Which policies can bring about the desired changes in passenger transport?

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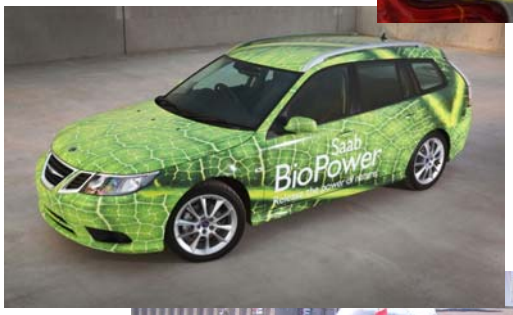
Objectives

- On EU level, the target is to have 10% renewables in the sector by 2020
- Several innovative technological options exist that can contribute to the reduction of transport emissions
- How can the introduction of technologies be facilitated?
- Which stage are those technologies currently in?

Find out which policy instruments are most effective in which technological development phase

The technological options are diverse



Policies can be generic or specific

Generic policy measures

- Do not target a specific technology
- 'Define the playing field' for the introduction of alternative technologies
- Mostly cost-related when related to conv. fuels
- Examples
  - Fuel tax
  - Road/circulation tax
  - Acquisition tax

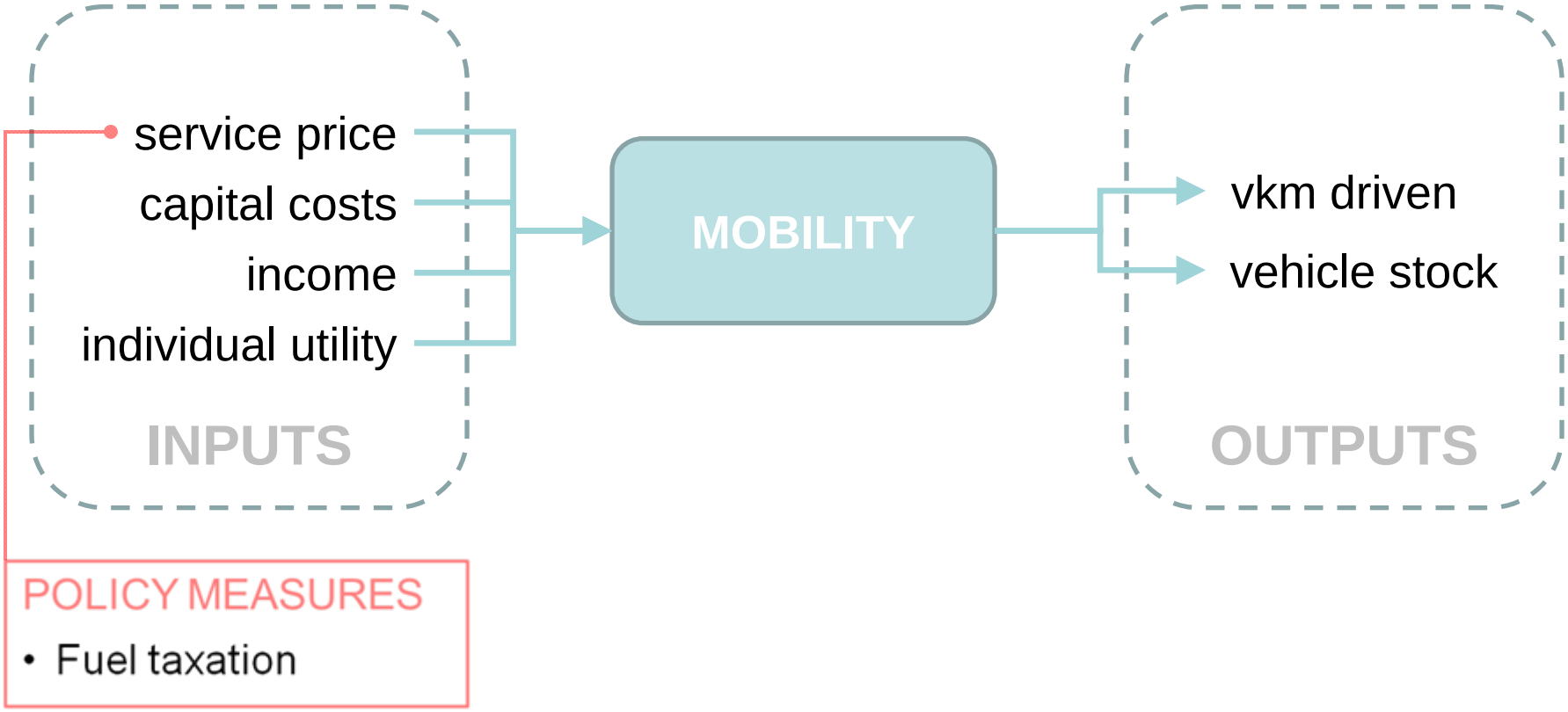
Specific policy measures

- Target a specific technology
- Aim to accelerate the introduction of alternative technologies
- Not exclusively cost-related
- Examples
  - Tax exemptions
  - Investment subsidies
  - Low interest loans

The problem of the policy maker

- General vs. technology specific support
  - Governments tend to pick the low-hanging fruit
  - Short-term thinking: Incremental innovation benefit most from generic support frameworks (e.g. CO_2 taxation, emission trading)
- However during the transition of disruptive innovation barriers occur that cannot be solved by general policies
  - Cost gap to reference technology still too high
  - Shift from R&D support to deployment support
- By not choosing for a specific technology, one also makes a choice…
  - Not favouring one technology over the other means you favour incremental innovation (lock in) over system change

