

How Much Information Is Enough?

**Green Global NCAP Labelling / Green Scoring Workshop
Global Fuel Economy Initiative**

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Outline of Presentation

- ❑ How does the information shown on fuel economy labels differ internationally?
- ❑ Outline of research studies exploring presentation of environmental information on product labels
- ❑ Examples of multi criteria environmental labels
- ❑ What insights have been gained from LowCVP research
- ❑ Conclusion – how to balance information



Information processing theories suggest there is a limit to the amount of information a human can absorb over a specific period of time. (Born et al 2011)

Examples of information presented on fuel economy labels – benefits and drawbacks

Energi
 Personbil/Varebil Diesel/Benzin **Billogo**
 Mærke
 Model

<p>Lavt forbrug</p>	A
<p>Højt forbrug</p> <p>Brændstofforbrug i km pr. liter <small>(ifølge officiel typegodkendelse)</small></p> <p>CO₂-udslip i gram pr. km</p> <p>Økonomioplysninger Ejeravgift pr. år Tillægsafgift ved blandet erhvervsprivat pr. år Tillægsafgift ved privat anvendelse pr. år Brændstoffordgift ved 20.000 km og X,XX kt.liter</p> <p>Sikkerhed <small>Færdselsstyrelsens vurdering af bilens sikkerhed på basis af Euro NCAP. Tilpasset ganske versioner. Nærmere oplysninger findes på www.bilviden.dk</small></p> <p>Partikelfilter <small>Biler uden filter pålægges årlig partikeludledningsafgift.</small></p>	<p>X</p> <p>Y</p> <p>Z W U T</p> <p>★★★★★</p> <p>Ja</p>

En oversigt over brændstofforbrug og CO₂-udledning for alle nye personbiler fås gratis på alle salgsteder og findes på www.bilviden.dk

Ud over bilens oplyste brændstofforbrug spiller også køremåde en rolle for en bilens faktiske brændstofforbrug og CO₂-udledning. CO₂ er den drivgas, der er hovedansvarlig for den globale opvarmning. Forbrug til klimaanlæg og lignende indgår desuden ikke i oplysningerne om brændstofforbrug.

Dieselmotorer, der ikke er udstyret med partikelfilter, er mere sundhedsskadelige end benzindrivne.

Fuel Savings Guide

1
 MORE STARS
 MORE SAVINGS

Fuel Economy
 20.7
 Miles per gallon (Petrol)

Model: _____
 Engine/Make: _____
 Model Year: _____
 Vehicle Equipment: _____
 Engine Size: _____
 Transmission: _____
 Fuel: _____

에너지소비효율등급

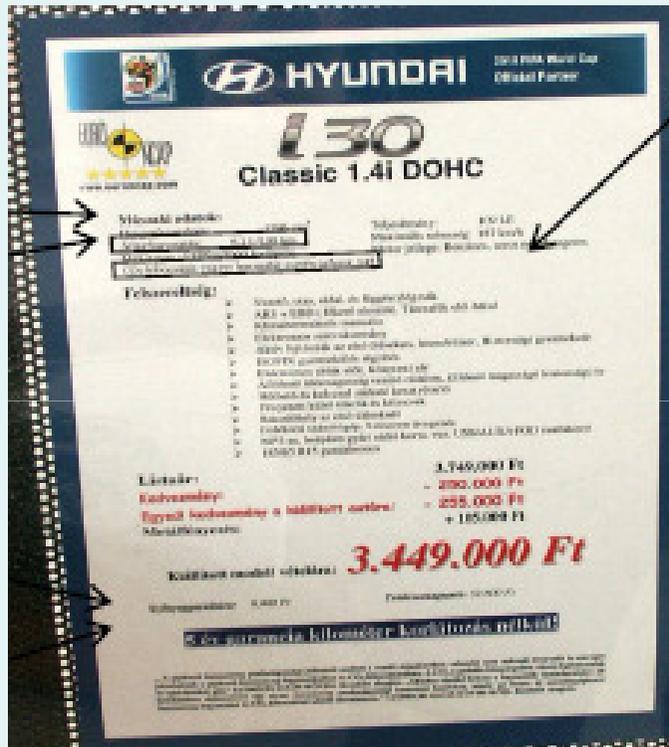
1

평균소비연료량 38.9 km/l
 CO₂ 23 g/km

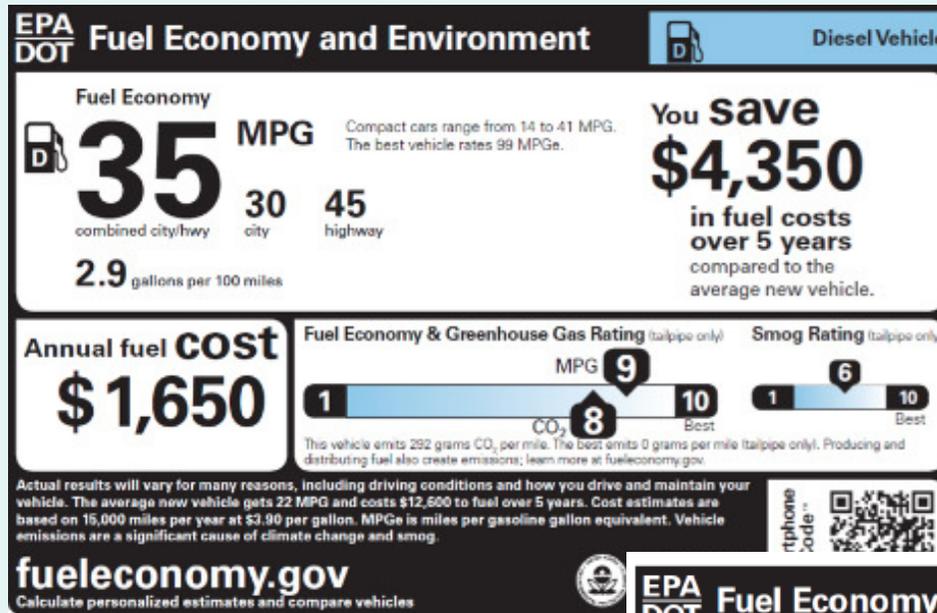
모형명: A-82130 용량: 754 L
 75,000 km/년



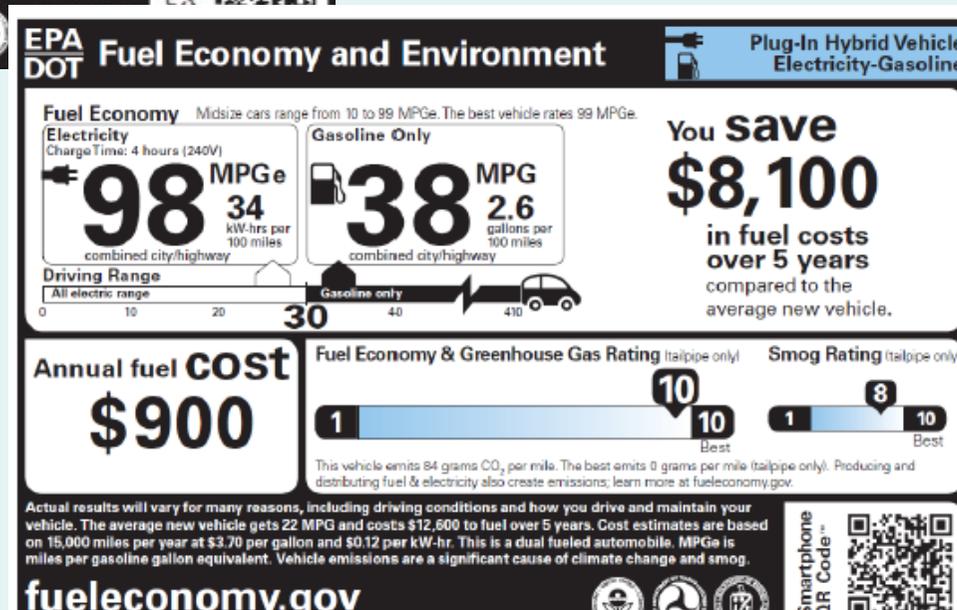
Examples of 'information only' fuel economy labels



'Hybrid' Comparative Fuel Economy Labels



- Highly numerical
- High volume of information for PHEV
- Smog rating (smaller size)?
- MPGe simplifies comparisons
- QR code & URL leads consumer to further information



Comparison of fuel economy labels

Presentation of CO2 emissions fuel economy	Country
Comparative colour coded	UK, Germany, France, Spain, Finland, Belgium, Denmark
Comparative scale system	US, New Zealand, Korea, India
Information only	Hungry, China
Additional Information	
Running cost (fuel/road tax)	US, Denmark UK, Germany, Finland
Air quality rating system	US
Exhaust emission class	Austria
Driver behaviour impact on fuel	UK, US, Belgium, Denmark, France, Hungry Spain
Electricity consumption for EVs	US, Germany, UK
CO2 from electricity consumption	Switzerland
Euro NCAP	Denmark
QR code	US
Website for further information	US, New Zealand, UK, Belgium

European Commission - Study of different options for communicating environmental information on products

- ