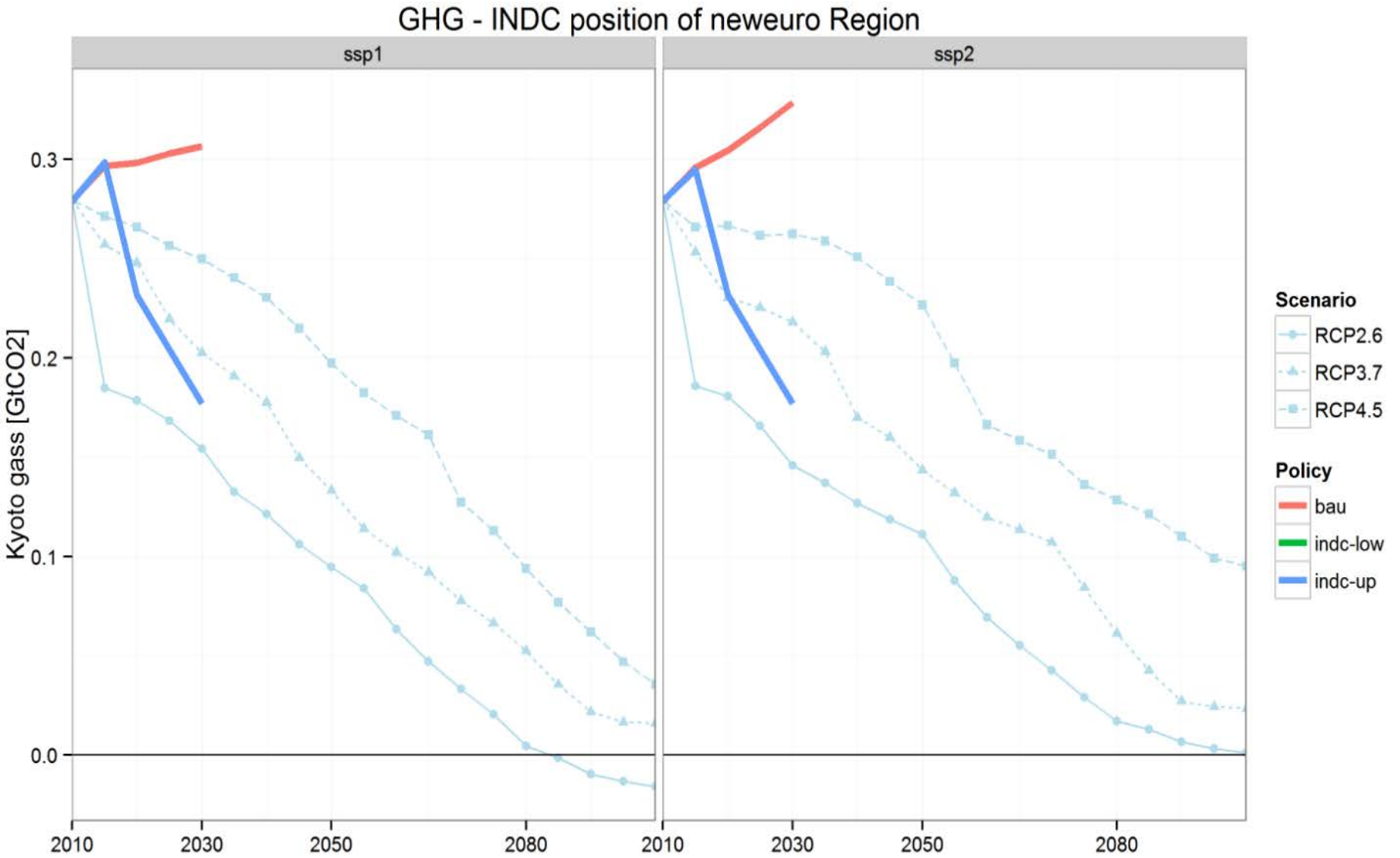
EAST ASIA


GHG - INDC position of easia Region
ssp1
ssp2
Kyoto gass [GtCO2]
0.8
0.4
0.0
2010
2030
2050
2080
Scenario
RCP2.6
RCP3.7
RCP4.5
Policy
bau
indc-low
indc-up