Methodology for generic policy measures



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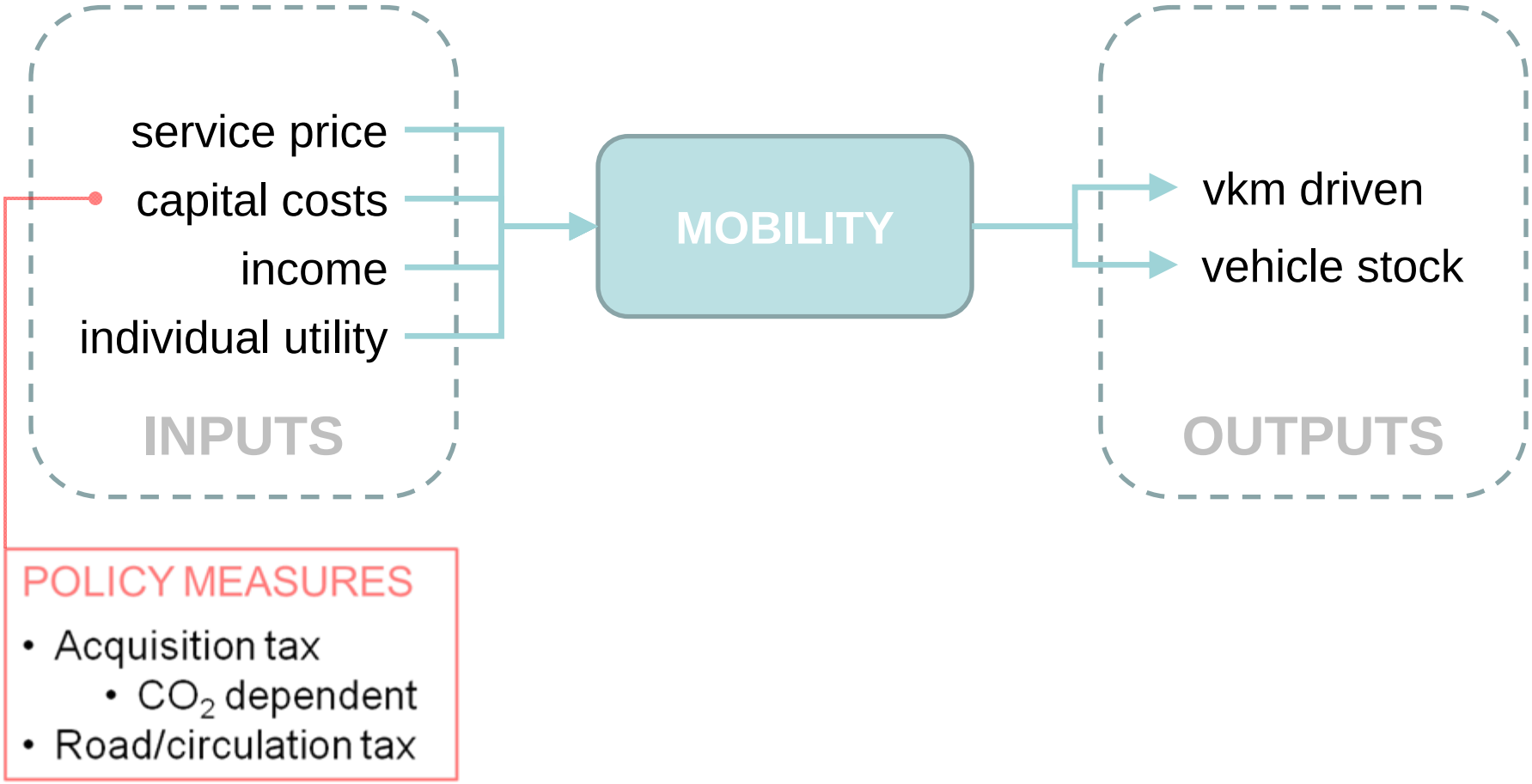

