

Low Carbon Vehicle Partnership Regulatory Interventions – Successes and Failures in other markets

The Cars of Tomorrow - 14 Mar '13

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Initiating the Change in UK

- ❑ 2003 UK Government publication – Powering Future Vehicles
 - The critical aspect was cross department engagement, Transport, Industry, Treasury, Environment
 - Set 10 year Clear targets for vehicles
 - 10% of all new cars to be Ultra Low Emissions
 - 600 new buses per annum to be Low Emissions
 - Identified that the key to engagement is “Partnership approach”
 - Created LowCVP – Low Carbon Vehicle Partnership

What is the LowCVP?



The Low Carbon Vehicle Partnership's mission is:

"To accelerate a sustainable shift to low carbon vehicles and fuels in the UK and thereby stimulate opportunities for UK businesses"



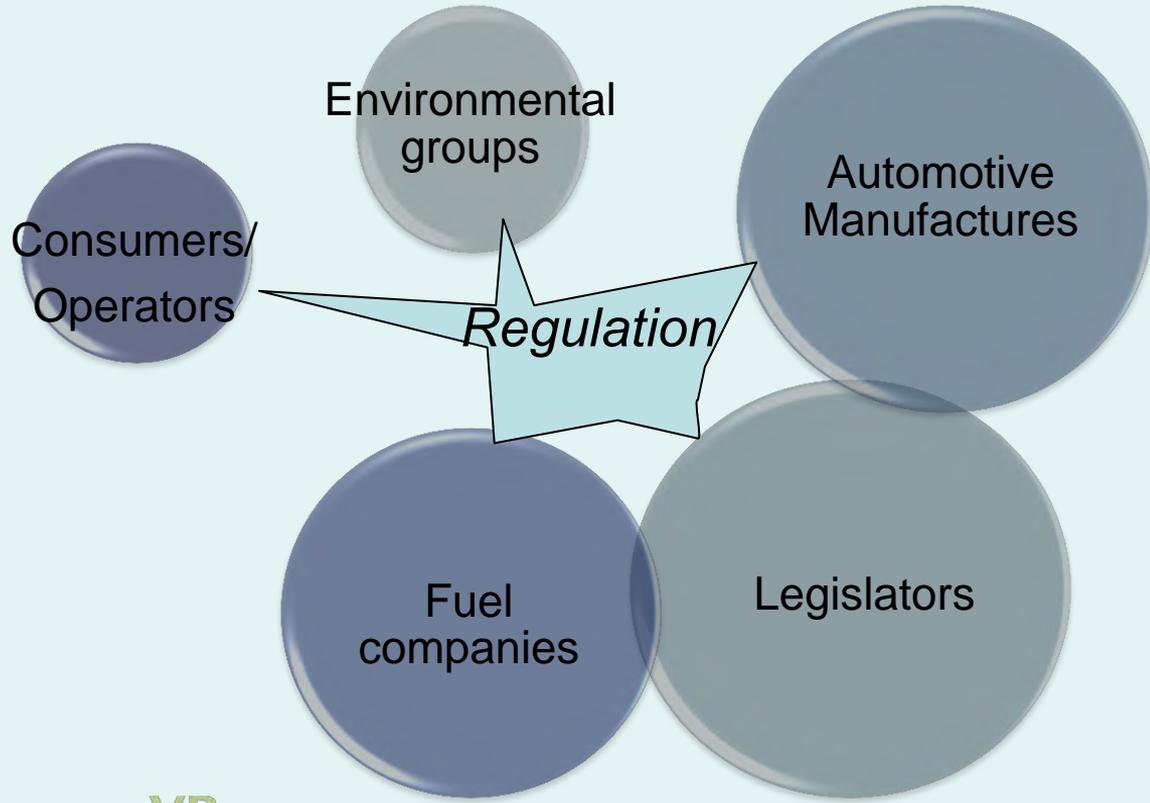
The LowCVP is an independent, not-for-profit stakeholder partnership funded mainly through government grants and member contributions.

The LowCVP is the only organisation in the UK – or Europe – which brings stakeholders together to facilitate the development of better policy and accelerate the shift to low carbon vehicles and fuels.

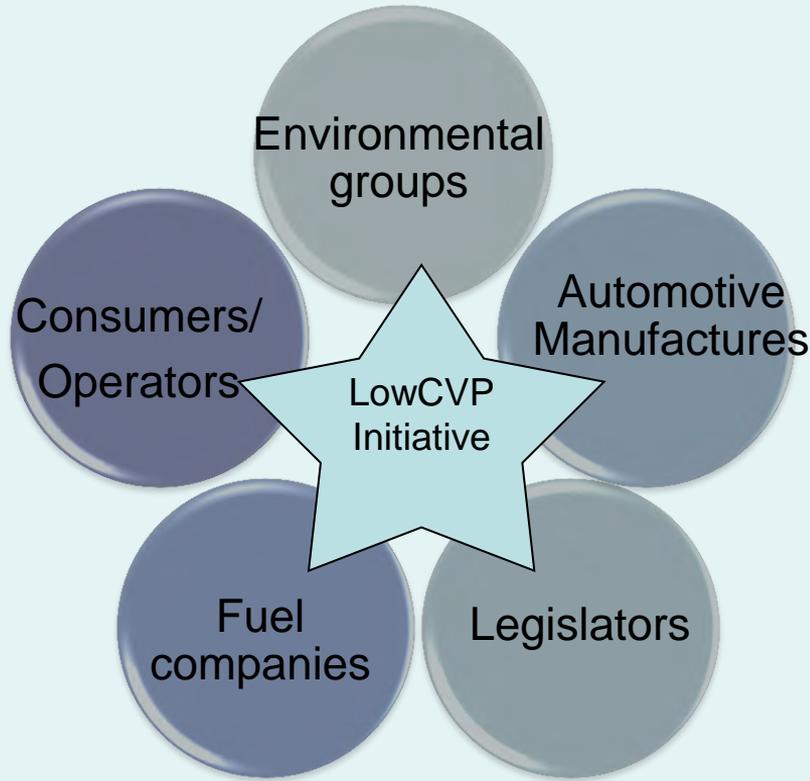
"The LowCVP is a unique organisation which is effective in bringing stakeholders with widely differing perspectives together."

Prof Neville Jackson, Chief Technology and Innovation Officer, Ricardo UK Ltd and Chair of the LowCVP Board

Opportunity - Regulation Development Process In Europe



Opportunity - Regulation Development Process In Europe



Best Practice Principles for environmental claims in automotive marketing to consumers

Jointly endorsed by LowCVP, SMMT and ISBA.

Background and scope

These Best Practice Principles (the Principles) have been developed in a framework and a strong reference point for consumers, the automotive industry and its suppliers in the sphere of marketing communications for passenger cars and light commercial vehicles to B2C consumers. The Principles are not intended to supersede existing legislation, the mandatory Advertising Code and government guidance which shall still be the key sources for ensuring that advertising and marketing practice complies in respect of environmental claims.

These Principles shall apply to all areas of marketing covered by their due and guidance-based below. In addition, they will extend to in-store advertising, customer editorial content, press releases, corporate press and marketing information on corporate website (e.g. a website), social media and other external and internal channels for green under the above-mentioned legal framework.

It is intended that these Principles will contribute to the Integrated Approach by promoting consumer understanding of the environmental performance of vehicles. Consumers will benefit from the receipt of information which industry widely verify or being based on genuine environmental benefits. The automotive industry by adopting these Principles, will observe the rights of them and support by businesses to good faith.

The key sources governing the communication of environmental claims are the legislative codes guidance listed below and further referenced below for details on their detailed provisions:

- European whole vehicle type approval;
- CO₂ and sulphur emission standards;
- The Fuel and Lubrication Directive;
- The CCA Labeling Directive and specifies the UK, the vehicle model CO₂ labels for new and used cars, which are industry voluntary initiatives;
- The Passenger Car (Fuel consumption and CO₂ Emissions Information Regulation (EU)) as amended and related Vehicle Certification Agency (VCA) Guidance Notes and other such guides on labelling;
- International standards such as ISO 14021 on environmental labelling.

