ENVIRONMENTAL TAX REFORM OF THE PRIVATE VEHICLE SECTOR – IRISH CASE STUDY

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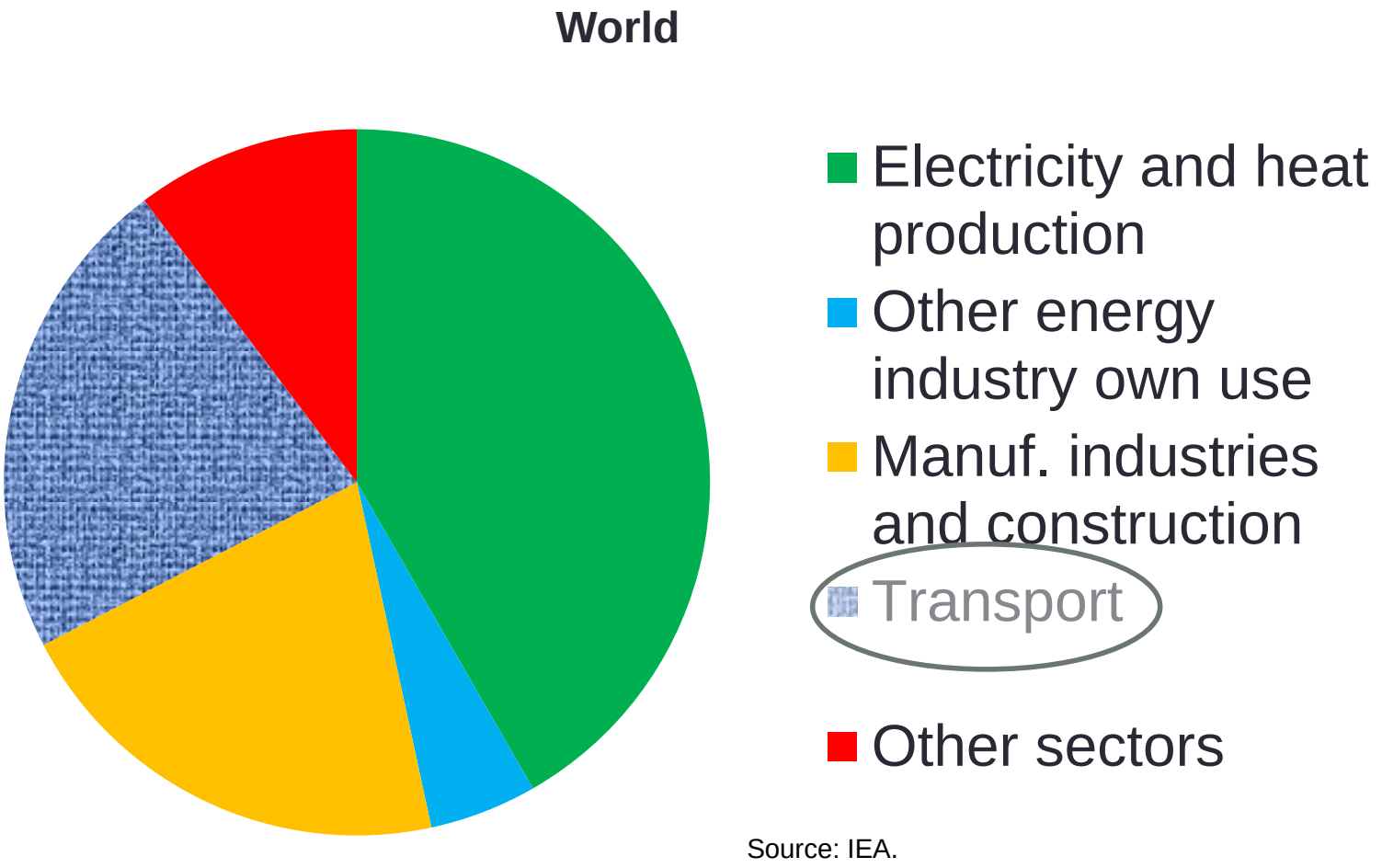
Overview