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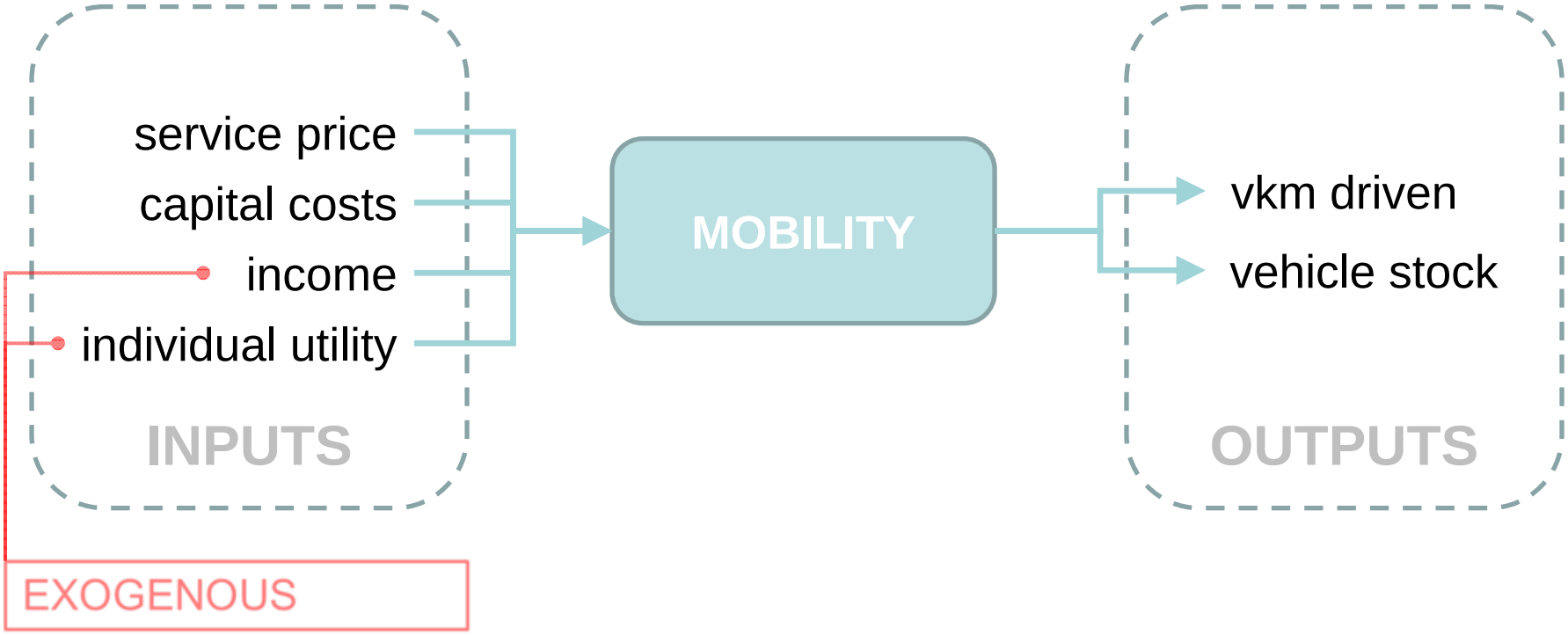
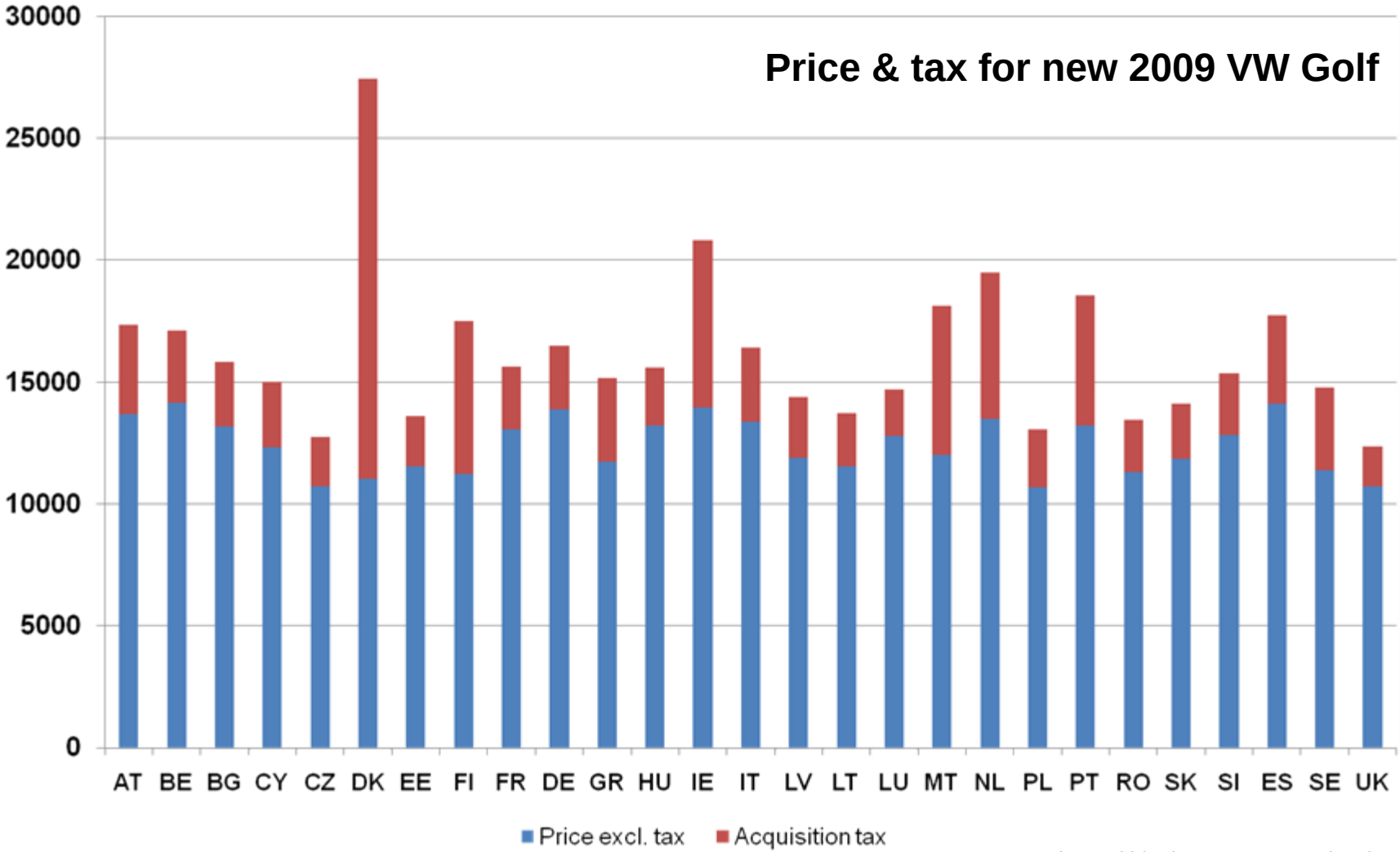
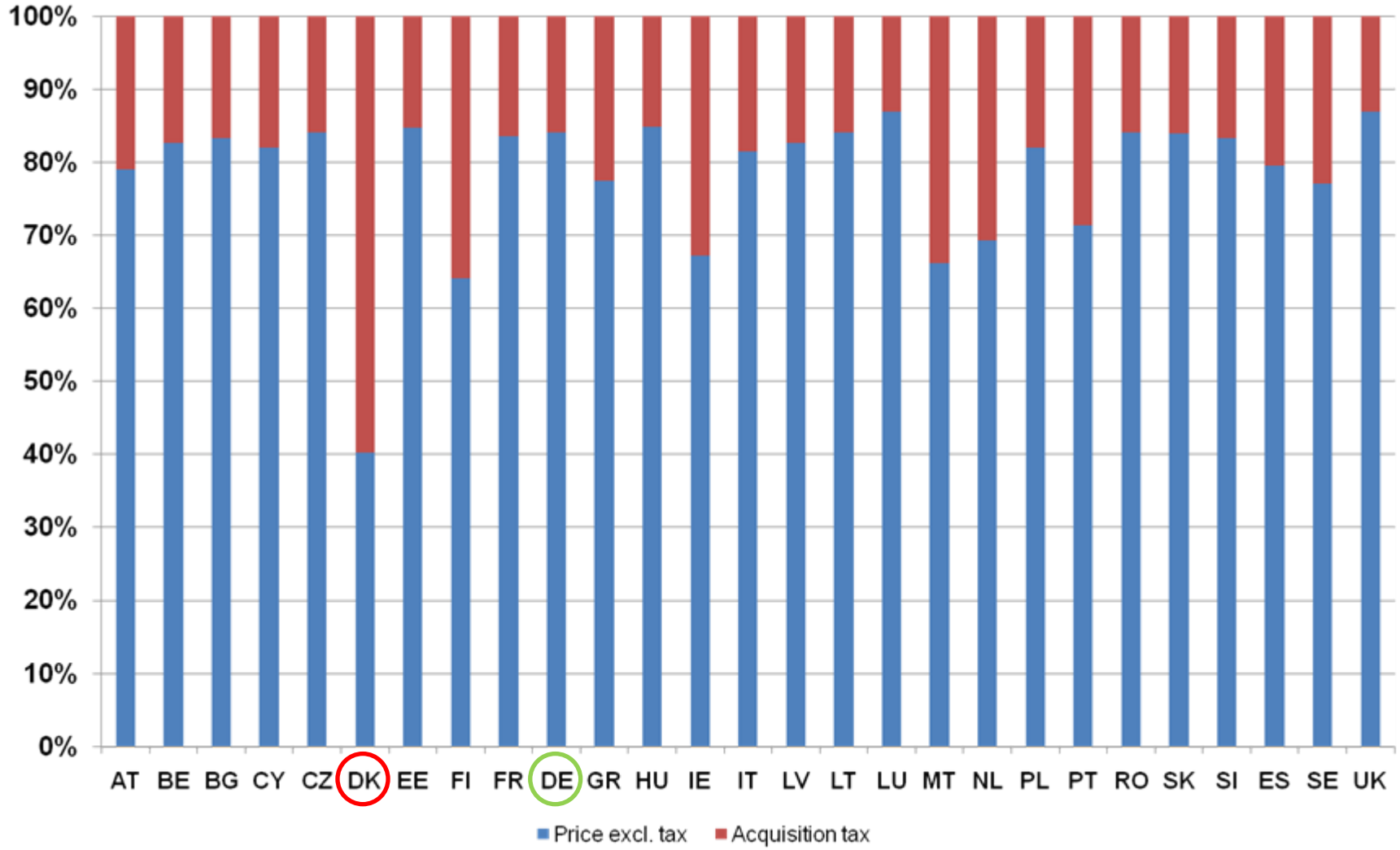


Car manufacturers vary price by country

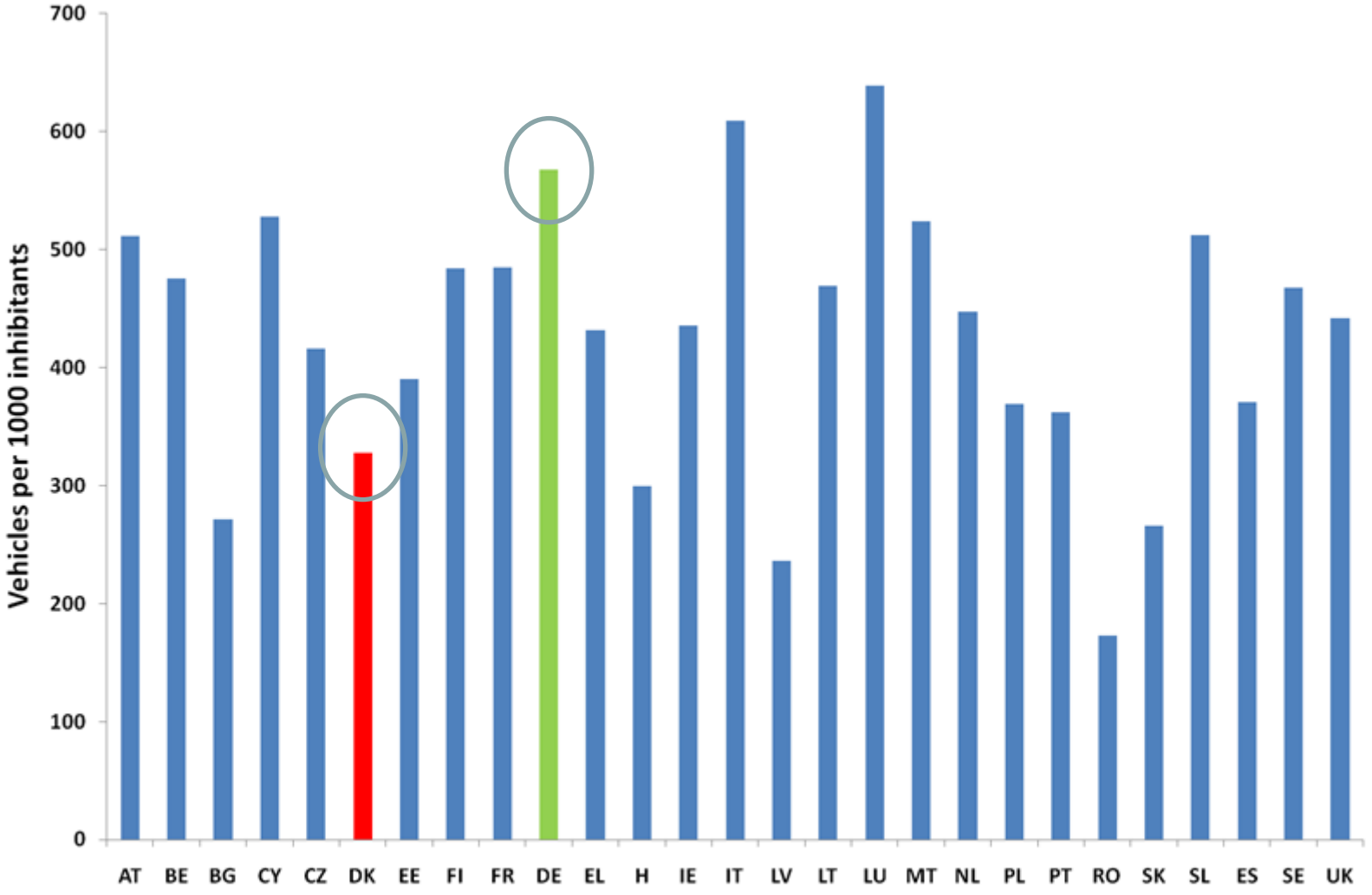


Source: Car prices within the European Union (EC, 2009)

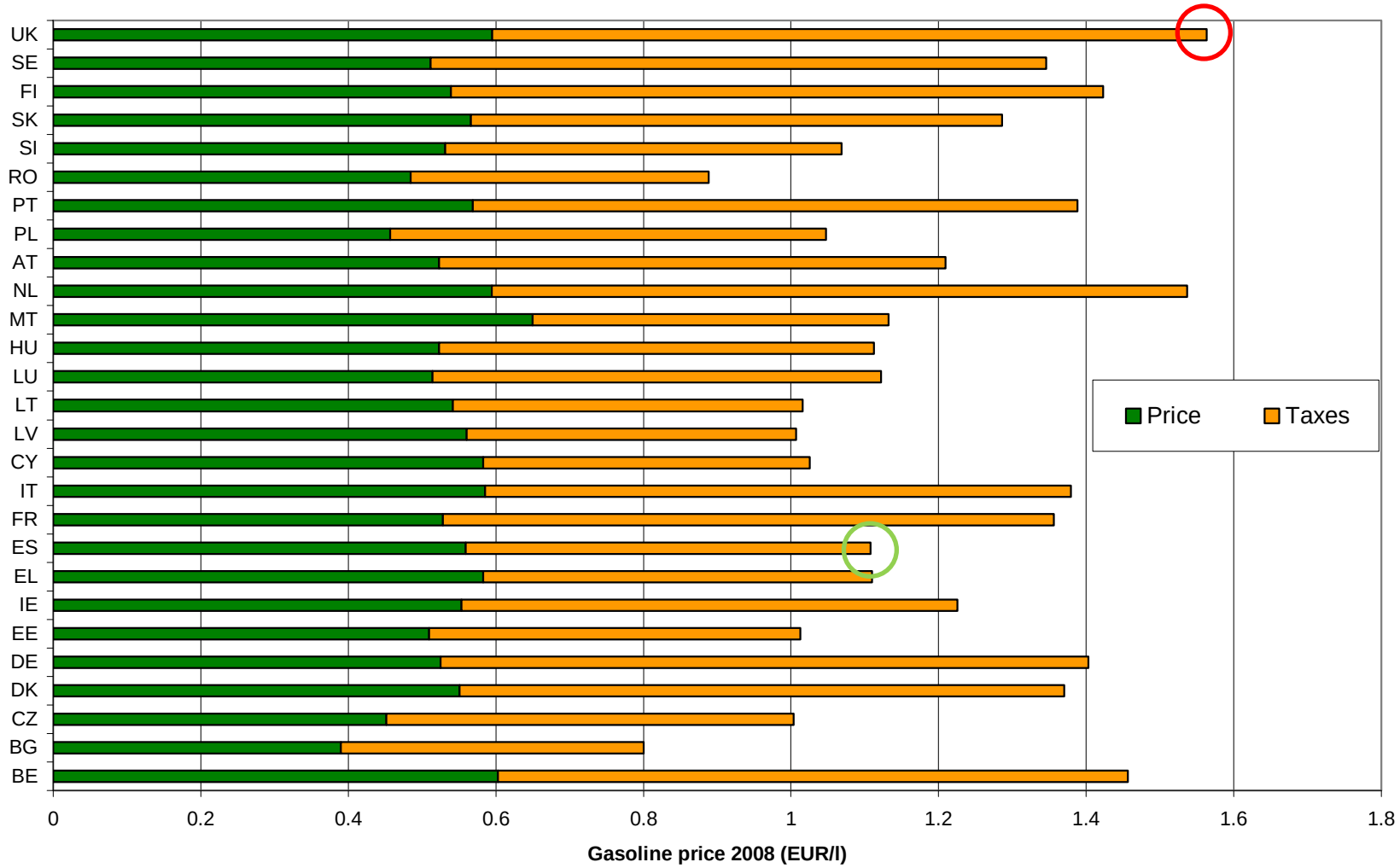
Acquisition taxes differ across countries



