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**International Conference on elements of a Greenhouse
Gas Neutral Society – 10th-11th October 2013: Berlin**



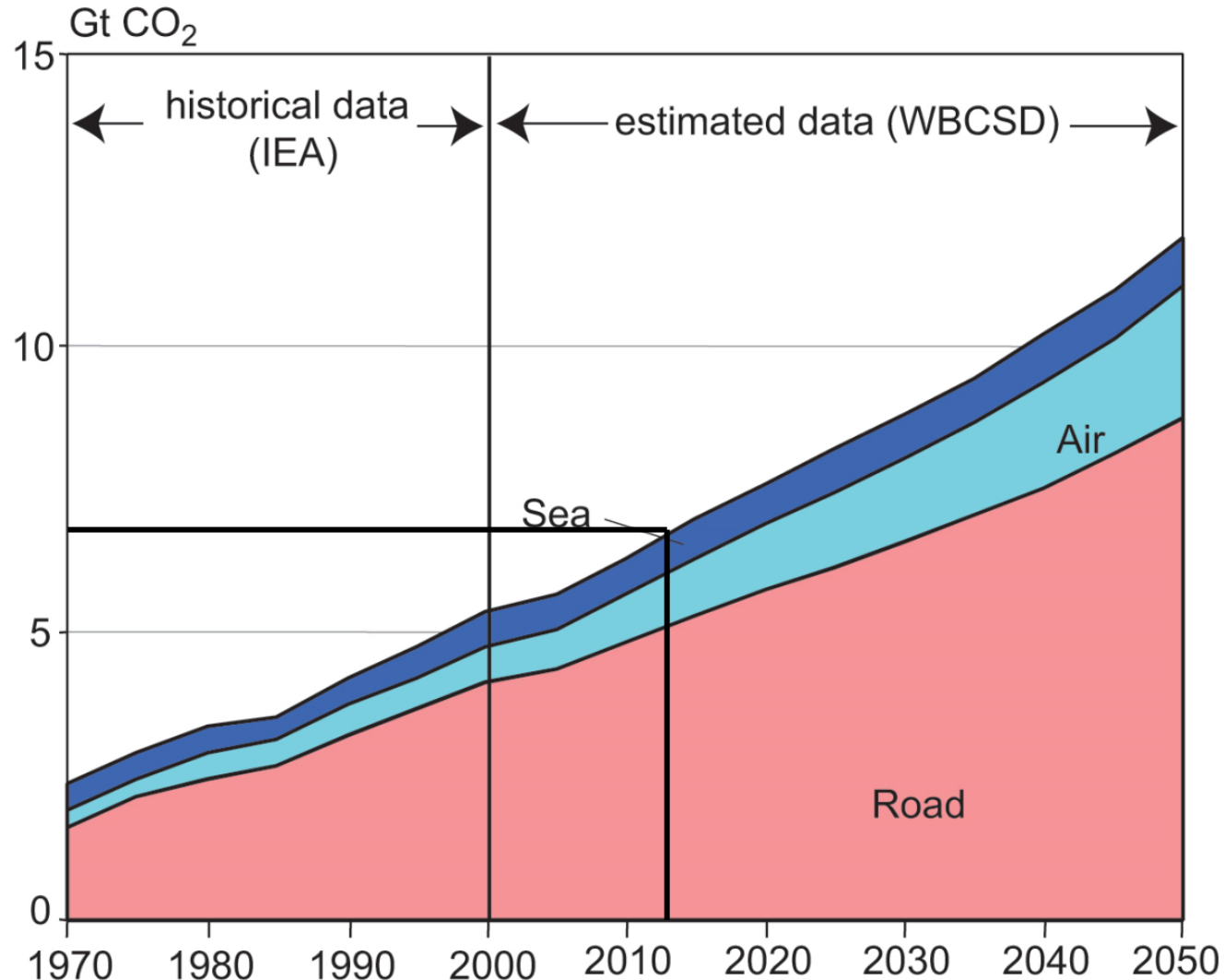
The Global Responsibility of the Transport Sector

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Global Perspective

1. Transport brings enormous benefits – globalisation, travel and trade
2. Totally dependent on oil – uses 54% global oil (over 71% in the EU27)
3. Major contributor to CO₂ emissions – 6.8 Gt CO_{2eq} (2010) - about 25%



IPCC 2007: Figure 5.4: *Historical and projected CO₂ emission from transport by modes, 1970–2050* Source: IEA, 2005; WBCSD, 2004b.



