

Find your way around the various flexibility mechanisms under the European burden-sharing

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Enerday Conference – Dresden – April 2019



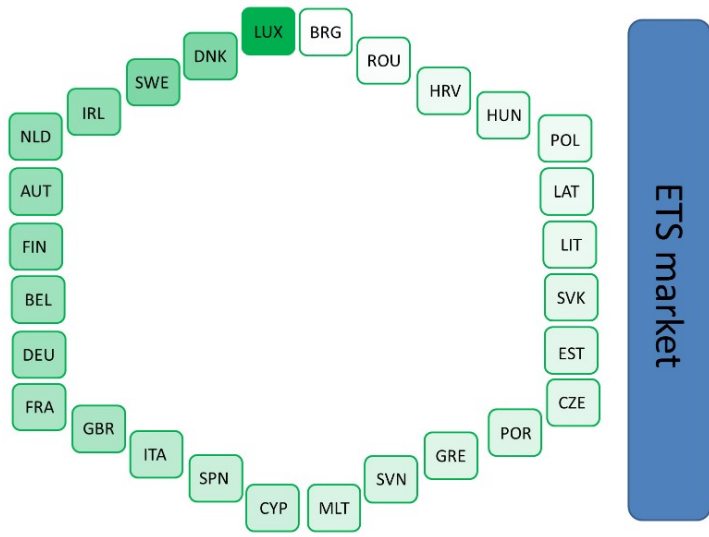
- Evaluate the new 2030 EU burden sharing
- Analyse the economic impacts of various flexibility mechanisms
- Overall GHG emissions target in 2030: -40% with respect to 1990 levels
 - ETS emissions: -43% with respect to 2005 levels
 - ESD emissions: -30% with respect to 2005 levels

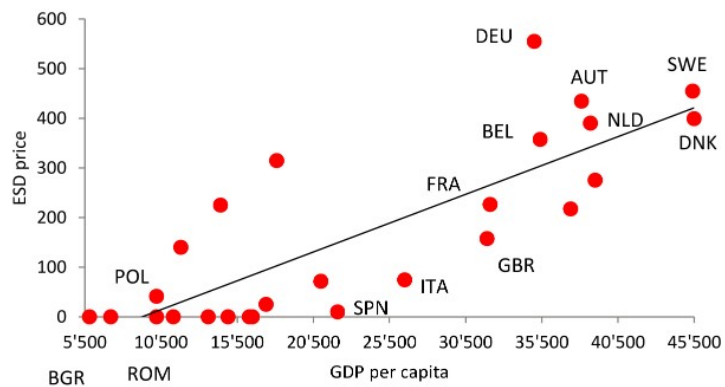
Table: Effort Sharing Decision based on GDP per capita in % of 2005 levels

Bulgaria	0%	Cyprus	-24%
Roumania	-2%	Spain	-26%
Croatia	-7%	Italy	-33%
Hungary	-7%	United Kingdom	-36%
Poland	-7%	France	-36%
Latvia	-6%	Germany	-37%
Lithuania	-9%	Belgium	-38%
Slovakia	-12%	Finland	-39%
Estonia	-13%	Austria	-39%
Czech Republic	-14%	Netherlands	-39%
Portugal	-17%	Ireland	-39%
Greece	-16%	Sweedeen	-40%
Slovenia	-15%	Denmark	-40%
Malta	-19%	Luxembourg	-40%

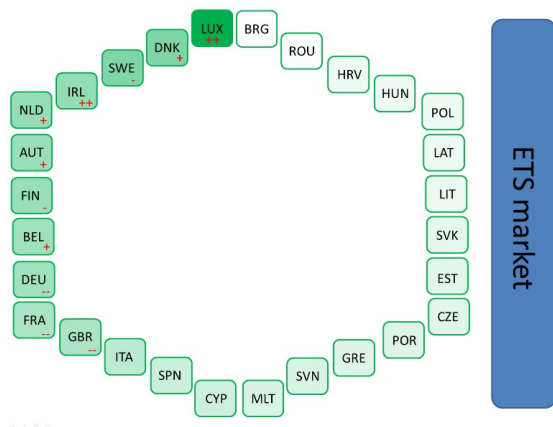
Navigation icons: back, forward, search, etc.

- Standard computable general equilibrium model
- EU version: 28 European countries + China + Rest of the World
- 11 goods/sectors:
 - 3 ETS sectors: Refineries, electricity generation, energy intensive sectors
 - ESD sectors: agriculture, transport, other goods and services + households
- Database: GTAP 9
- Consider CO₂ emissions from energy combustion
- Reference scenario 2011-2030 calibrated from "EU reference scenario 2016" done with PRIMES

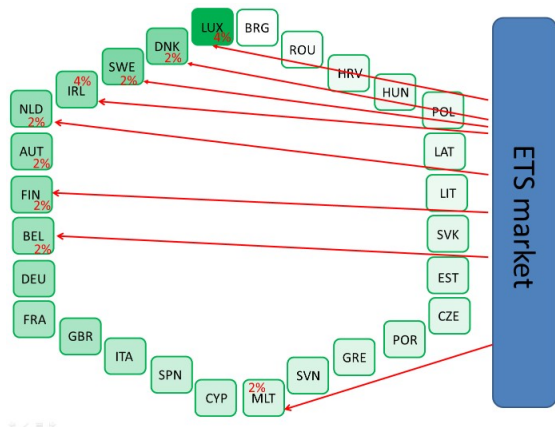




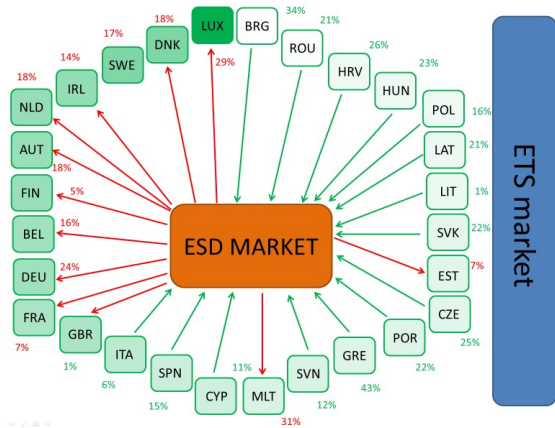
- ESD CO₂ average price = 209 €
- 9 ESD CO₂ prices = 0 → Hot Air \simeq 30 Mt CO₂ in 2030
- ETS CO₂ price = 45 €



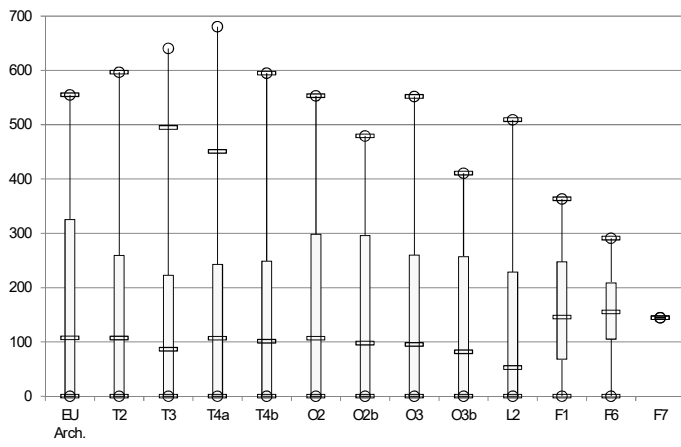
- Only high income Member States: AUT,BEL,DEU,DNK,FIN,FRA, IRL,LUX,NLD,SWE
- $-2\% \leq \text{target adjustment} \leq +13\%$

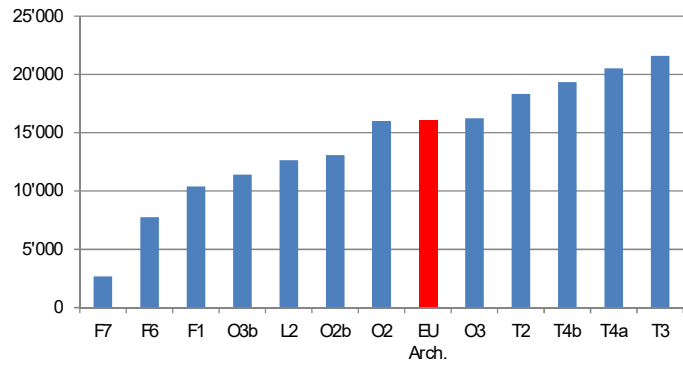


- Only high income Member State: AUT,BEL,DEU,DNK,FIN,FRA, IRL,LUX,NLD,MLT,SWE
- $2\% \leq \text{access limit} \leq + 8\%$

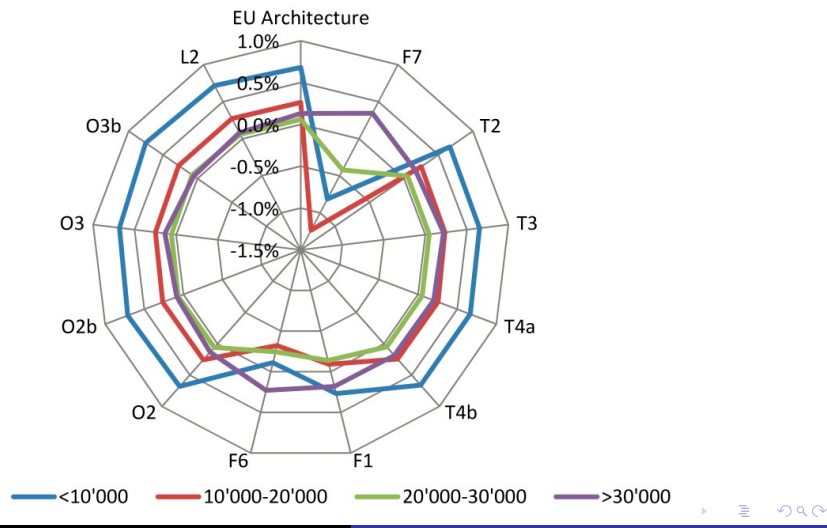


- F1=5% trade limit, F6=10% and F7=no limit





Flexibility options and EU Welfare cost in % of household consumption per Member State income levels (GDP per capita)



- The new EU burden sharing is highly questionable with respect to
 - Environmental effectiveness “Hot air”
 - Cost-efficiency
- The EU partly acknowledges these points by proposing several flexibility mechanisms
- Target adjustment options fail to reintroduce flexibility
- One-off flexibility options between ETS and non-ETS are too limited
- Only inter-Member state flexibility options is the most attractive:
 - It tend to equalizing ESD prices ! reduce overall EU welfare cost
 - Increase the welfare of low-income Member States through selling of quotas
 - But must be extended in term of % of allocations that are allowed to be traded
- The forthcoming EU burden sharing should consider additional criteria: existing situation (grandfathering) and cost-efficiency