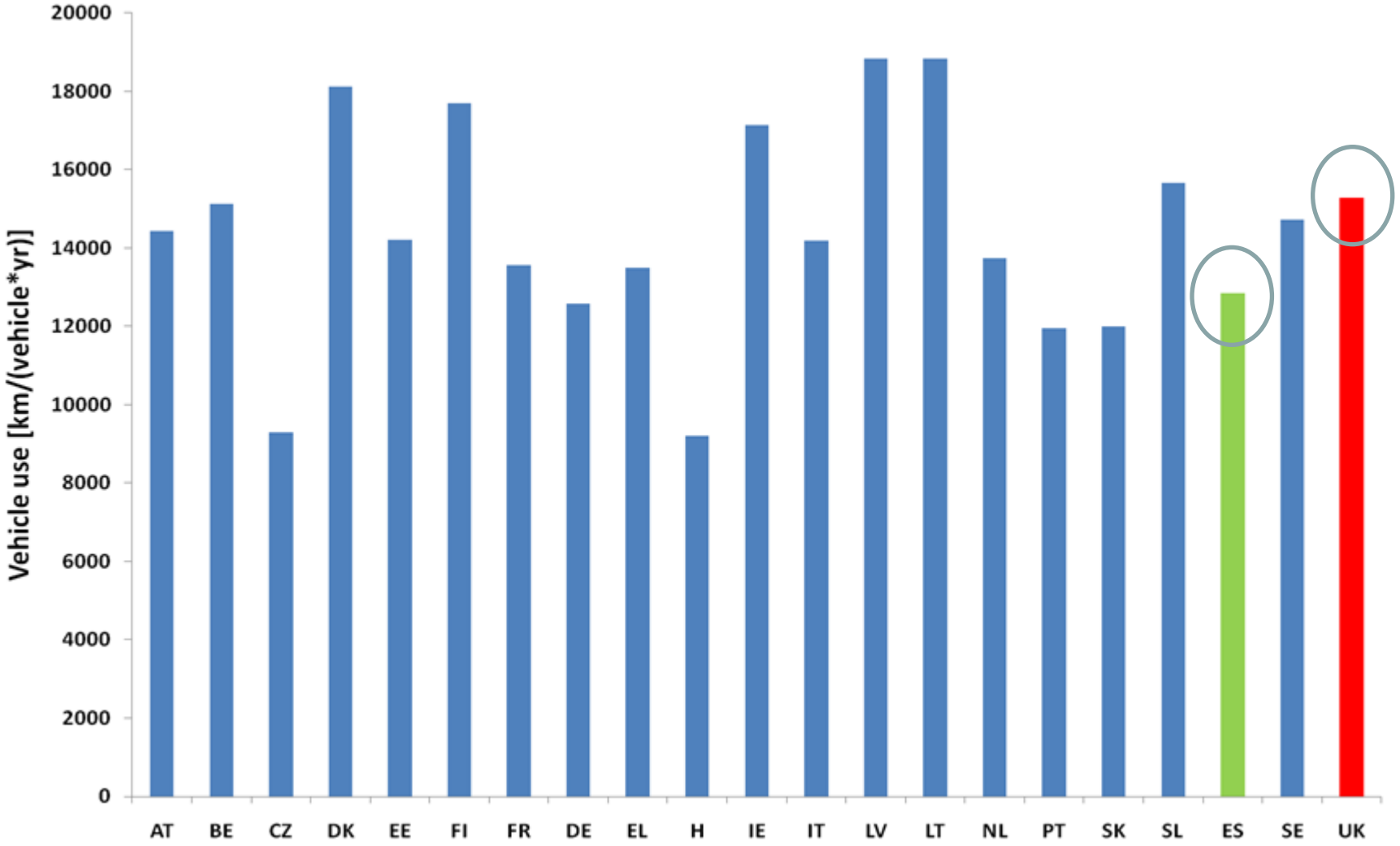
Vehicle ownership varies across countries



