

GTAP-E: AN ENERGY-ENVIRONMENTAL VERSION OF THE GTAP MODEL

Reaching Kyoto greenhouse gas emission reduction targets with
and without emission trading

Annual Short Course in Global Trade Analysis - DO NOT QUOTE/CITE

GTAP-E – GHG REDUCTION TARGETS AND GHG EMISSION TRADING

- ✘ Carbon dioxide accounting; carbon taxation
- ✘ Emission trading
- ✘ Modified treatment of energy demand:
 - + Energy – capital substitution
 - + Inter-fuel and fuel-electricity substitution
- ✘ Kyoto means GHG emission ceiling / reduction targets for countries signed Kyoto agreement:
Annex I countries

THREE EMISSION TRADE SCENARIOS

1. No emission trading: Annex I countries must reach Kyoto targets independently
2. Emission trading among Annex I countries only
3. Emission trading among Annex I countries and rest of the world

EMISSION REDUCTION AND MARGINAL COSTS

	No trade		Annex I trade		Global trade	
	% reduction	CO2 price	% reduction	CO2 price	% reduction	CO2 price
USA	-17	68	-16	60	-7	22
EU27	-17	90	-12	60	-5	22
EEFSU	2	0	-21	59	-10	22
JPN	-30	248	-11	60	-5	22
RoA1	-40	276	-16	60	-7	22
EEx	2	0	1	0	-5	22
CHN	0	0	0	0	-17	22
IND	1	0	1	0	-16	22
ROW	2	0	1	0	-8	22
Annex I	-17		-15		-7	
Non-Annex I	1		1		-11	
Leakage rate (inc. EEFSU)	6.4		n/a		n/a	
Leakage rate (exc. EEFSU)	4.9		4		n/a	

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