Promoting low carbon vehicles: using price to change consumer attitudes and buying behaviour

Dr Ben Lane, Ecolane & WhatGreenCar?

Promoting Low Carbon Vehicles, 7th Nov 2007

Implications of attitudinal research focusing on price mechanisms and car-buying behaviour

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Scope of presentation

1. Current price levers
2. Car-buying: influencing factors
3. Attitude-action gap
4. Car-buying: the ‘mpg’ paradox
5. Implications of attitudinal research
6. Effective interventions?

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Current price levers

Registration:

- Capital allowances
- Purchase tax/grants/ discounts
- VAT
- Feebates

Circulation taxes:

- VED(CO2, engine size)
- Company car tax (CO2)

Vehicle use:

- Fuel Excise Duty (fuel differentials)
- London Congestion Charge (AFV discounts)
- Low Emission Zones
- Road user charging (eg PAYD)
- Parking charges

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Car-buying: influencing factors

Factors reported when deciding what car to buy

- Capital cost
- Fuel consumption
- Running costs
- Size/Practicality
- Reliability
- Comfort
- Safety
- Style/Appearance

- Insurance
- Performance
- Image
- Brand
- Engine size
- Equipment levels

- Depreciation
- Road tax/VED
- Experience
- Sales Package
- Dealership
- Environment
- Vehicle Emissions
- Alternative fuel

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Source: DfT 2004, IEEP 2006

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Car-buying: influencing factors

Sustainable Consumption and Production Taskforce 2007

Rational

- Cost – to buy and to run
- Reliability
- Size – car and engine
- Appearance
- Comfort – inside and out
- Brand / Make
- Safety
- Use – work/personal
- Auto vs manual
- Diesel vs petrol

Emotional

- Freedom / independence
- Affection
- Empowerment
- Status symbol
- Self esteem / image
- Makes people feel attractive
- Enjoyment of driving
- Privacy
- Safety

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Source: SCP Taskforce 2007

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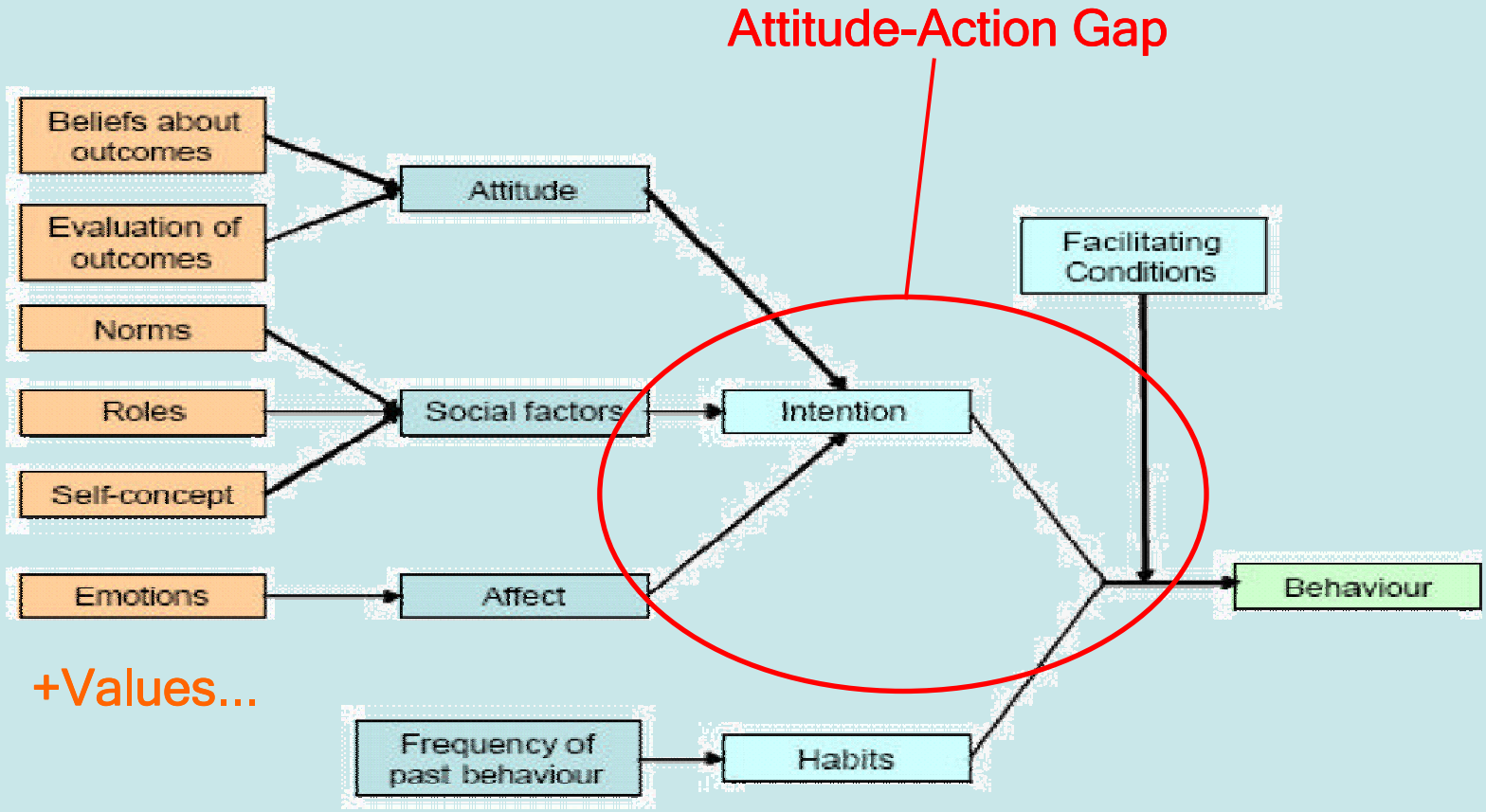
Attitude-action gap