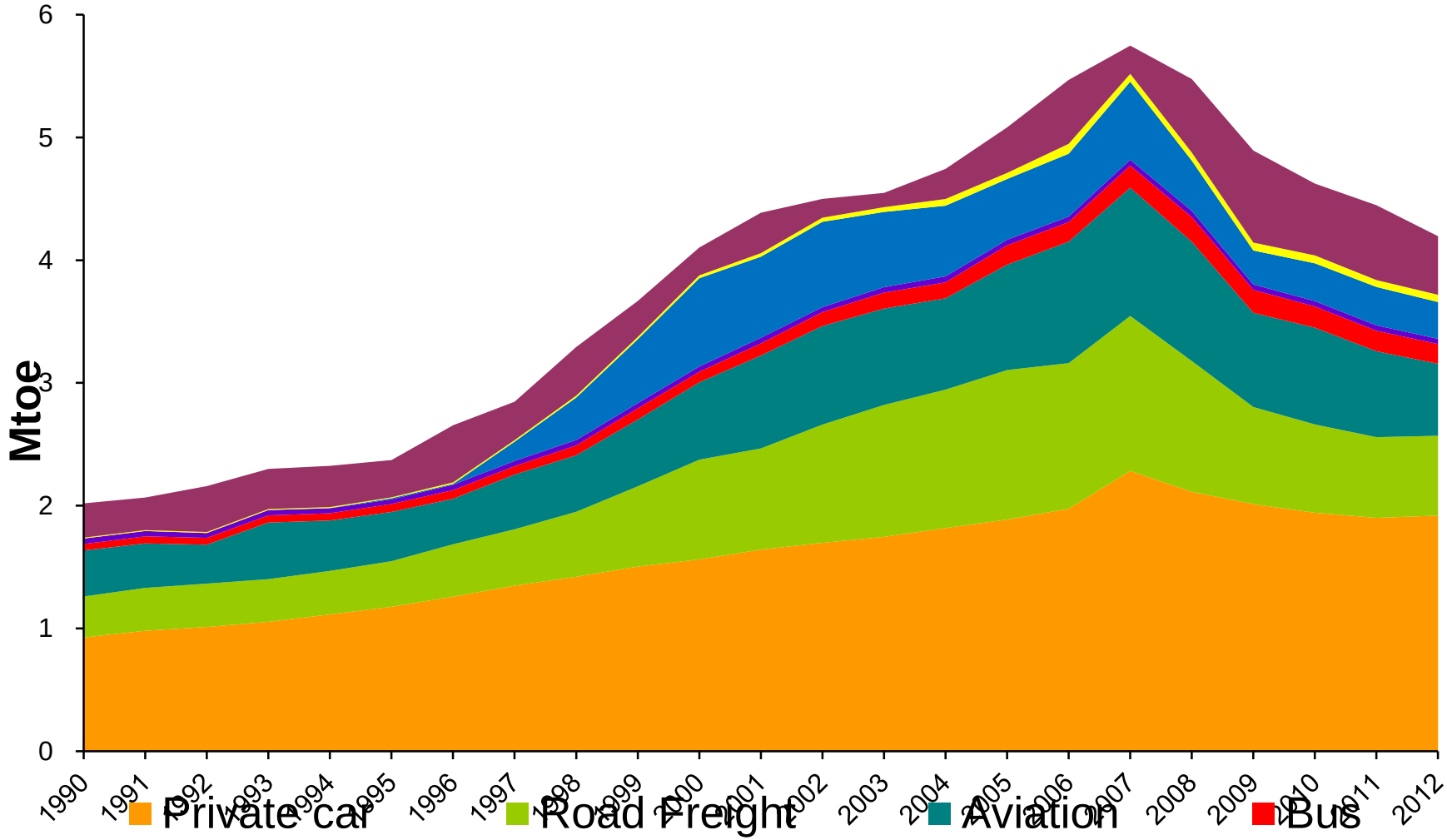
- Transport energy use and policy
- Role of economic instruments in transport energy efficiency policy:
  - Vehicle taxes
  - Fuel taxes
  - Carbon taxes
- Insights on economic instruments for vehicle CO2 emissions from Irish case study

World CO_2 emissions by sector 2011



Source: IEA.

Transport energy demand 1990-2012 Ireland



Source: SEAI (2014)

Context for transport energy use Ireland 2007 – 2012

- Economy -7.3%
- Energy use -19% (back at 1999 levels)
- Energy CO_2 emissions -21% (back at 1997/1998 levels)
- Transport energy use -27% (back at pre-2001 levels)
- Industry energy use -13% (back at 1999 levels)
- Industry's economic output - 4.7%
- Energy use in buildings -16% (climate corrected)