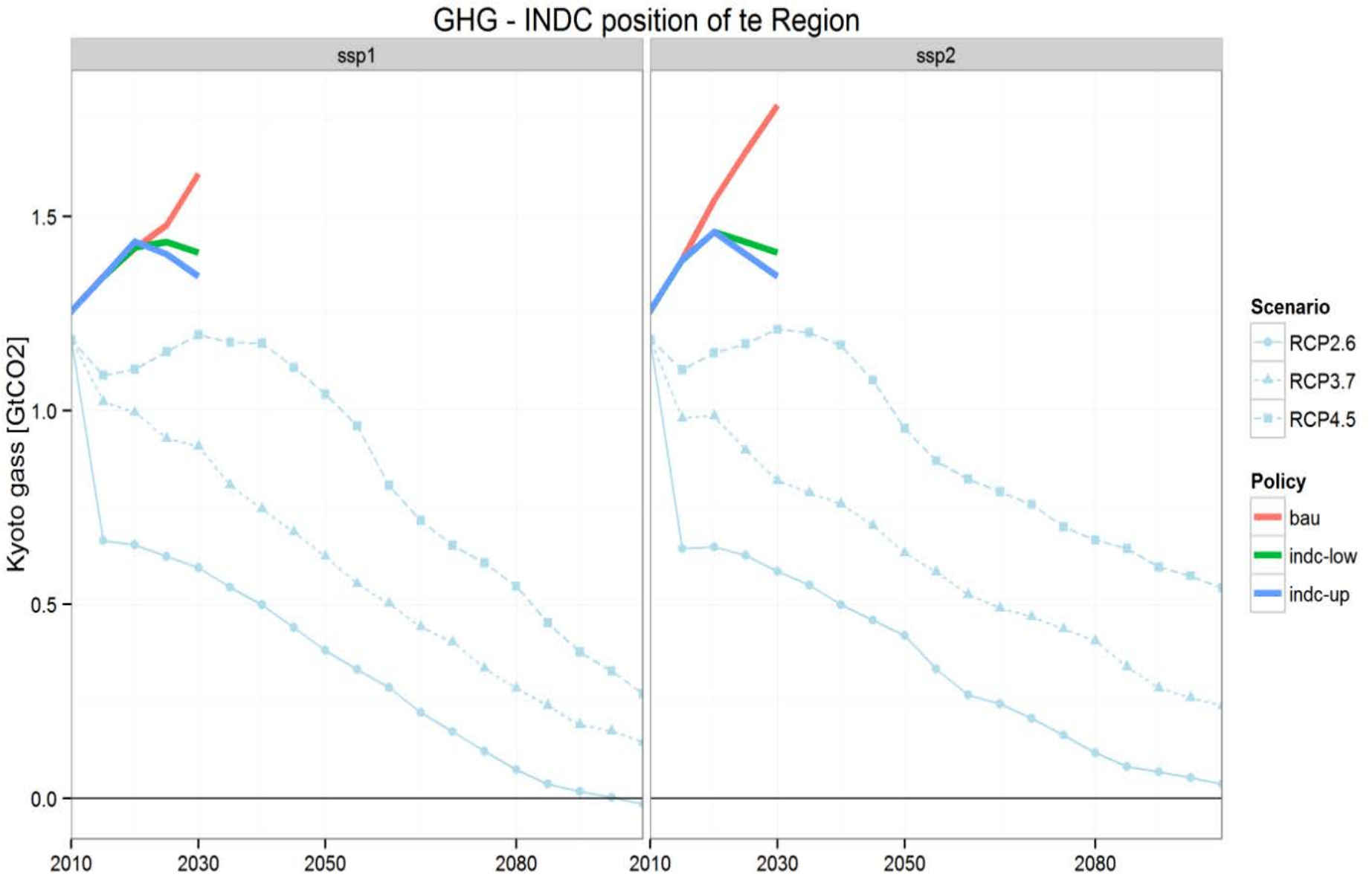
KOREA, SOUTH AFRICA AND AUSTRALIA



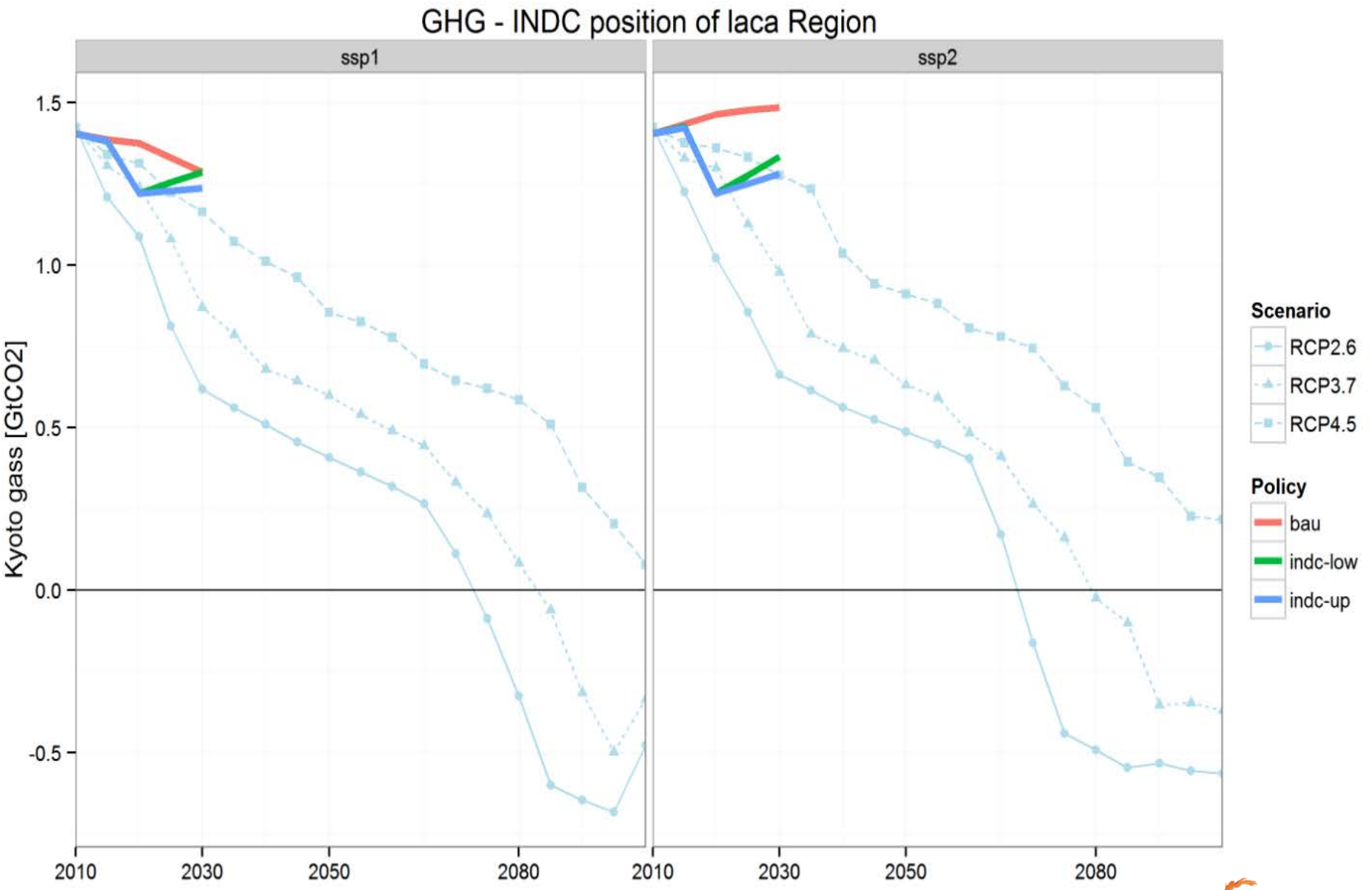
NEW EU COUNTRIES



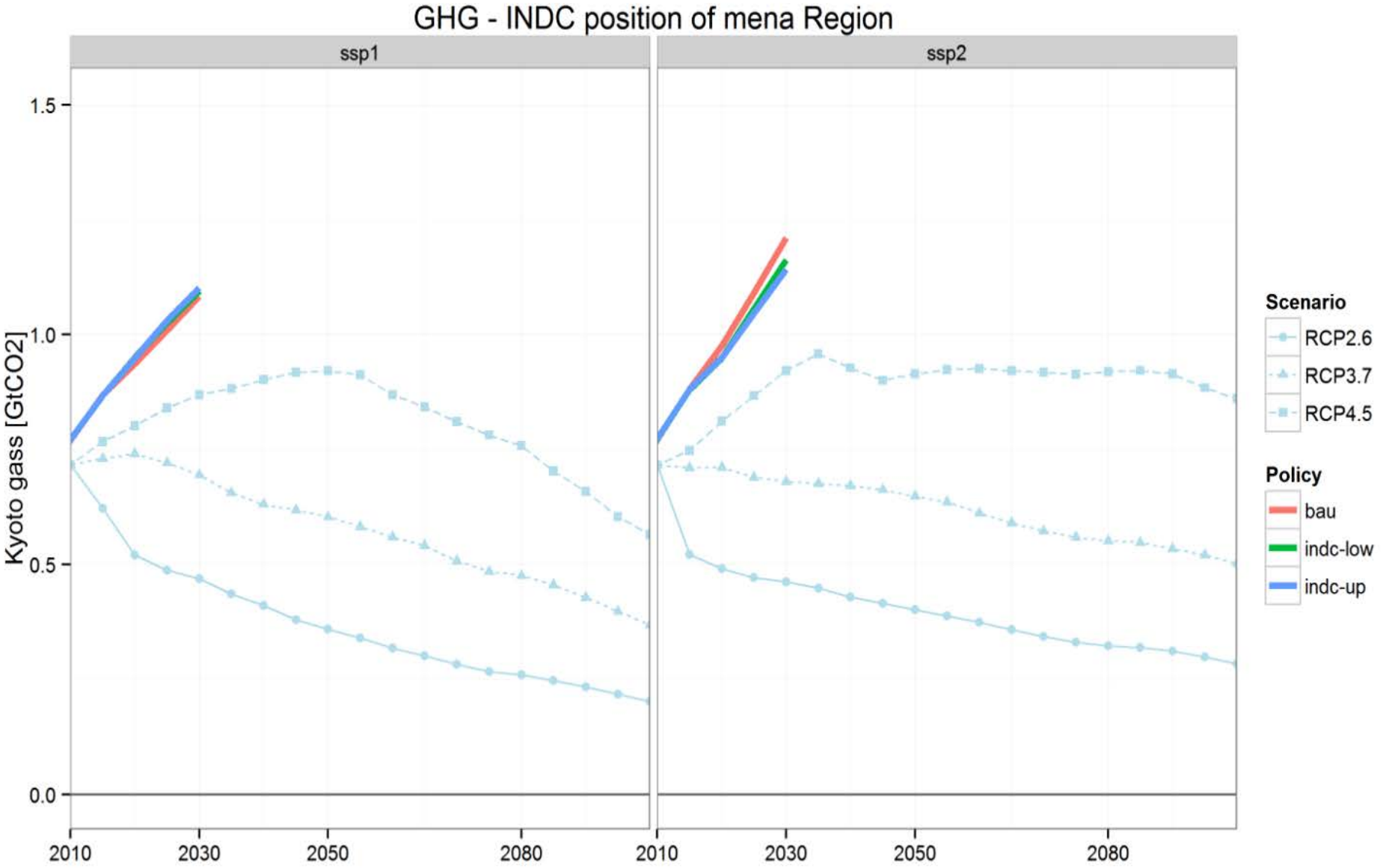
RUSSIA AND TRANSITION ECONOMIES