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Limited Action in Transport

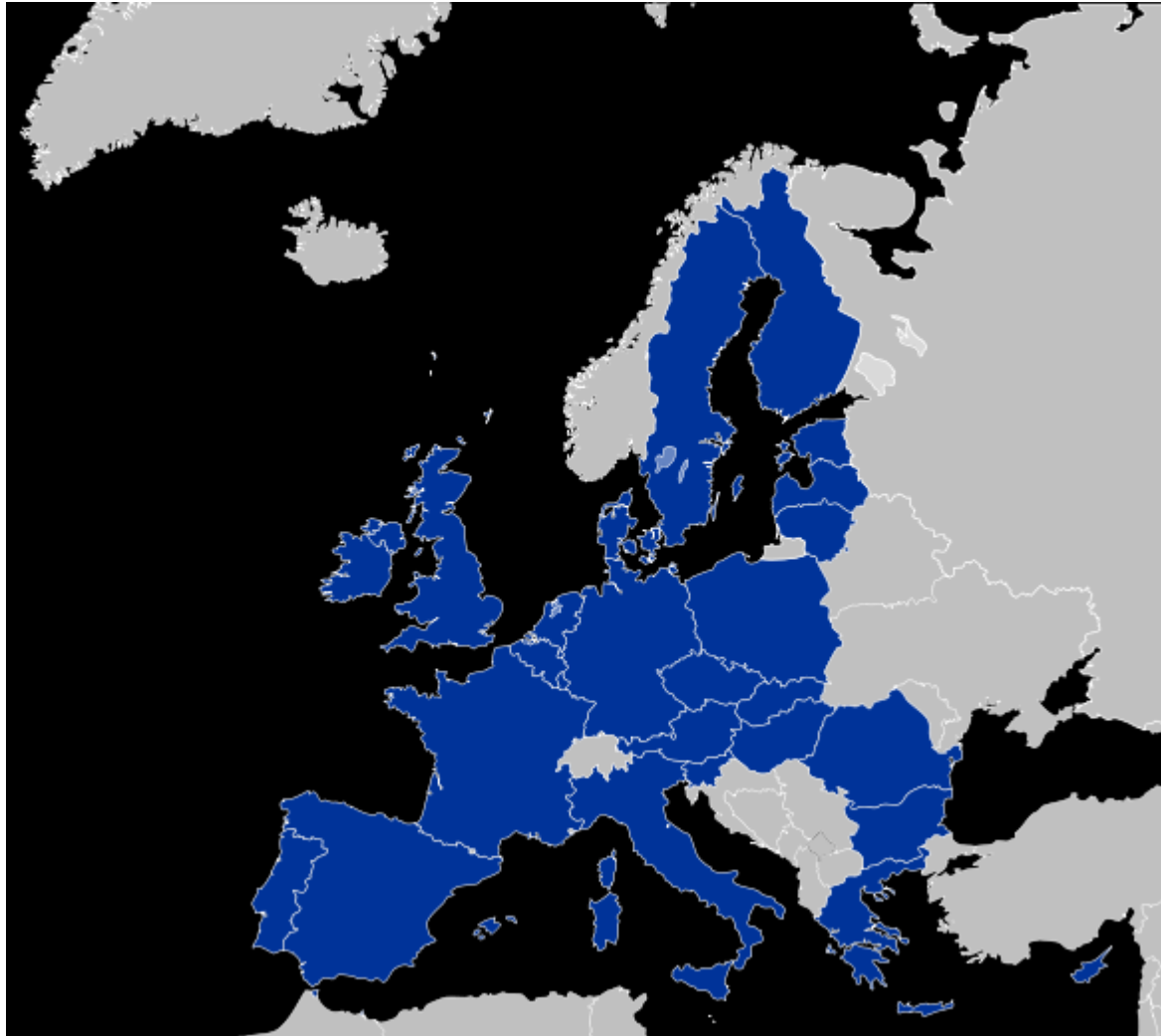


EU27 Growth in Transport Emissions 1990-2009 – MtCO₂e

1990	951.1	16.5%
1995	1029.3	19.0%
2000	1161.8	21.8%
2005	1259.6	23.1%
2008	1224.6	25.0%