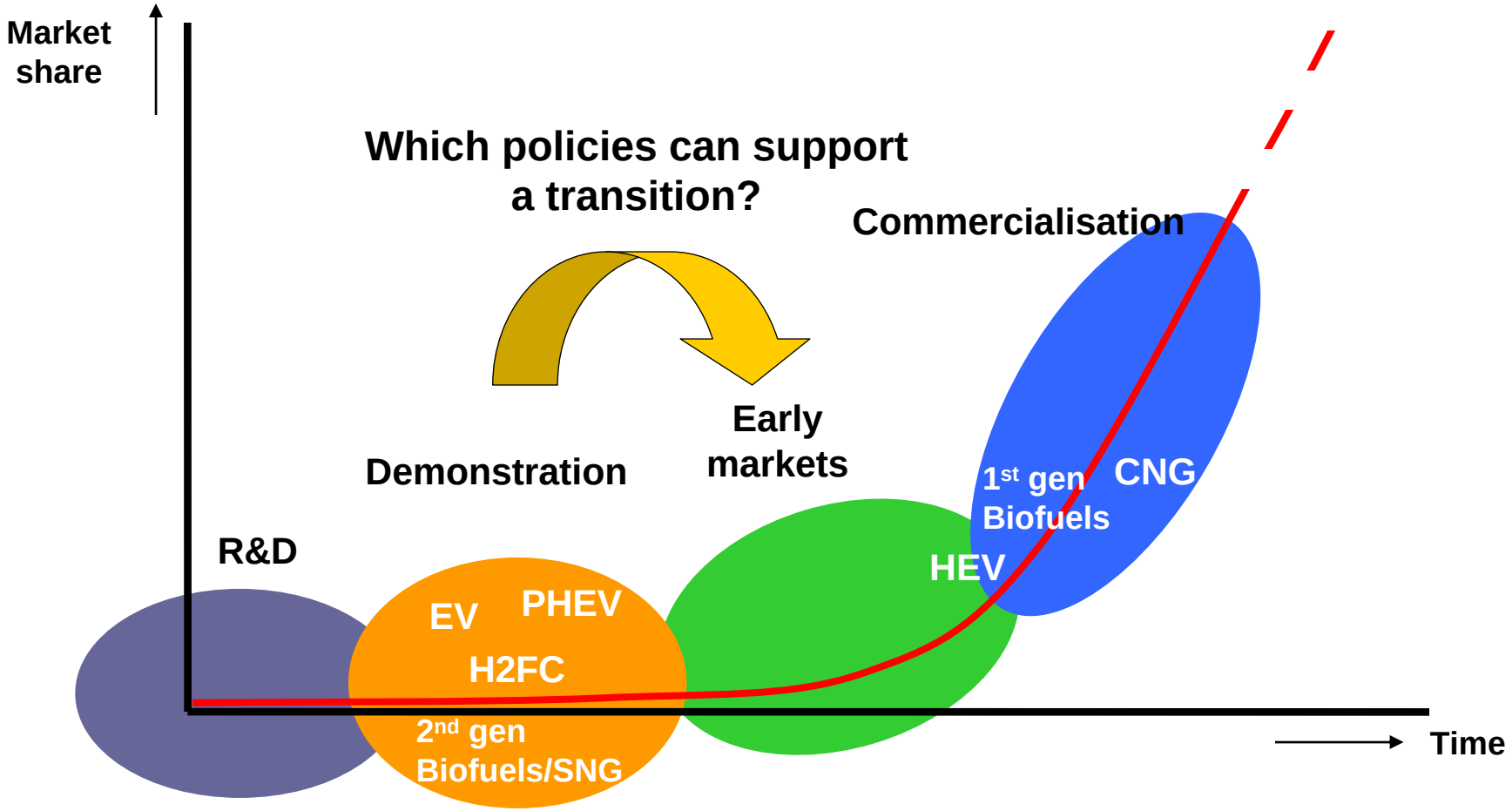
Gasoline taxation varies per country



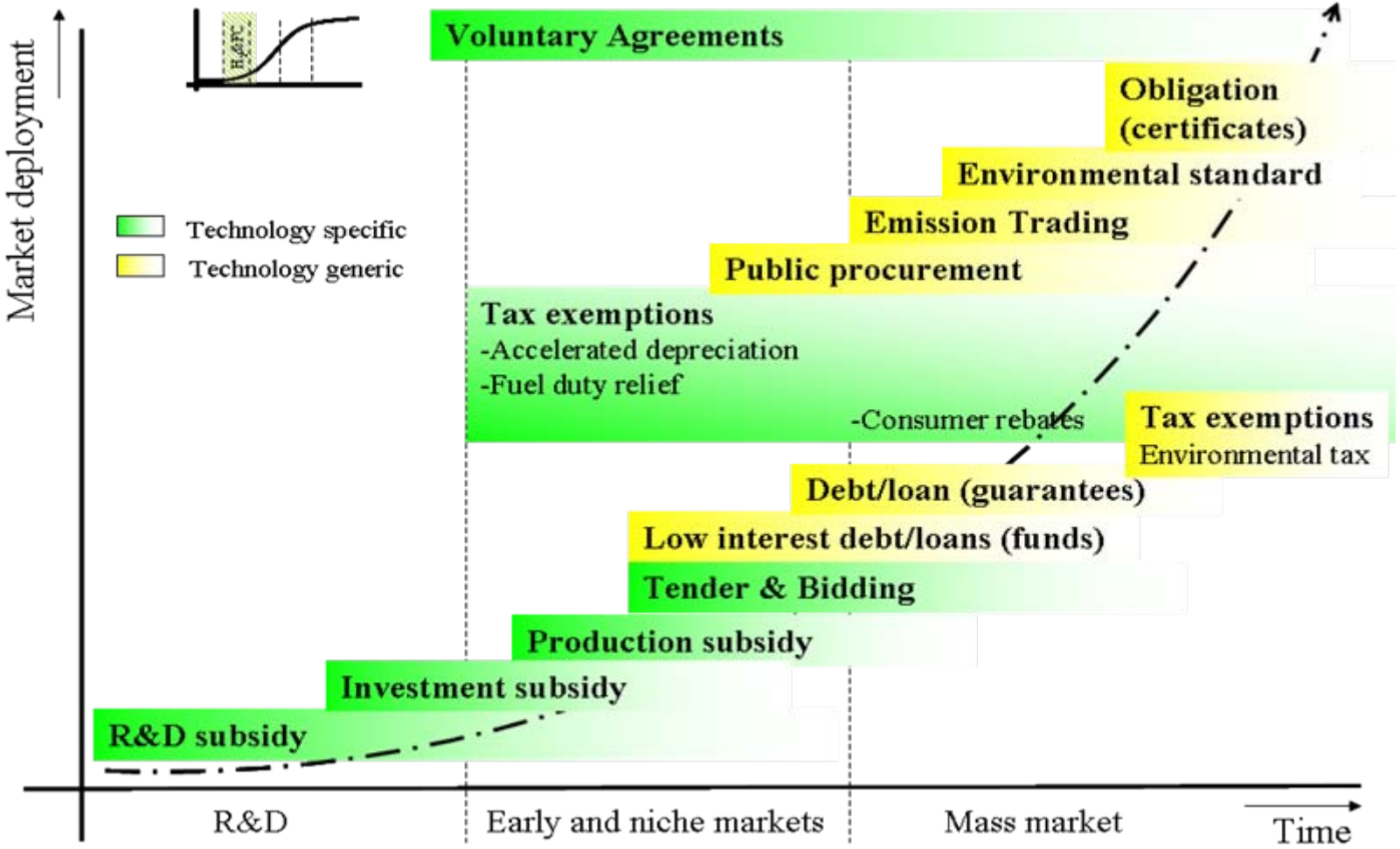
Vehicle use varies per country



Alternative fuels along the innovation curve



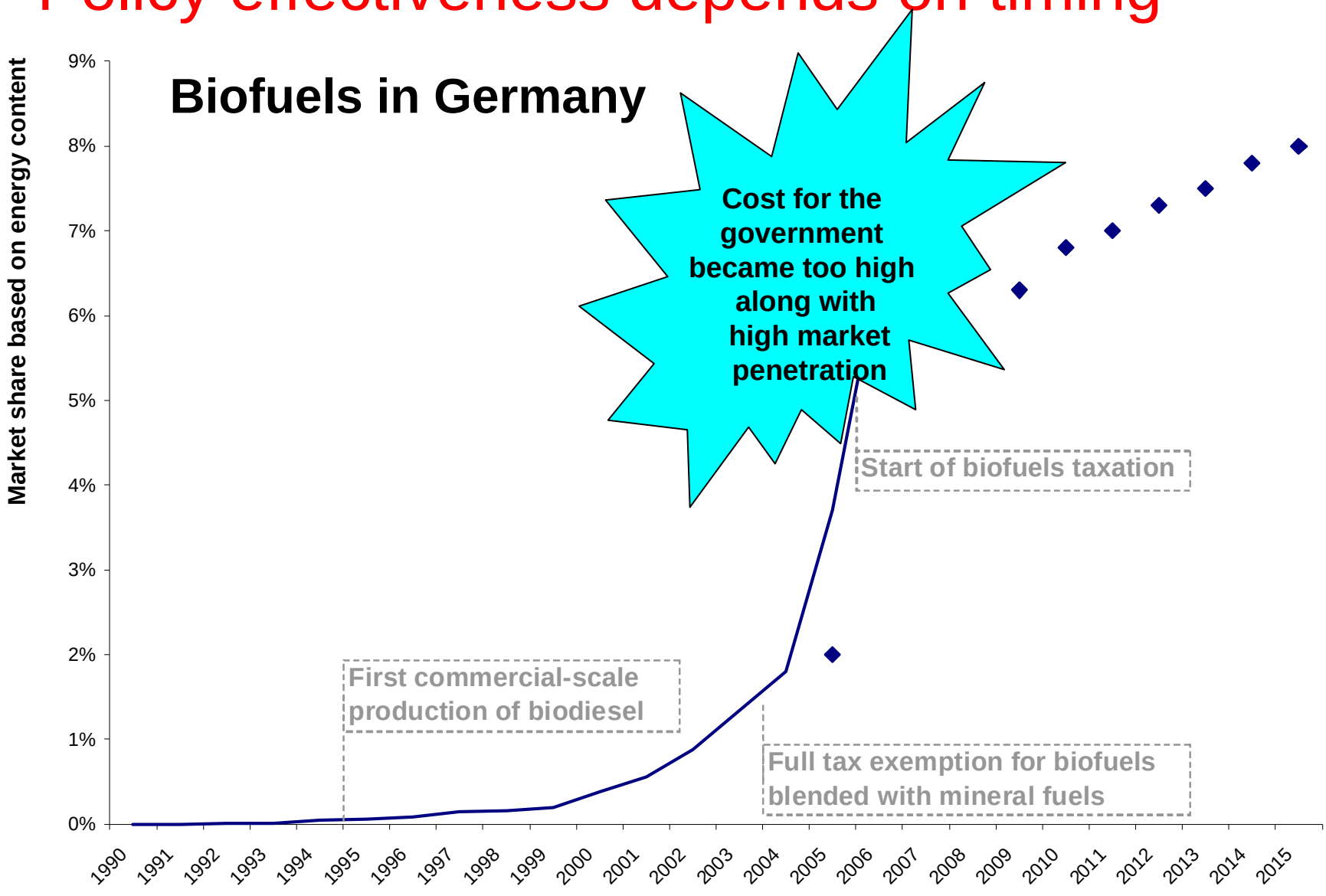
Policies along the innovation trajectory