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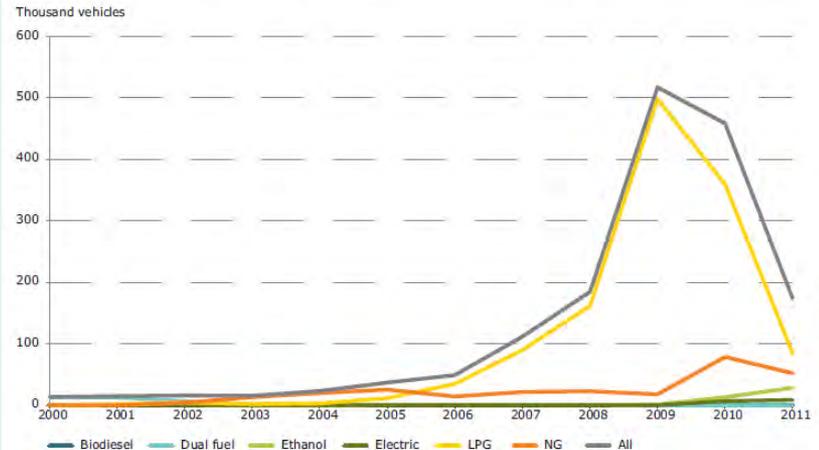
Cars are a global industry, But a National Challenge

- ❑ UK market is 2M new cars per annum and no one builds a volume car just for UK.
- ❑ UK is the only RHD market in Europe!
- ❑ UK has good manufacturing base of indigenous (EG Jaguar, Land Rover, Vauxhall, Ford, Mini) and Transplants (Nissan, Toyota, Honda)
- ❑ UK has strong small business community in automotive

Failure – Short term policy intervention

- ❑ Governments around Europe, incentivised LPG over short term
- ❑ Registrations rose from 50,000 to 500,000 peak and dropped to 100,000 in just 4 years
- ❑ Almost All OEM's have now pulled out of the market
- ❑ There is now very low confidence in Government led initiatives for alternative fuels, which may hamper, CNG, Hydrogen and EV uptake

Figure 6 Evolution of total registrations of AFVs over the years



Monitoring CO₂ emissions from new passenger cars in the EU: summary of data for 2011

Success – High Level Climate Change mandate

- ❑ UK signed [The Climate Change act](#) in 2008
 - Sets binding targets for 2050
 - Creates alignment across departments
 - Forces all government departments to publish plans regularly
 - Creates an independent monitoring body [The CCC](#)
 - Transcends political changes of government terms
 - A series of “Carbon Budgets” for 5 yr objectives



Climate Change Act 2008

CHAPTER 27

CONTENTS

PART 1

CARBON TARGET AND BUDGETING

The target for 2050

- 1 The target for 2050
- 2 Amendment of 2050 target or baseline year
- 3 Consultation on order amending 2050 target or baseline year

Carbon budgeting

- 4 Carbon budgets
- 5 Level of carbon budgets
- 6 Amendment of target percentages
- 7 Consultation on order setting or amending target percentages
- 8 Setting of carbon budgets for budgetary periods
- 9 Consultation on carbon budgets
- 10 Matters to be taken into account in connection with carbon budgets

Limit on use of carbon units

- 11 Limit on use of carbon units

Indicative annual ranges

- 12 Duty to provide indicative annual ranges for net UK carbon account

Proposals and policies for meeting carbon budgets

- 13 Duty to prepare proposals and policies for meeting carbon budgets
- 14 Duty to report on proposals and policies for meeting carbon budgets
- 15 Duty to have regard to need for UK domestic action on climate change

Success – International New Car CO2 Fleet averages

- ❑ European manufacturers have aligned around the CO2 regulations. [EU Average CO2 135.7g/km](#)
- ❑ Target for 2015 is expected to be met, several states and manufacturers are already there.
- ❑ Key benefit is consistent monitoring and reporting across states

BUT....

- ❑ Regulation is complemented by an array of incentives and mandates around Europe aligned with CO2 reduction, to stimulate demand.