+29%

+8.5%



Source: EC (2011) EU Transport Statistical Pocketbook 2012



Global Governance



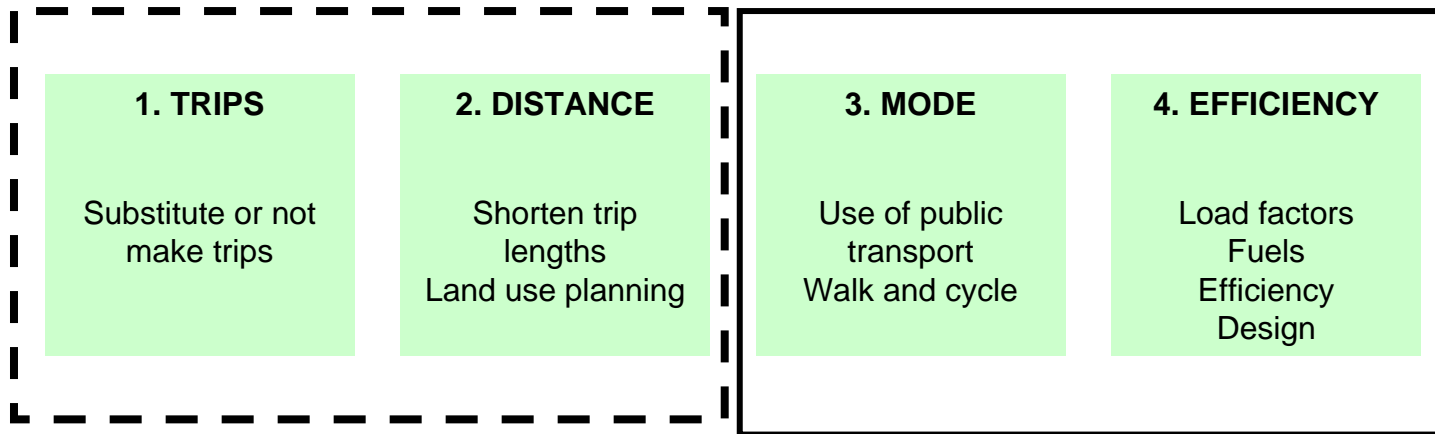
1. Debates over responsibilities – developed v developing
2. Complexity and contestability – aviation and maritime

From production accounting – exporting emissions – to consumption based accounting to allocation emissions to end users

	2008	2050
Land transport	6.6 Gt CO ₂ (22%)	3.2 – 3.6 Gt CO ₂ (20-22%)
Air transport	0.730 Gt CO ₂ (2.2%)	2.4 – 3.2 Gt CO ₂ (15-20%)
Shipping	1 Gt CO ₂ (3.1%)	2.4 – 3.6 Gt CO ₂ (15-22%)
Global Total	29.381 Gt CO₂	16 Gt CO₂ (100%)

Notes: 2050 figure is 50% of 2005 figure. This means that nearly 65% of all carbon emissions could come from transport – see figures above. Air transport figures from IEA (2008) and shipping from the second IMO GHG CO₂ study (2009).

Reality has been to increase transport to promote economic growth, at a lower environmental cost – by promoting modal shift and technological innovations



Need to concentrate on these two elements as well – these have been ignored



Increasing transport volumes and distances means more CO₂ perhaps at a lower level

Sustainable Mobility Paradigm requires strong action in all four elements



Rethinking Urban Mobility

Car as a compromise – not good at doing what it ought to do:

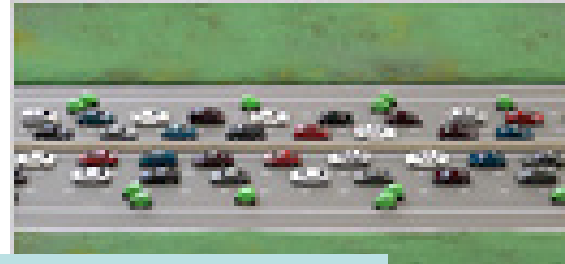
1. Major investment – buying a car
2. Value falls 50% over two years – asset or liability
3. Multi functional – 4 people when normally only one
4. Energy inefficient – weight 1200kg to carry 75 kg
5. Huge amount invested in the support system
6. Dominates the urban environment in many cities
7. Substantial environmental and social costs

But symbolic of success, image and status?