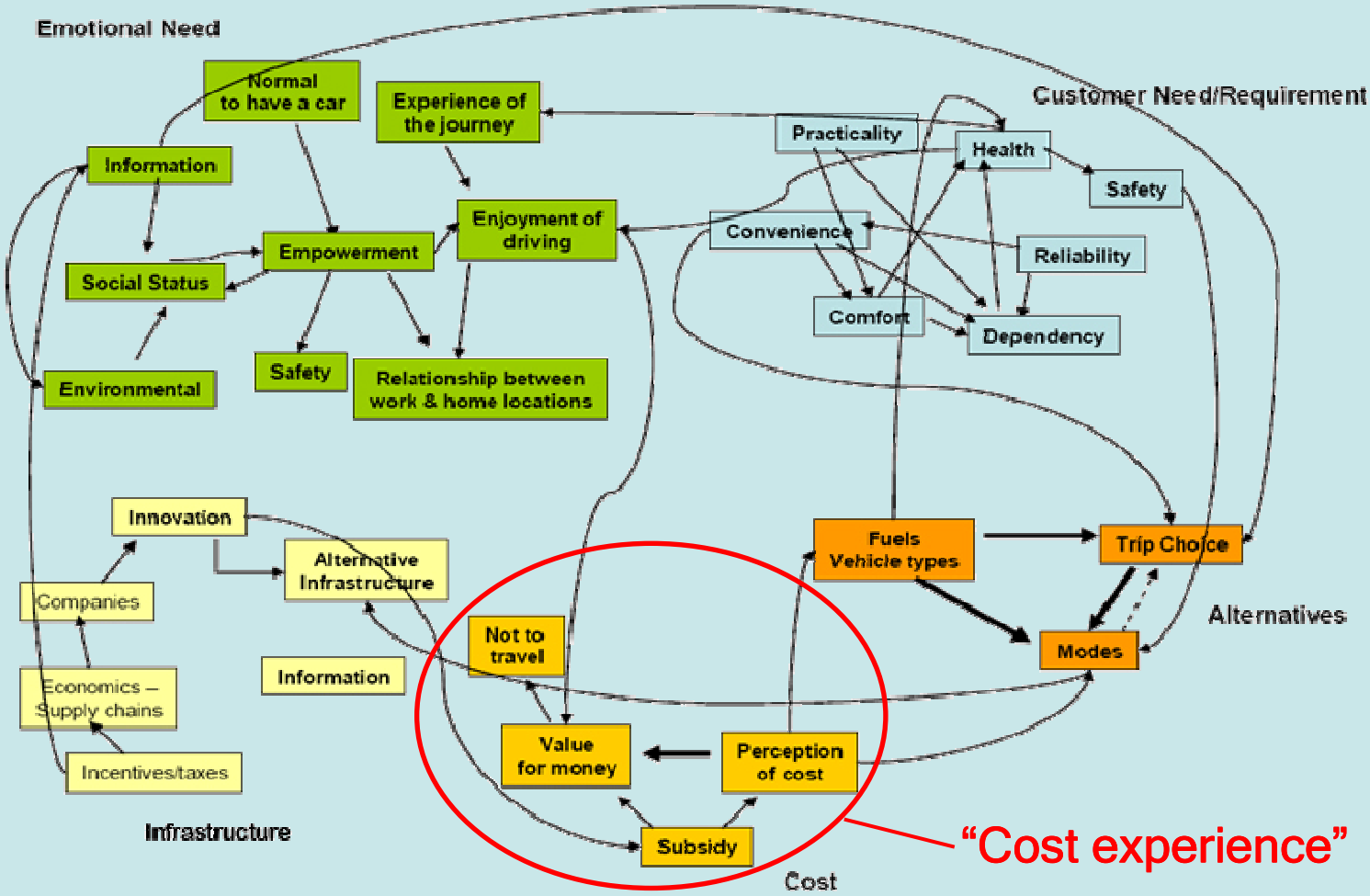
Triandis' Theory of Interpersonal Behaviour



