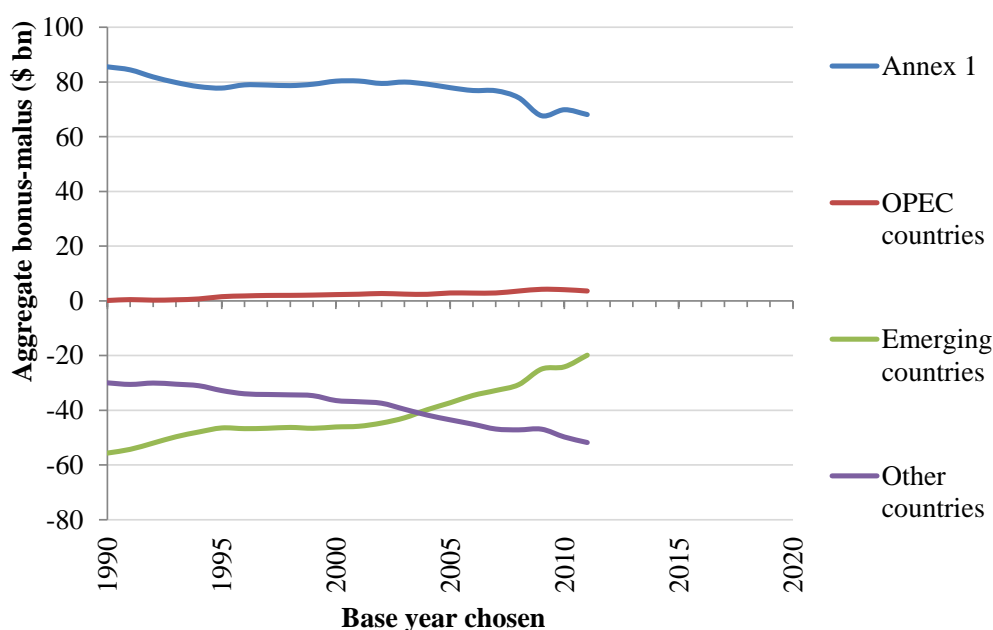


Appendix
Table 1 – Emissions by country

Main emitters	1990	2011	
	Emissions (gigatonnes of CO ₂)	Emissions (gigatonnes of CO ₂)	Cumulative emissions (%)
China	2.43	8.67	27.8
United States	4.86	5.31	44.8
EU-27	4.13	3.59	56.3
India	0.59	1.81	62.1
Russia	2.34	1.74	67.6
Japan	1.07	1.19	71.4
Korea	0.24	0.61	73.4
Iran	0.19	0.52	75.1
Canada	0.42	0.47	76.6
Mexico	0.29	0.45	78.0
South Africa	0.29	0.45	79.5
Saudi Arabia	0.14	0.44	80.9
Brazil	0.21	0.42	82.2
Indonesia	0.15	0.41	83.5

Source: International Energy Agency

Figure: Effect of the base year for the bonus-malus system (1990-2011)¹



Source: Climate Economics Chair based on World Resources Institute data (2014).

¹**Annex 1:** Australia, Belarus, Canada, USA, EU-28, Iceland, Japan, Norway, New Zealand, Russia, Switzerland, Ukraine. **OPEC countries:** Algeria, Angola, Saudi Arabia, Ecuador, United Arab Emirates, Iraq, Iran, Kuwait, Libya, Nigeria, Qatar, Venezuela. **Emerging countries:** South Africa, Argentina, Brazil, China, South Korea, India, Mexico, Singapore, Turkey.

Table 2 – Redistribution effects of a bonus-malus system (excluding forests and agriculture) on the basis of a \$100 billion transfer or \$7.5 per tonne of CO₂ (2011 emissions)

	Total emissions (MtCO₂ eq.)	Population (million)	Emissions per capita (tCO₂ eq.)	Bonus-Malus (\$ million)
Contributors				
United States	6,550	312	21.0	34,428
China	10,553	1,344	7.9	15,742
Russia	2,374	143	16.6	11,064
EU-28	4,541	503	9.0	10,325
Japan	1,307	128	10.2	3,776
Canada	716	34	20.9	3,752
Australia	563	22	25.2	3,172
South Korea	688	50	13.8	2,810
Saudi Arabia	533	28	19.2	2,687
Iran	716	75	9.5	1,809
Others	4,495	399	11.3	14,889
<i>Total of contributors</i>	<i>33,036</i>	<i>3,038</i>	<i>10.9</i>	<i>104,454</i>
World	43,413	6,903	6.3	0
Beneficiaries				
India	2,486	1,221	2.0	-38,955
Bangladesh	129	153	0.8	-6,244
Pakistan	308	176	1.8	-5,997
Nigeria	325	164	2.0	-5,311
Indonesia	835	244	3.4	-5,241
Philippines	150	95	1.6	-3,362
Ethiopia	125	89	1.4	-3,282
Vietnam	274	88	3.1	-2,087
Rep. Dem. Congo	172	64	2.7	-1,727
Tanzania	73	46	1.6	-1,639
Others	5,501	1,524	3.6	-30,609

Source: Climate Economics Chair based on World Resources Institute data (2014).