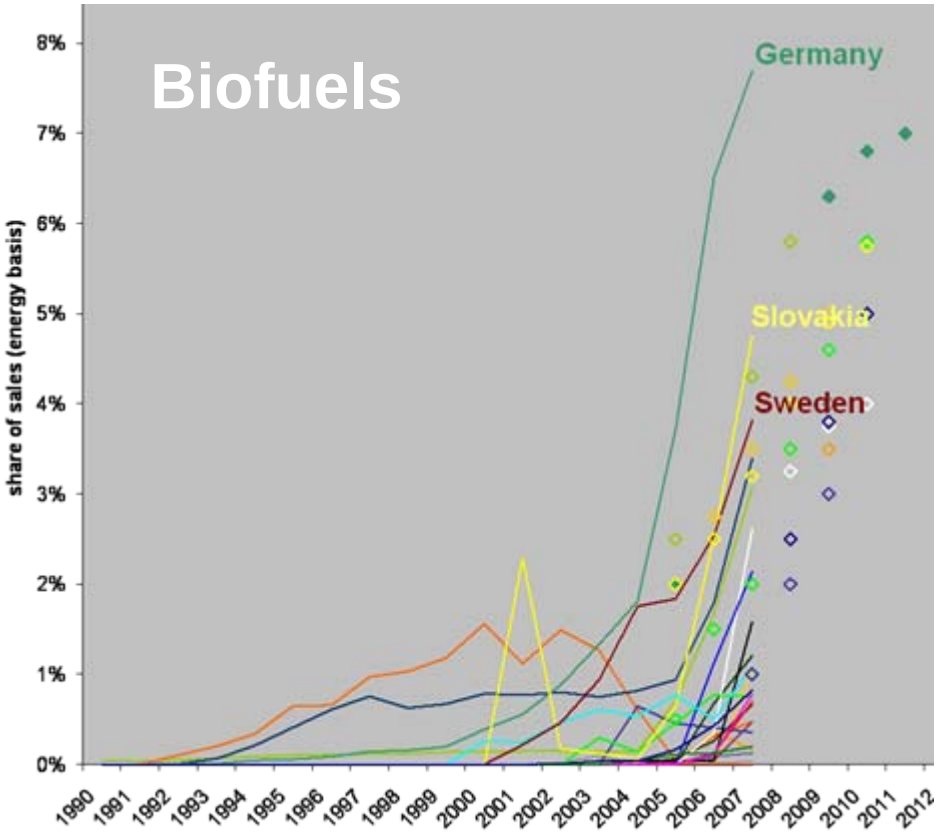
Examples of existing policies: biofuels

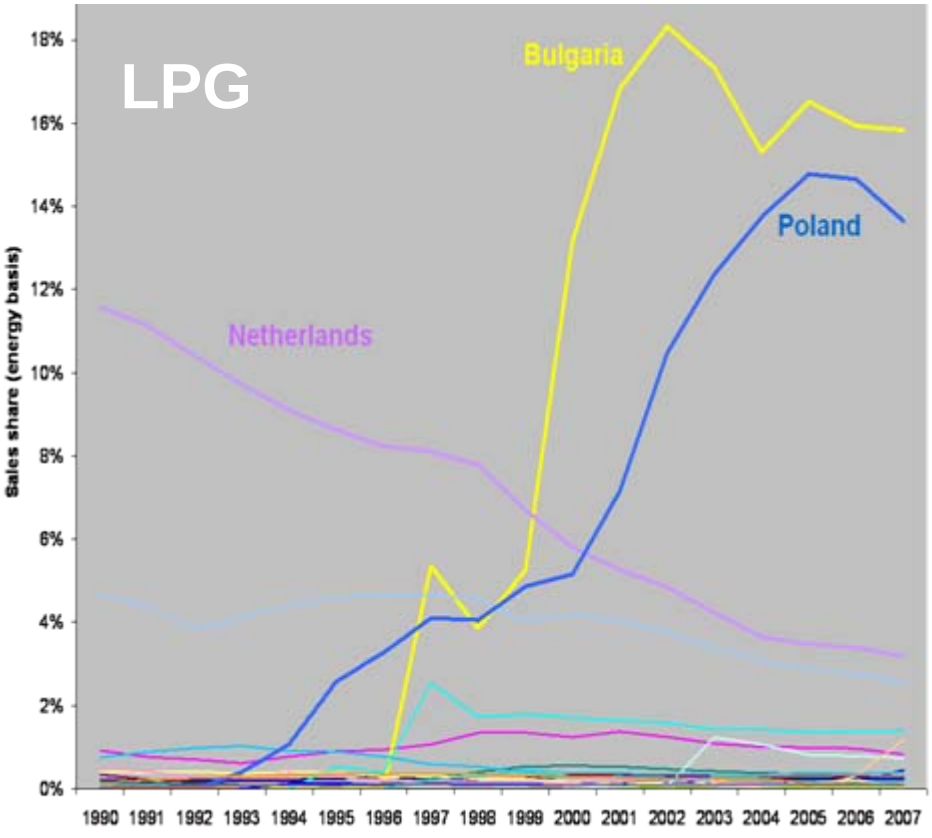
POLICY SUMMARY for 2009						
	Excise duty reduction	Other tax exemption	Obligation	Vehicle Subsidies	Public Procurement	Other support policies
EU						
Austria	1		1			
Belgium	1					
Bulgaria	1		1			
Cyprus	1					
Czech Republic	1	1	1			
Denmark	1	1				
France	1					
Germany	1		1			
Lithuania	1		1			
Netherlands		1	1			
Poland	1		1			
Spain	1	1	1			
Sweden	1	1	1	1	1	1
United Kingdom	1		1			
Total	13	5	10	1	1	1