Source: Jackson 2005

Attitude-action gap

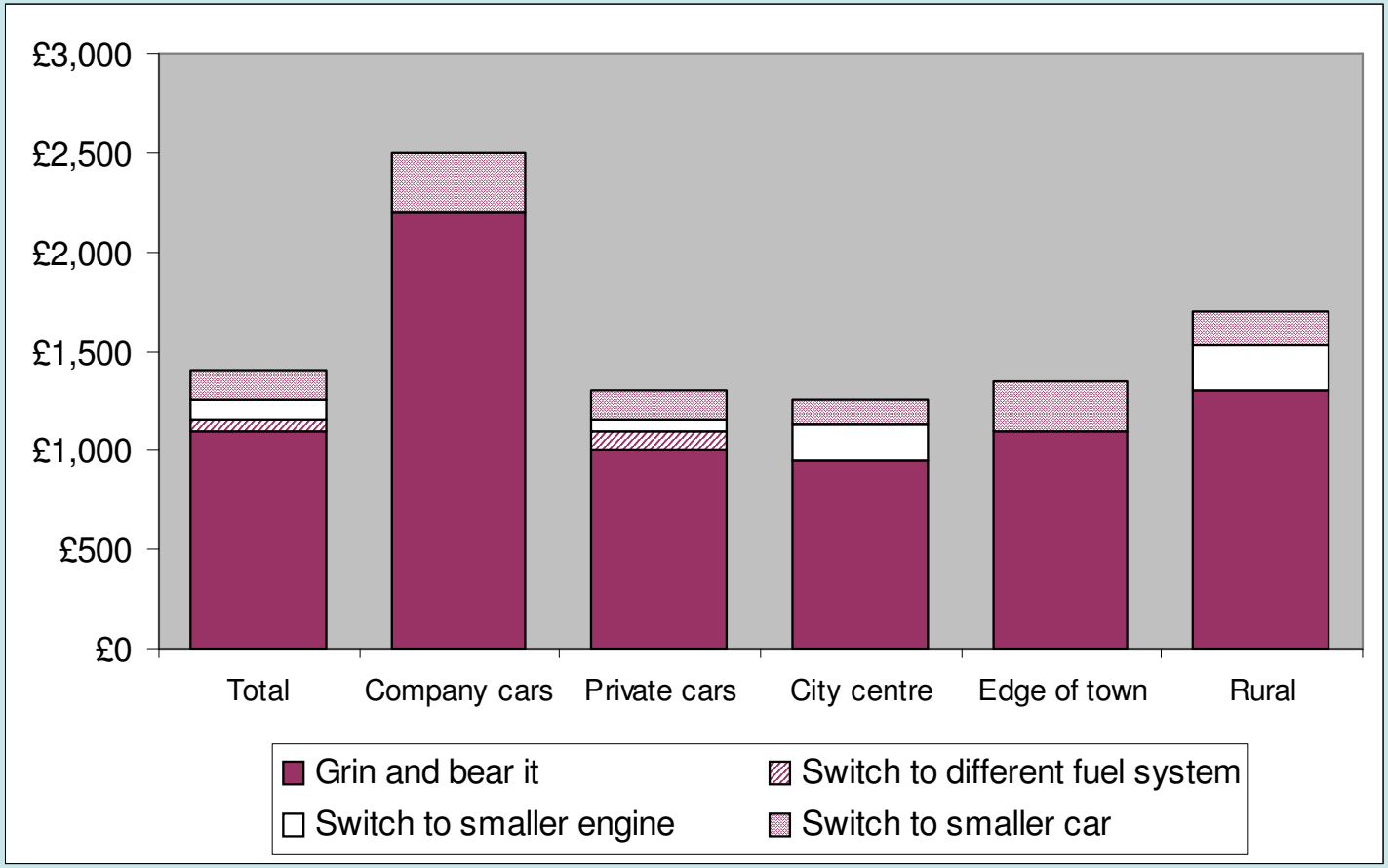
Factors and involved in car-purchase and car use behaviours



Source: SCP Taskforce 2007

Attitude-action gap

Reluctance to switch to a smaller/lower carbon car



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Source: RAC 2004, Morpace 2004

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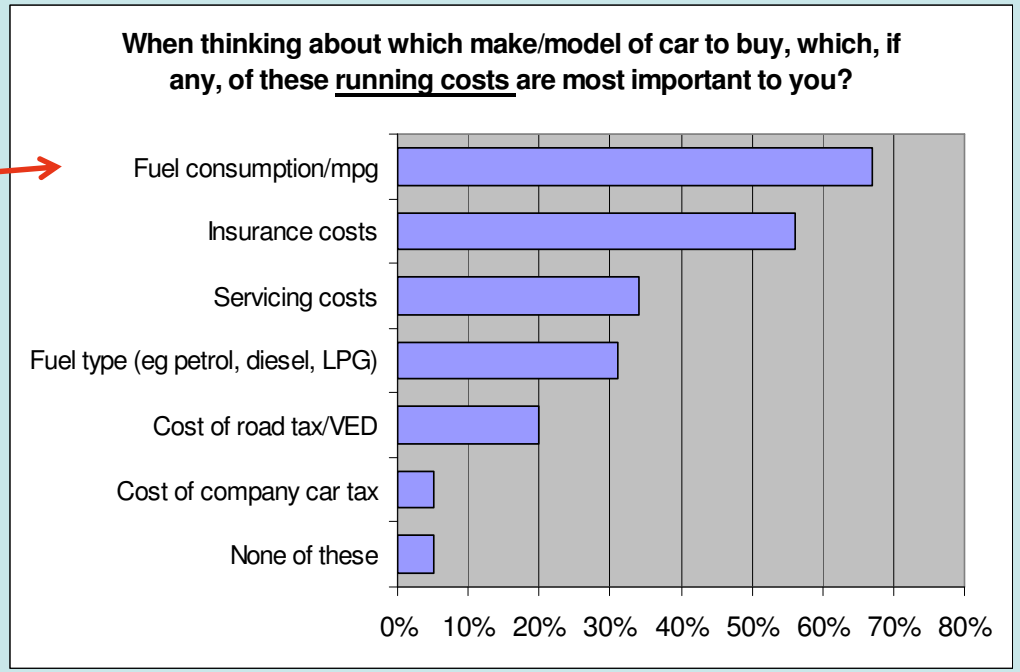
Car-buying: the ‘mpg’ paradox

- Capital cost
- Fuel consumption
- Running costs
- Size/Practicality
- Reliability
- Comfort
- Safety
- Style/Appearance

Reported importance of running costs



Source: IEEP 2006, DfT 2004

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Car-buying: the ‘mpg’ paradox

Although ‘mpg’ is reported as a key decision factor...