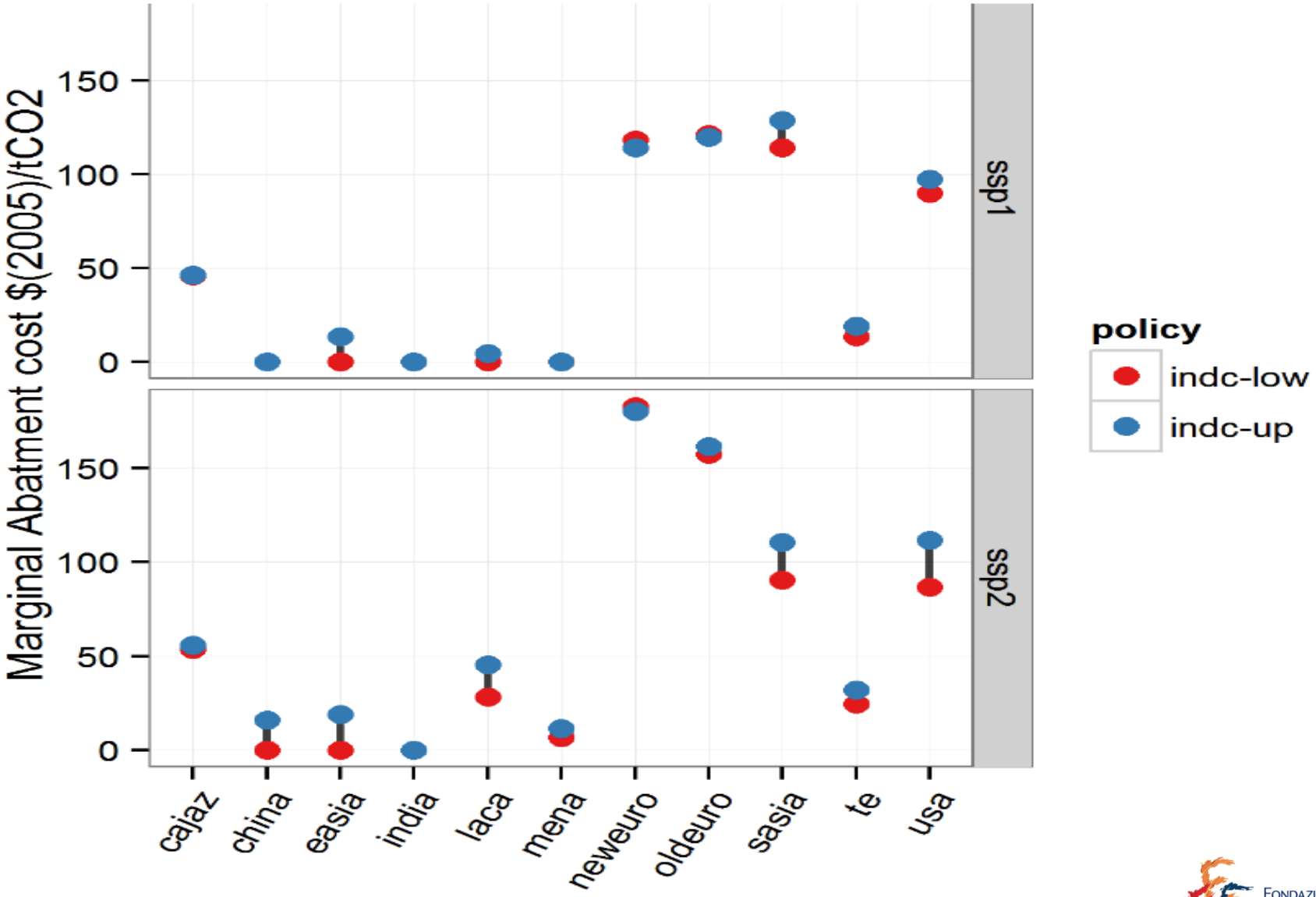
LATIN AND CENTRAL AMERICA



MIDDLE EAST AND NORTH AFRICA



MARGINAL ABATEMENT COSTS IN 2030



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Overall assessment of INDCs

Preliminary results show that:

- Globally, INDCs are almost on the right pathway to achieve the 2°C target
- Many world regions are also on the right pathway, particularly OECD countries
- INDCs contain some degree of fairness:
  - Emission reductions increase with per capita income
  - marginal costs are higher in developed countries

Thank you !

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