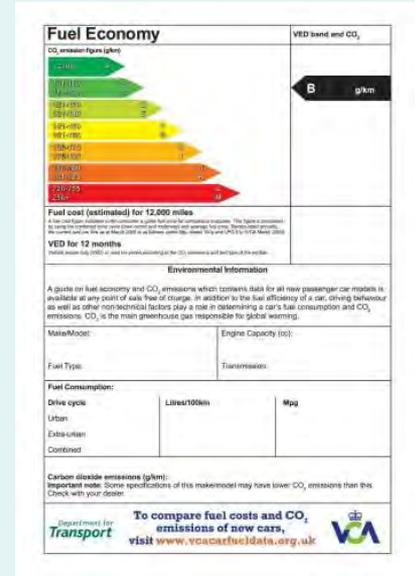
	Average CO ₂ of new cars in 2011	% change 2011/2007
 PT	124	-13.3%
 DK	125	-19.9%
 IE	126	-22.7%
 NL	126	-22.2%
 FR	128	-14.1%
 BE	130	-15.0%
 IT	130	-11.6%
 ES	136	-12.3%
 UK	138	-15.3%
 EL	139	-15.8%
 SI	139	
 AT	141	-13.0%
 PL	141	-8.4%
 CZ	141	
 FI	142	-18.9%
 HU	142	
 DE	143	-14.4%
 SK	145	
 SE	145	-19.4%
 LT	147	
 LU	147	-10.4%
 LV	155	
 EE	156	

Creating Market Demand – Information, Incentives, Taxation

- ❑ Consumers are slow to react and change
- ❑ Different levers work with different groups
 - Annual taxation seen as key to older generation
 - Insurance costs are critical for Younger drivers
 - Safety seen as critical to families
 - 50% of new car market in UK is Company car - Taxation
- ❑ Listen to the market and ask “ how can low carbon fit this demand”
- ❑ Role of LowCVP in Countering media “Hype”

Success – Early development of national regulations

- Implemented New Car Fuel Economy Label ahead of legislation, through voluntary agreement with OEM's, Government, Consumer groups
- Developed sustainability and carbon reporting standards for Biofuels, allowing the UK to implement the renewable transport fuels obligation



Department for Transport

Renewable Transport Fuels Obligation

The Renewable Transport Fuel Obligation order is the principle legislation for the regulation of biofuels used for transport in the UK.

Opportunity – Consumer information for new technology

- ❑ EV and PHEV vehicles do not fit the legislated labelling directive
- ❑ Consumers and media do not understand the 235mpg for the Ampera (Volt) vehicle
- ❑ Manufacturers using different calculations for equivalent mpg (based on price, energy etc)
- ❑ European Label Directive prescribes the figure to use from the type approval.