“For most [car-buyers], little effort is expended in comparisons of fuel consumption during the decision-making process”

- Raimund & Fickl 1999
- TRI/ECI 2000
- Boardman 2000
- Whelan 2000
- MORI 2003
- Kurani & Turrentine 2002 & 2006
- Johansson-Stenman & Martinsson 2006
- DfT 2006

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Source: TRI/ECI 2000 and as shown

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Car-buying: the ‘mpg’ paradox

Reasons why ‘mpg’ not as important as reported:

- Assume similar ‘mpg’ for all cars within a class
- Little confidence in published fuel economy data
- Improving ‘mpg’ compromises performance and safety
- ‘Mpg’ is more often pre- and post-purchase priority
- Costs too complex to compute (mpg + p/litre → p/mile)
- Don’t know what to do with ‘mpg’ figure!

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Source: as previous slide

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Car-buying: the ‘mpg’ paradox

DfT 2006: Consumer behaviour and pricing structures
[8 focus groups, 65 in-depth interviews]

“The cost of fuel per mile was seen as an abstract concept. Respondents could not suggest a cost of fuel per mile for their car. .. [and] were unaware of the number of miles to the gallon for their car”

“Respondents generally did not think about, or estimate, the cost of making an individual car journey”

“[The] common unit for measuring fuel consumption was a ‘tankfull’ ”

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Source: DfT 2006

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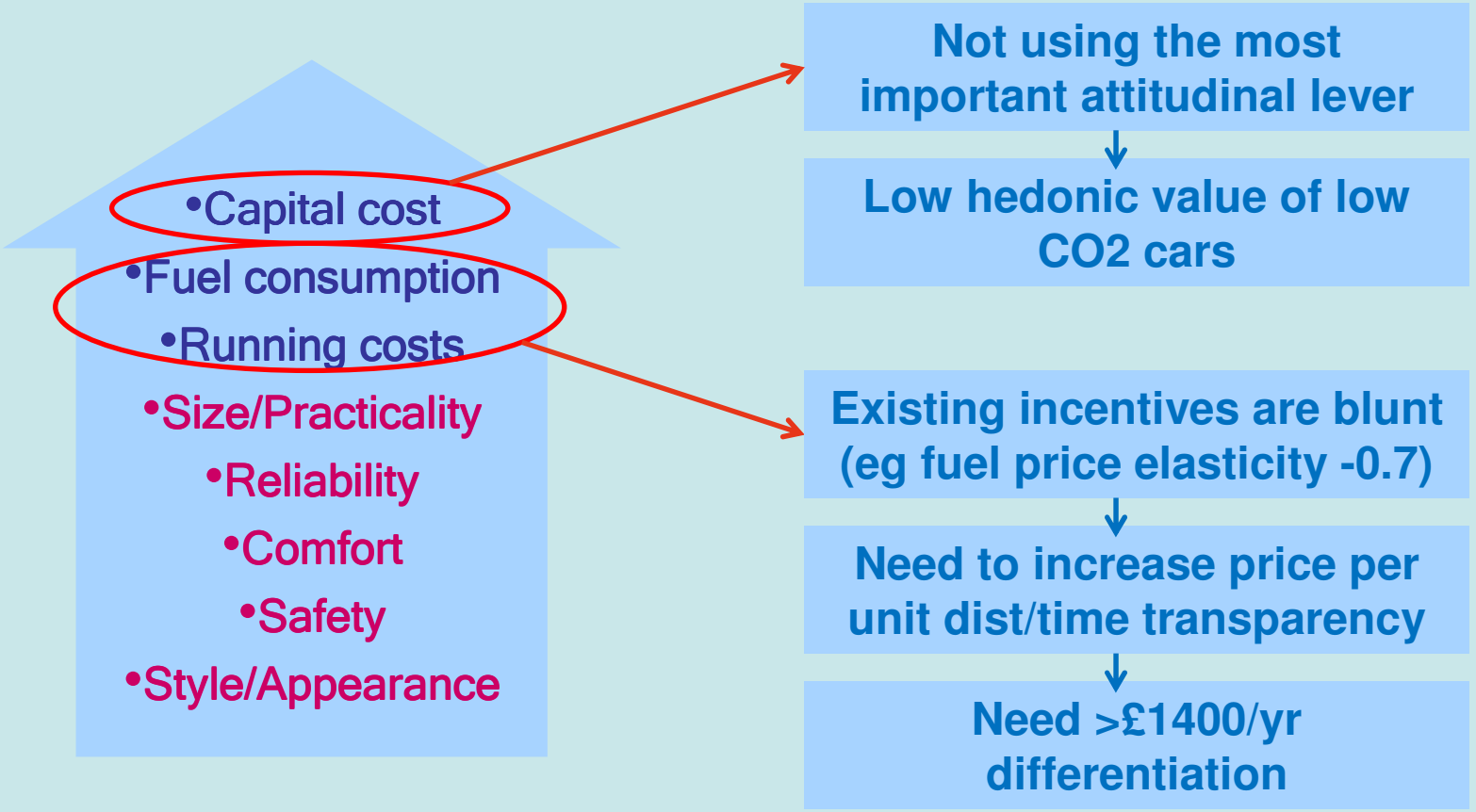
Lessons from attitudinal research



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Effective interventions?

INTERVENTIONS

Attitude-Action Gap

- Vehicle Price
- Fuel consumption
- Running costs
- Size/Practicality
- Reliability
- Comfort/Safety
- Style/Appearance

Car purchase behaviour

- Depreciation
- Road tax/VED
- Sales Package
- Dealership
- Environment
- Vehicle Emissions
- Alternative fuels

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Effective interventions?

WEAK but NECESSARY

- Control fuel price (through fuel duty)
  BUT blunt
- Increase VED differentials
  Sig. widen bands
- Promote 'mpg' information (car label)
  BUT not sufficient

Attitude-Action Gap

- Vehicle Price
- Fuel consumption
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Source: DfT 2006

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Effective interventions?

STRONG & EFFECTIVE

- Company car tax:
  Gradient ~£10/gCO_2/km
  +2.7% reduction gCO2/km
- Congestion Charge:
  Cost elasticity -0.7 → -1.0
  >16% reduction CO2
  →Emergent LowCV market
- CO2-based LCC:
  ~£40-80/gCO2/km
  →+5% band A&B (2009)

Attitude-Action Gap

- Vehicle Price
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Car purchase behaviour

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Source: Ecolane 2006, Santos 2006

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Effective interventions?

REGISTRATION

- Feebates/discounts: Netherlands, Portugal, Italy, Belgium, Cyprus, California, Canada
- Netherlands (feebate 01/02): €1000 (A), €500 (B) → 100% increase band A&B cars in 1 year
- California (feebate): Gradient ~£11/gCO_2/km → 27% reduction gCO2/km

Attitude-Action Gap

- Vehicle Price
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Car purchase behaviour

- Depreciation
- Road tax/VED
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Source: IEEP 2006, UMTRI 2007

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Effective interventions?

INC TRANSPARANCY COST-'MPG'-CO_2 LINK

- CO2-based Congestion Charge / parking charges
- In car mpg/fuel cost metering
- Emissions based road user charging
- Pay-as-you-drive
  £14/gCO2/km
  →+6% band A (2012)

Attitude-Action Gap

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Car purchase behaviour

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Source: Ecolane 2006

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Summary

INC TRANSPARANCY
COST-'MPG'-CO_2 LINK

Design incentive mechanisms with following issues in mind:

- Attitude-action gap
- Consumer receptivity
- Transparency
- Consistency

Attitude-Action Gap

- Vehicle Price
- Fuel consumption
- Running costs
- Size/Practicality
- Reliability
- Comfort/Safety
- Style/Appearance

Car purchase behaviour

- Depreciation
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