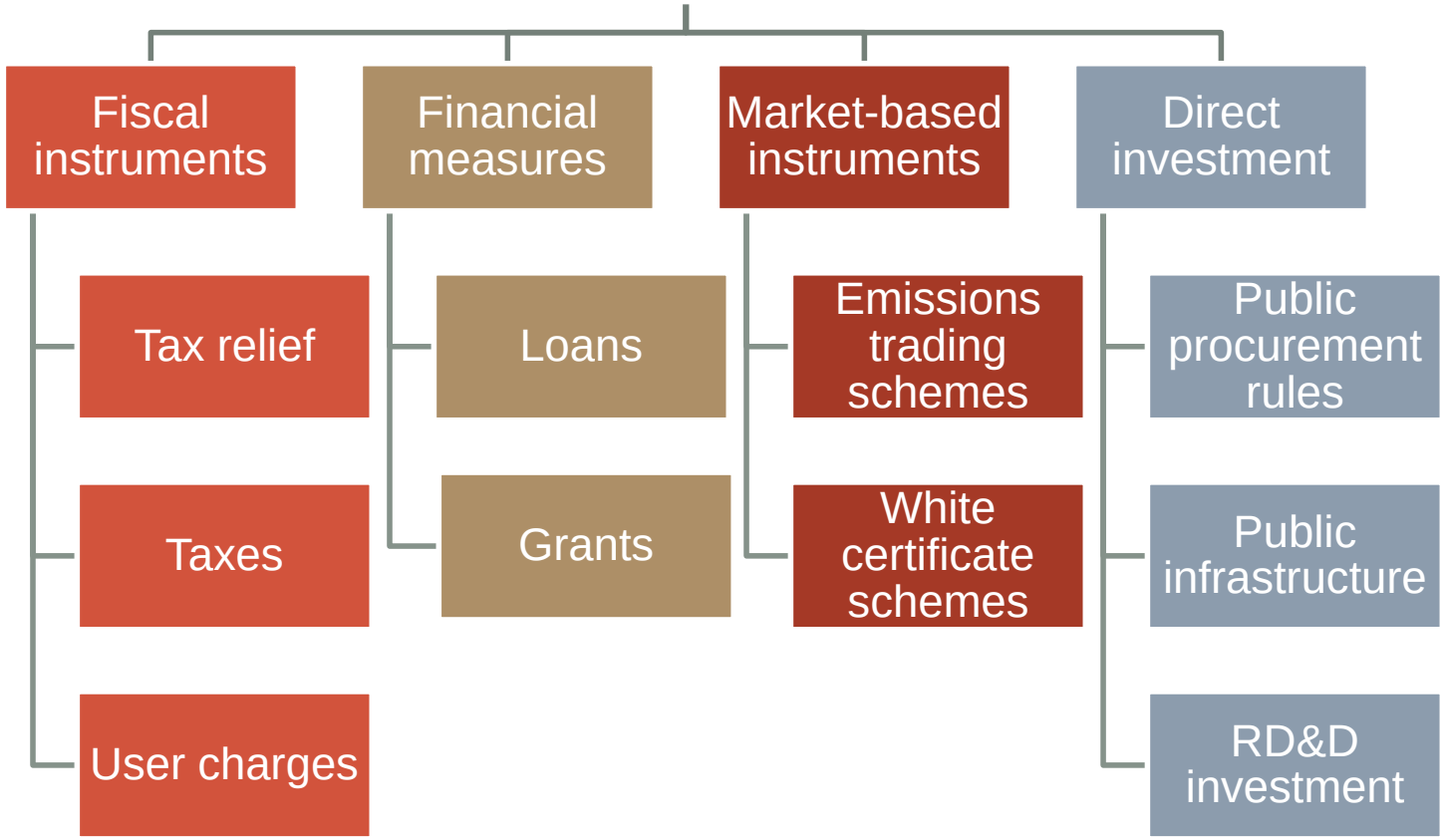
Source: SEAI Energy in Ireland

Transport policies were needed….

- To attenuate negative impacts
  - Reduce fuel consumed
  - Damage to the environment – GHG emissions
  - Health related issues – Local pollutants / Noise
  - Time loss - Congestion / Queuing / Waiting
- To (try to) provide equal access to mobility
  - Basic principle that individual should be able to move freely
  - Social equity
- To have safe and secure trips – reduce accidents

↳ To make transport sustainable

Economic policy instruments for energy efficiency



Examples of fiscal measures and passenger cars

- Vehicle taxes and subsidies
- Fuel taxes
- Congestion pricing
- Parking pricing

VEHICLE TAXES

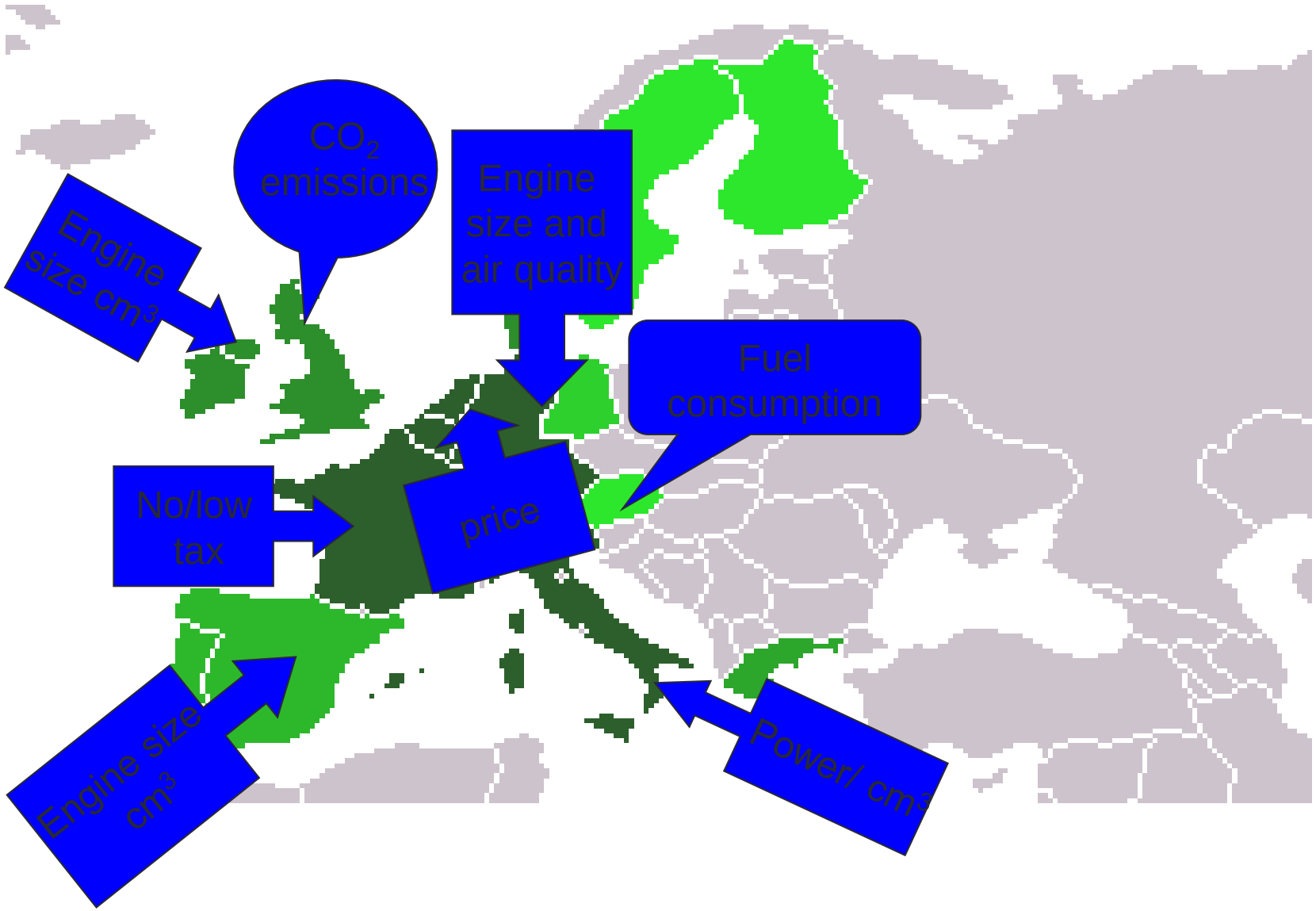
Vehicle taxes

Pricing: Vehicle tax incentives for efficient vehicles

- CO_2-differentiated purchase/registration and ownership/annual circulation tax
- Scrappage schemes, feebates
- Special tax credits for advanced hybrid or electric vehicles

Country	*Registration tax*	*Ownership tax*	*other tax incentives*
Belgium	based on cc + age Based on CO2 emissions in Wallonia	Based cylinder capacity	
Denmark	N.A	Based on fuel consumption and weight	
Germany	N.A	Based CO_2 emissions (since 2009)	Scrappage programme
Spain	based on CO_2 emissions (changed in 2008)	N.A	
France	based on CO_2 emissions	N.A	Bonus malus scheme introduced in 2008
Ireland	based on CO_2 emissions (changed in 2008)	Based CO_2 emissions	
Netherlands	based on price and CO_2 emissions. Since 2006	Based on weight, province	
Norway	N.A	purchase tax based on CO_2 emissions, Changed in 2006	CO_2 tax and fuel tax
Portugal	based on cc + CO_2 emissions	Based on cylinder capacity and CO_2 emissions	
Sweden	N.A	Based on CO_2 emissions and weight	eco car subsidy
UK	N.A	Based on CO_2 emissions and cylinder capacity	Vehicle excise duty based on CO_2 emissions (since 2009)
Japan	reduced registration tax for fuel efficient cars (since 2001)	N.A	subsidies for efficient cars

EU15 – 15 vehicle tax regimes in 2006



Econometric analysis of the effect of vehicle taxes across EU15 on...

New petrol/diesel vehicle sales

- Registration taxes more effective than annual motor taxes
- Fuel price ratio negative

CO_2 emissions intensity of the fleet

- Effect of annual motor taxes higher than registration tax
- Time frame makes a difference - factor of 2 between long and short run elasticities;
- Other factors: Improving efficiency over time through technical improvements but, Voluntary agreement not significant;

Ryan *et al.* (2009), Impact of fiscal and other measures on new passenger car sales and CO_2 emissions intensity: Evidence from Europe, Energy Economics, 31, p. 365–374.

Situation in 2014

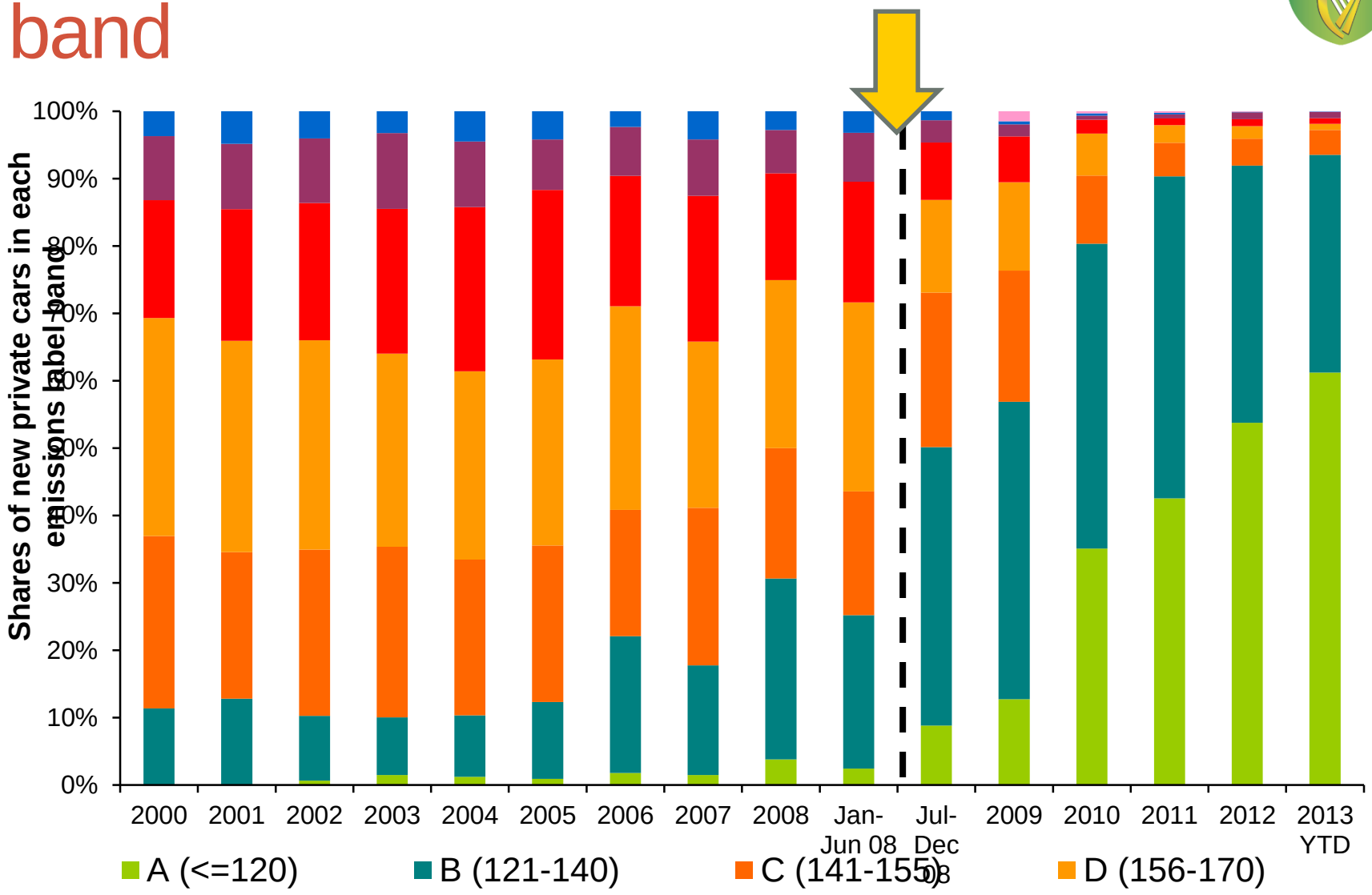
Vehicle CO2 taxes

- Austria,
- Belgium,
- Croatia,
- Cyprus,
- Denmark,
- Finland,
- France,
- Germany,
- Greece,
- Ireland,
- Latvia,
- Luxembourg,
- Malta,
- the Netherlands,
- Portugal,
- Romania,
- Slovenia,
- Spain,
- Sweden and
- the United Kingdom.