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Urban Car – C21



1. Shrink the car – less parking, more open space – light weight materials
2. New ownership patterns – sharing and leasing
3. Service based transport
4. Efficient public transport
5. Potential for small, slow electric vehicle – not as a replacement but a new mode of transport





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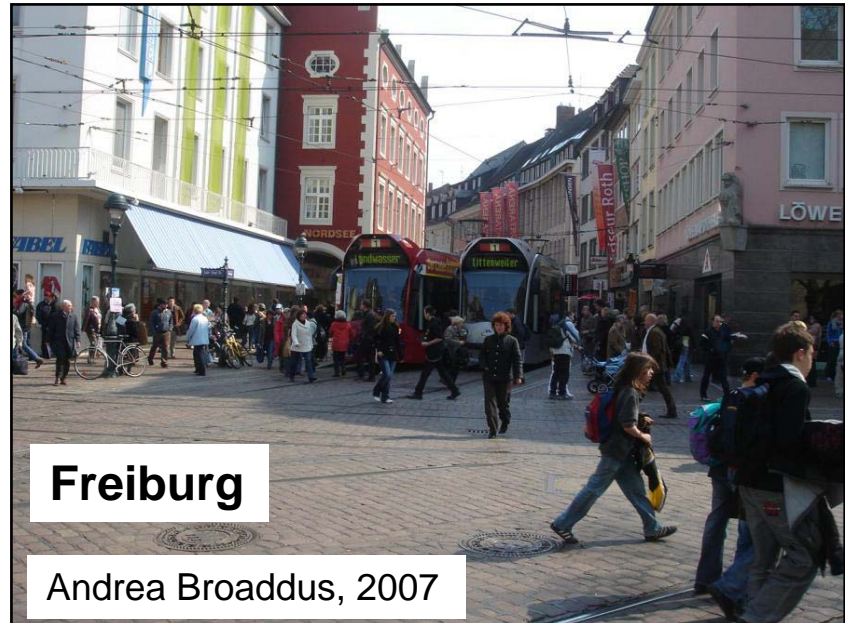
Collaborative Consumption and Changing the Dynamic



Lifestyles – buy-use-trash lifestyle – needs to change – sharing renting borrowing – circular economy

Resources and public finance embedded in the system – to promote higher levels of mobility. Better use of existing capacity – space as a resource

European cities – high levels of walking and cycling – over 50% of trips – and public transport 20-30%





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City transport in a post carbon society – the Greenprint



1. Slower travel to improve quality of life, to contribute to CO₂ reductions, and to increase safety and health benefits
2. Travel time savings linked to travel time reliability and reasonable travel times – creative use of time when travelling
3. Smaller vehicles – cars and vans – less parking and more open and green space – reallocation of space to cyclists and walkers – use of active transport modes for at least 50% of trips
4. Local pollutants have a direct effect on health and quality of life – zero or low emissions zones
5. Promote active travel – cycling and walking. 66% of adults do not get enough exercise
6. Investment in clean efficient public transport
7. Potential for a small, slow, clean, shared or leased vehicle – a new mode of transport



Hangzhou, China Karl Fjellstrom, 2006



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The Future of Sustainable Mobility



Agenda:

1. Include international travel – people and goods – look at means to reduce global supply chains
2. Move to Consumption based accounting for CO₂
3. Realistic pricing of CO₂ – at least \$200 tCO₂
4. Move beyond technological optimism and investment in (green) infrastructure – path dependency – to demand and capacity management
5. Increase local production and collaborative consumption – substantially reduce travel distances – people and freight
6. Reassess the role of the car in the city