Fuel Economy		VED band and CO ₂	
<p>CO₂ emission figure (g/km)</p> <p>A: < 100 B: 101-110 C: 111-120 D: 121-130 E: 131-140 F: 141-150 G: 151-160 H: 161-170 I: 171-180 J: 181-190 K: 191-200 L: 201-210 M: 211-220 N: 221-230 O: 231-240 P: 241-250 Q: 251-260 R: 261-270 S: 271-280 T: 281-290 U: 291-300 V: 301-310 W: 311-320 X: 321-330 Y: 331-340 Z: 341-350 AA: 351-360 AB: 361-370 AC: 371-380 AD: 381-390 AE: 391-400 AF: 401-410 AG: 411-420 AH: 421-430 AI: 431-440 AJ: 441-450 AK: 451-460 AL: 461-470 AM: 471-480 AN: 481-490 AO: 491-500 AP: 501-510 AQ: 511-520 AR: 521-530 AS: 531-540 AT: 541-550 AU: 551-560 AV: 561-570 AW: 571-580 AX: 581-590 AY: 591-600 AZ: 601-610 BA: 611-620 BB: 621-630 BC: 631-640 BD: 641-650 BE: 651-660 BF: 661-670 BG: 671-680 BH: 681-690 BI: 691-700 BJ: 701-710 BK: 711-720 BL: 721-730 BM: 731-740 BN: 741-750 BO: 751-760 BP: 761-770 BQ: 771-780 BR: 781-790 BS: 791-800 BT: 801-810 BU: 811-820 BV: 821-830 BW: 831-840 BX: 841-850 BY: 851-860 BZ: 861-870 CA: 871-880 CB: 881-890 CC: 891-900 CD: 901-910 CE: 911-920 CF: 921-930 CG: 931-940 CH: 941-950 CI: 951-960 CJ: 961-970 CK: 971-980 CL: 981-990 CM: 991-1000</p>		<p>A 27 g/km⁽¹⁾ (weighted)</p>	
<p>Fuel and electricity cost (estimated) for 12,000 miles</p> <p>A guide price for comparison purposes is calculated using the combined drive cycle (town centre and motorway) and average fuel and electricity price.</p> <p>Fuel consumption for plug-in hybrid vehicles is measured in two conditions, one with the battery freshly charged and another where it is significantly depleted. A weighted average of the two figures obtained is calculated based on an assumption that a vehicle is driven 16 miles (25km) beyond its maximum electric range, using the engine as required without recharging.</p> <p>Cost is recalculated annually. Unit cost as at March 2012: petrol £1.36/litre, electricity 13.7p/kWh.</p>			
<p>Fuel</p> <p>£322</p>		<p>Electricity</p> <p>£344</p>	
<p>Total</p> <p>£667⁽¹⁾</p>			
<p>1st year rate⁽²⁾</p> <p>£0</p>		<p>Standard rate⁽³⁾</p> <p>£0</p>	
<p>VED for 12 months</p> <p>Vehicle Excise Duty (VED) or road tax varies according to the CO₂ emissions and fuel type of the vehicle.</p>			
<p>Energy consumption</p> <p>235.4 Mpg and 4.8 Miles/kWh⁽⁴⁾</p>		<p>Electric range</p> <p>52 Miles⁽⁵⁾</p>	
<p>Environmental Information</p> <p>A guide to fuel economy and CO₂ emissions which contains data for all new passenger car models is available at any point of sale free of charge. In addition to the fuel efficiency of a car, driving behaviour as well as other non-technical factors play a role in determining a car's fuel consumption and CO₂ emissions. CO₂ is the main greenhouse gas responsible for global warming.</p>			
<p>Make/Model</p> <p>VAUXHALL Ampera Model Year 2012 Plug-in EV & 1.4</p>		<p>Engine Capacity (cc):</p> <p>1398</p>	
<p>Fuel Type:</p> <p>Electricity/Petrol⁽⁶⁾</p>		<p>Transmission:</p> <p>E-CVT</p>	
<p>Fuel Consumption Drive Cycle</p>		<p>Litres/100km</p>	
<p>Urban</p> <p>N/A</p>		<p>Mpg</p> <p>N/A</p>	
<p>Extra-urban</p> <p>N/A</p>		<p>N/A</p>	
<p>Weighted combined</p> <p>1.2⁽⁷⁾</p>		<p>235.4⁽⁸⁾</p>	
<p>Carbon dioxide emissions (g/km) (weighted): 27</p> <p>Important note: Some specifications of this make/model may have lower CO₂ emissions than this. Check with your dealer.</p>			
<p>⁽¹⁾ A 1st year VED rate will be applied to cars registered for the first time (customer effective from 1st April 2015).</p> <p>⁽²⁾ The standard 12 month VED rate for all registered cars in this band is shown for the purposes of comparison. Note: figures quoted reflect the current rate only; cost may be subject to change in the future.</p> <p>⁽³⁾ Please note that figures quoted are calculated under specific test conditions. They may not be achieved under 'real world' driving conditions. However, the figures serve as a means of comparing models of a similar type.</p> <p>⁽⁴⁾ A list of electric vehicle charging points is available here: http://plugshare.co.uk/.</p>			
<p>Department for Transport</p>		<p>To compare fuel costs and CO₂ emissions of new cars, visit http://carfueldata.direct.gov.uk</p>	

Success – Offer the consumer a bargain!

- ❑ In UK we were not able to get consumers to purchase cleaner diesel until a 1p differential in the duty rate was introduced.
- ❑ However, continual increases in fuel price have not significantly changed travel behaviour.
- ❑ The small differentials in Vehicle Excise Duty have a disproportionate influence on consumer choice
- ❑ Usage tax rates can drive the used car market and hence residual values, but consumers need to be informed

Success – Progressive CO2 based taxation

- ❑ Consumer purchasing behaviours vary widely
- ❑ A portfolio of taxation gives the greatest shift
 - Registration Tax based on CO2
 - Ownership Tax Based on CO2
 - Fuel Duty
 - Progressive CO2 taxation of [Company Cars](#) has been very powerful in UK
- ❑ These currently also significantly support Ultra low emissions vehicle (eg EV and PHEV) uptake.



Opportunity – Support for Electric Vehicles

- Government grants of 7000 Euros widely adopted across Europe
- No duty or VAT on Electricity
- Exemption from Congestion charge
- Exemption from company car tax
- Enhanced capital allowance
- Free recharging points

- But..... Still uptake is very slow, consumers are not yet engaged.

Creating Market Supply - Engaging Industry

- ❑ Creation of Technology Strategy Board to channel funding
 - Tying government support to Lower Carbon solutions
 - Clear sequence of research, development and demonstration funding paths
- ❑ Creation of Automotive Council, Industry Roadmaps,
- ❑ Creation of OLEV (Office for Low Emissions Vehicles) marriage between Transport and Industrial departments of government
- ❑ Competition works to drive business behaviour
- ❑ Laying out a clear long term strategy to allow business to plan.
- ❑ Give engineers a challenge!

Opportunity – Infrastructure standards

- ❑ EU [Clean Fuel Strategy](#) aims to build a compatible infrastructure for transport fuels across Europe
- ❑ Defines standards for Refuelling equipment and geographical spread
- ❑ Mandates the provision of fuel types irrespective of national plans and existing development.
- ❑ Does not include specification of the fuels
- ❑ Omits new potential technology eg Inductive charging or battery swap

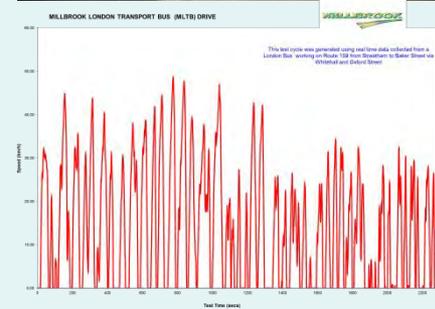
Opportunity – Energy policy

- ❑ Renewable Energy Directive mandates all European countries to increase the proportion of energy from renewable sources to 20% by 2020 with 10% in transport.
- ❑ Governments have not put in place measures to deliver, (UK has no clear plan after RTFO ends in 2014)
- ❑ There is no clear fuel specification plan for manufacturers to design vehicles towards
- ❑ Debate over sustainability of biofuels has undermined confidence in public and industry
- ❑ Disastrous introduction of E10 to German Market



Success – Moving Beyond Tailpipe

- ❑ UK Green Bus Fund regulation give incentives to vehicles defined as Low Carbon Emission Bus
- ❑ The criteria, developed by the LowCVP, are technology neutral but include:
 - A Real World Test cycle developed from operational data
 - Incorporation of Full GHG emissions (Incl Methane, N₂O and CO₂)
 - Full Well to Wheel analysis.
- ❑ Ultimate aim is full Life Cycle Analysis of Vehicles



Opportunity – Differentiate for technology applications

- ❑ Rapid increase in diesel fleet in Europe led to significant Urban Air Quality problems.
- ❑ Some OEMs now acknowledge that Diesel is not right for small city cars
- ❑ Electric Vehicles are not acceptable for high mileage operation
- ❑ An efficient Hybrid Bus solution is not allowed as Engine from Passenger car is not approved to HD engine test

Conclusions

Regulations must be:

- Based on high level targets and trajectories independent of party Politics
- Coordinated across government departments
- Built on broad consensus and collaboration with industry
- Long term, not knee Jerk, to encourage industrial investment
- Based on consistent data and measurement methods
- Technology neutral and forward looking
- Communicated effectively to the buying community
- Appropriate to the application

Any Questions?

The Low Carbon Vehicle Partnership

For more information

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