The Irish case: Vehicle tax CO2 bands

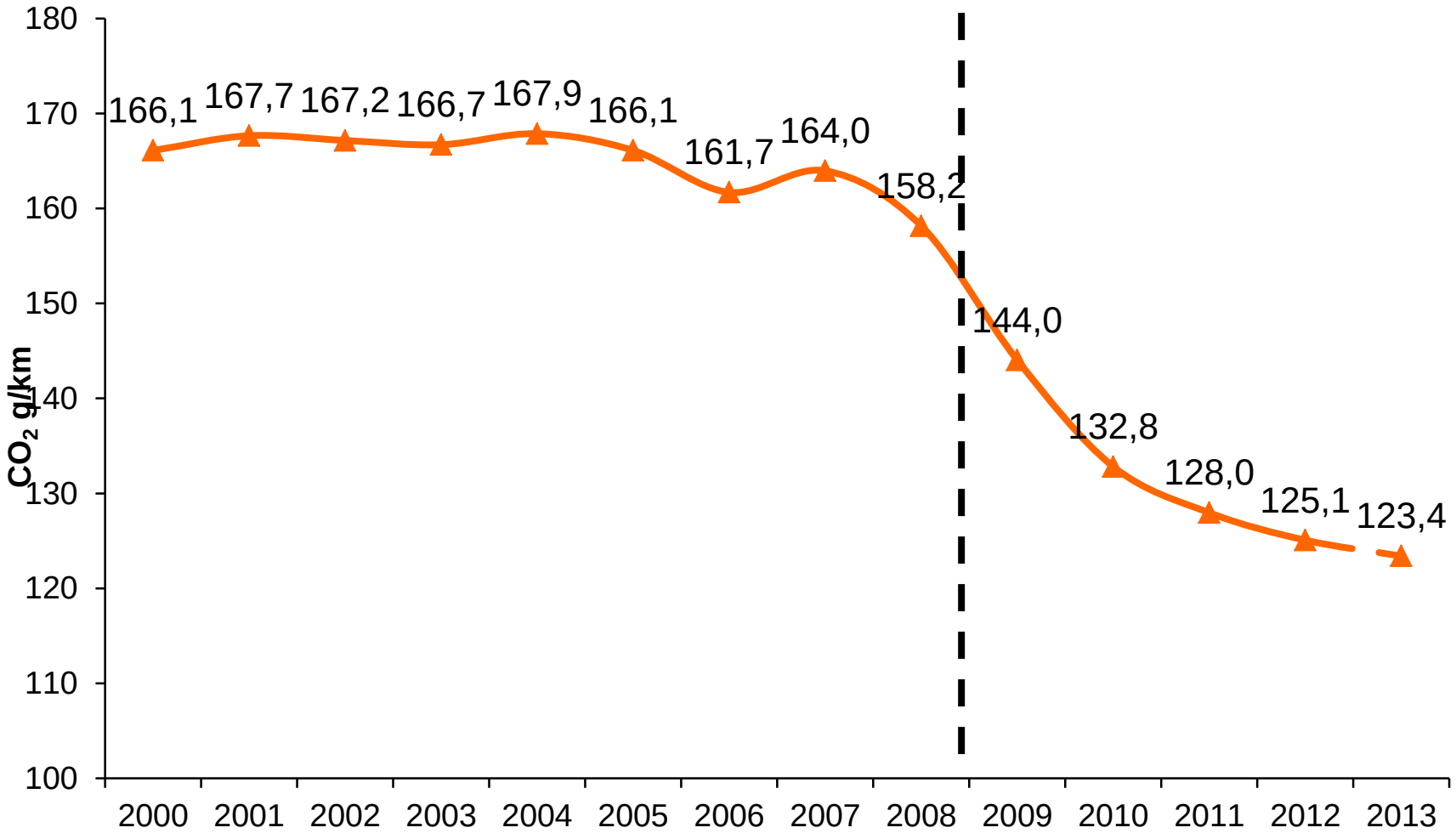
Band	CO2 emissions-gm per km	Annual motor tax €	VRT % OMSP
A0	0	120	14%
A1	1-80g	170	14%
A2	81 - 100g/km	180	15%
A3	101 - 110g/km	190	16%
A4	111 -120g/km	200	17%
B1	121 - 130g/km	270	18%
B2	131 - 140g/km	280	19%
C	141 - 155g/km	390	23%
D	156 - 170g/km	570	27%
E	171 - 190g/km	750	30%
F	191 - 225g/km	1,200	34%
G	More than 225g/km	2,350	36%

New passenger car sales by emissions band



Source: SEAI

CO_2 emissions of new passenger cars



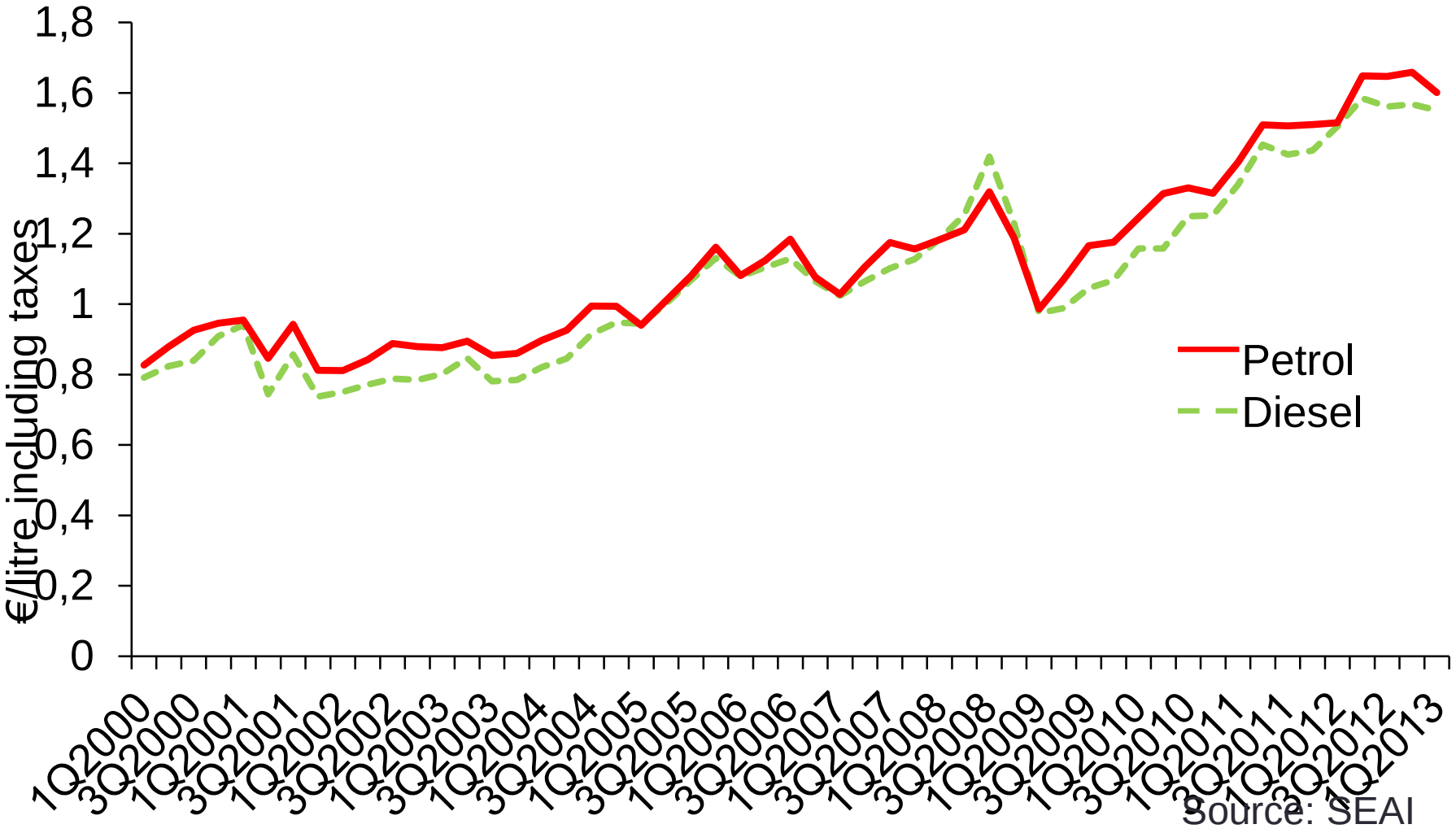
Source: SEAI

Improve Transport Energy Use - Potential rebound effects

- As cars become more efficient, mileage rises
  - Cost of use should rise accordingly
- High up-front costs might lead to willingness to use the vehicle, no matter the cost of use
  - Ownership also to be looked at
- Trip time decrease also implies longer trips
  - Average speed to be kept under control
- Technological answers have to be implemented together with accompanying measures counter balancing negative effects