Policy effectiveness depends on timing



Varying degrees of success in introduction

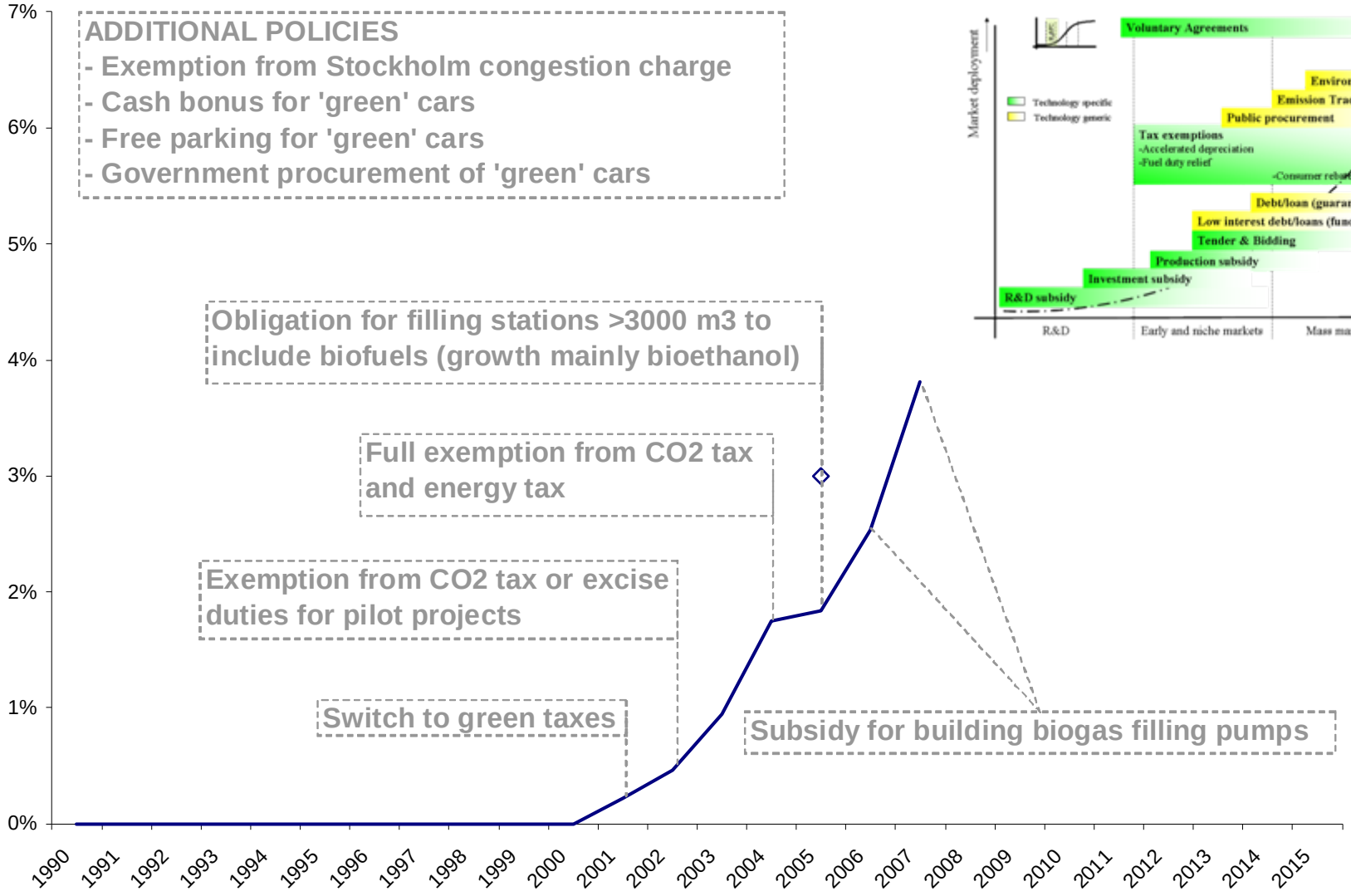




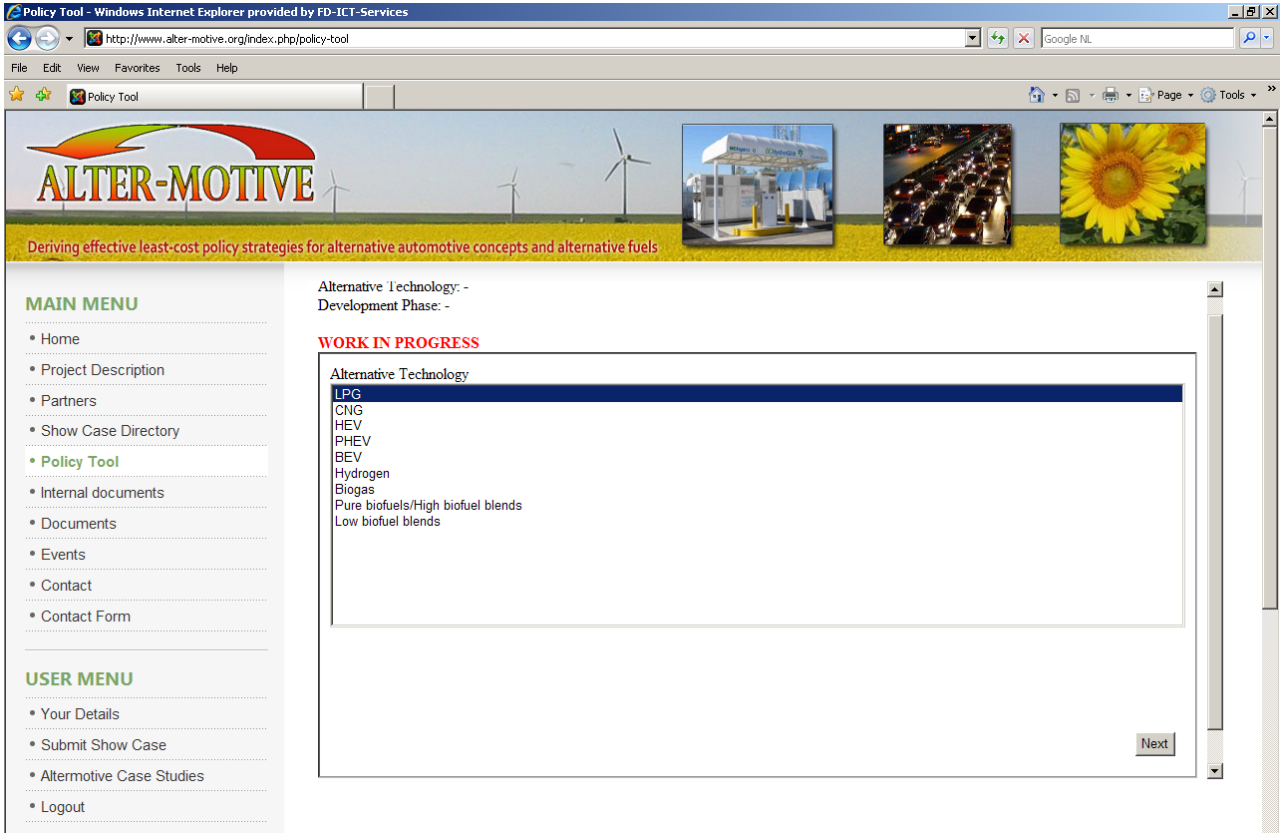
Effectiveness depends on

- which measure is applied & how it is applied

Example: Swedish biofuel policy



Conclusions will be implemented in toolbox



- Provide policy makers with means to choose right policy for a certain technology

  - It's a tool, not a model!
  - Assumes that technology choice has been made by policy maker

Preliminary conclusions

- **Generic policies** are effective to influence amount of km driven and vehicle ownership
  - Acquisition tax and fuel taxes are prefered measures (Nordisk Ministerråd, 2008)
  - (Annual) road taxes are hardly effective
- Many AFs & AAMTs are **still in RD&D phase**
  - No quantitative information available/relevant
  - For those technologies, policies used in the tool are based on theoretical findings (S-curve)
  - Policies can be effective in aiding market introduction
- Policies need to be **tailored to specific technologies & barriers**
- Well-timed, **consisted (reliable, long-term)** and well-balanced policy packages seem most successful (e.g. Sweden biofuel followed our approach)

Thank you for your attention!

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