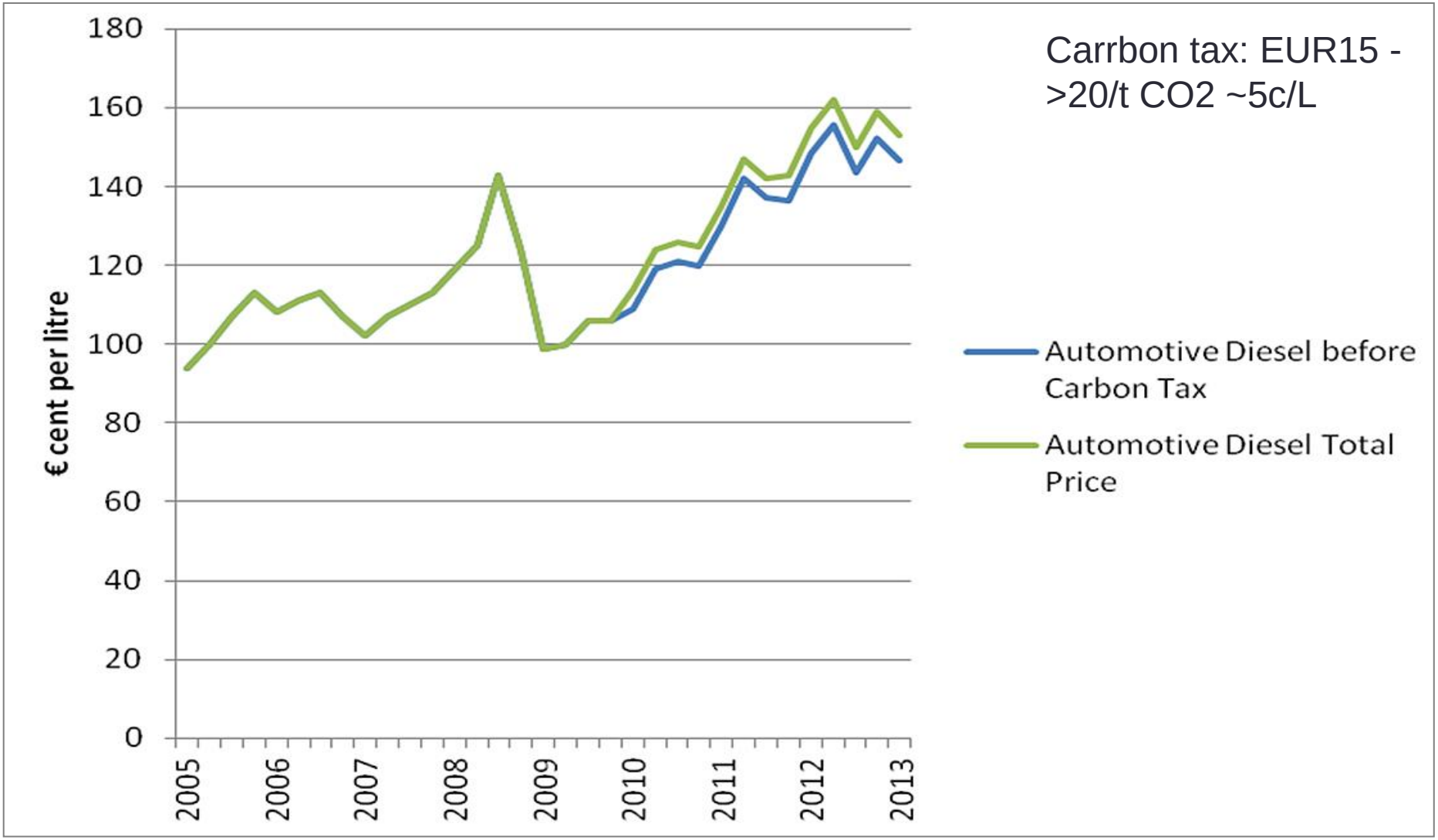
FUEL PRICES AND CARBON TAXES

Irish petrol and diesel fuel prices

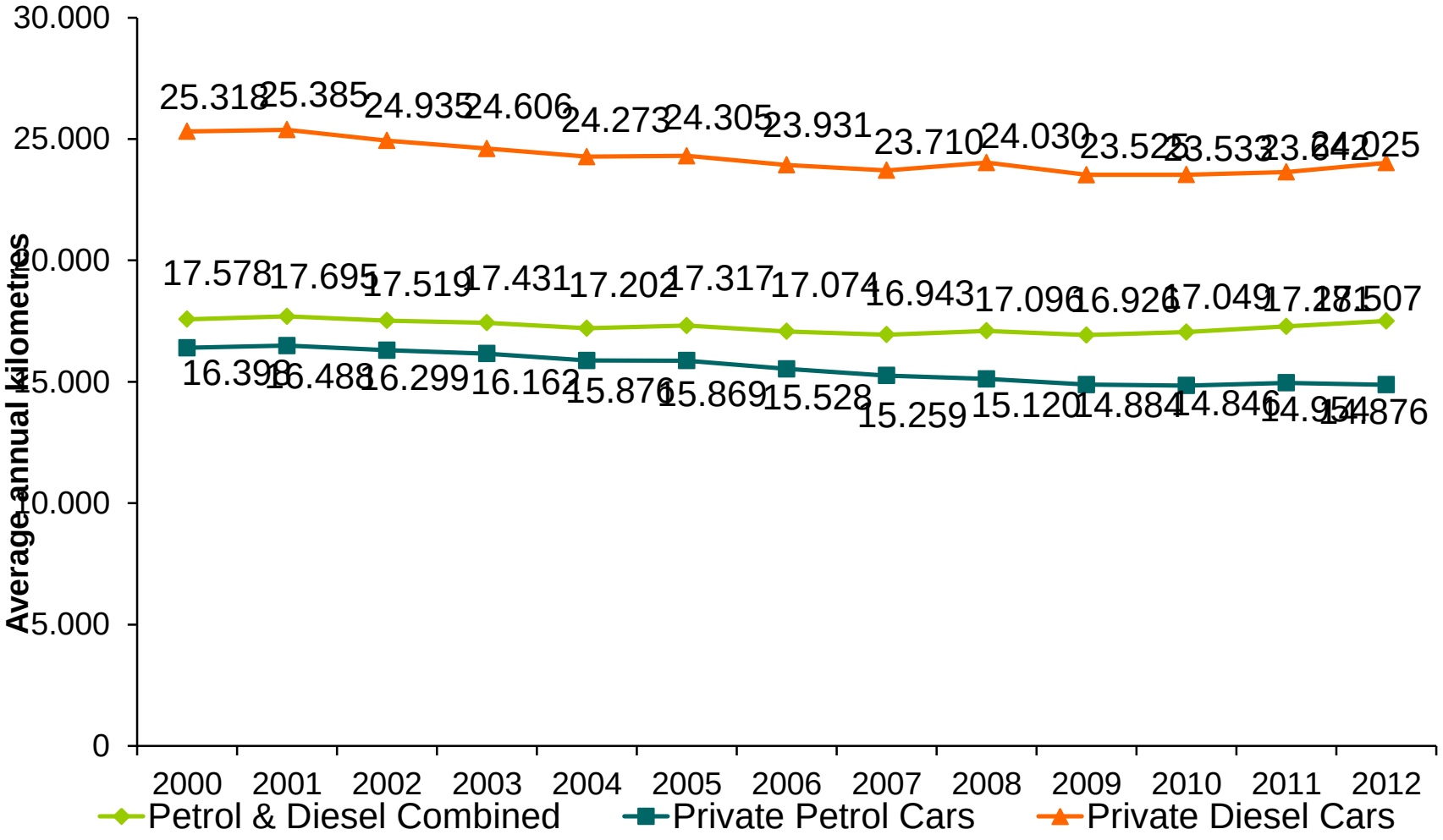


Source: SEAI

Effect of carbon taxes on diesel fuel

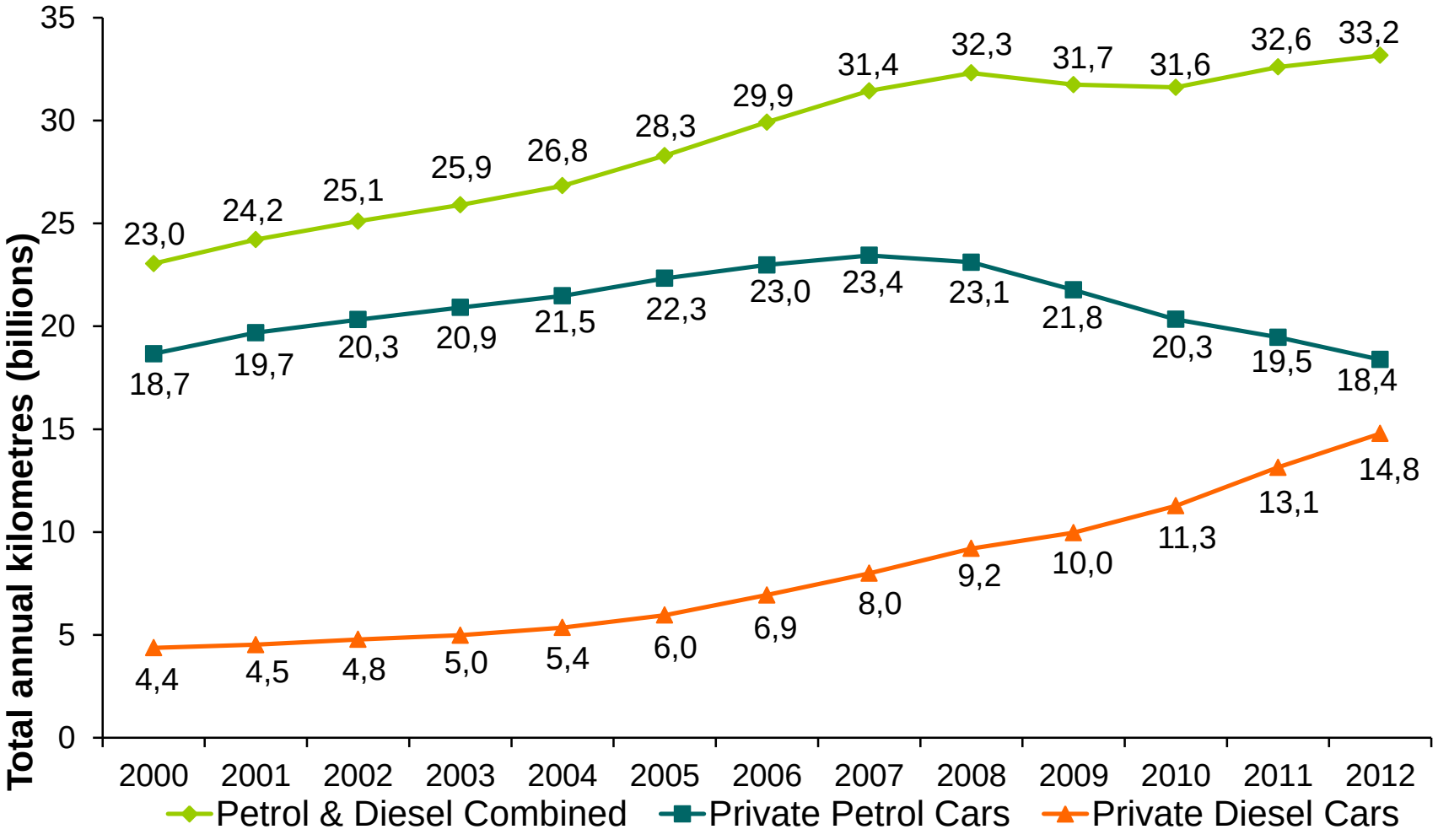


Average annual mileage per car



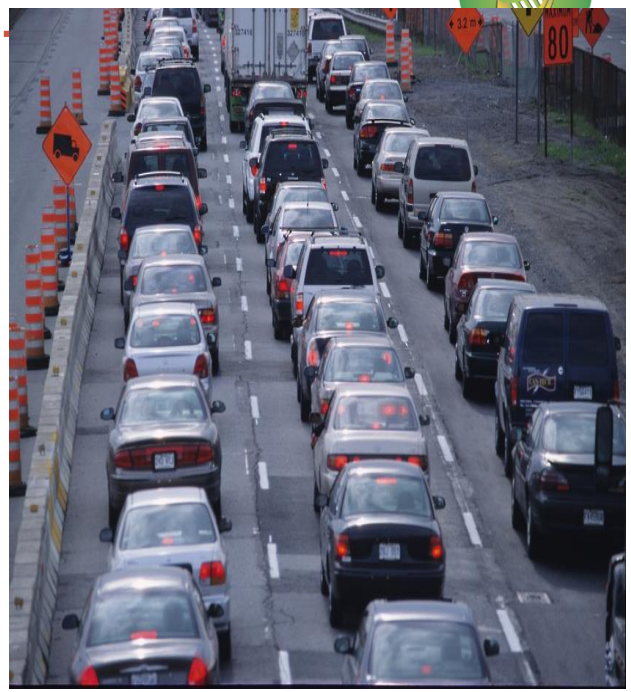
Source: SEAI

Annual total mileage



Source: SEAI

Summary: Taxes and passenger cars (Irish insights)



- Provide a price signal to transport-users to avoid-shift-improve
- Economically efficient and effective if designed right – Irish vehicle taxes
- Should be combined with regulatory instruments and account for distributional effects

- Timing and mix of policy mix need to be right to stimulate market to invest in transport efficiency
- Next research steps: Econometric analysis to disentangle effects

THANK-YOU

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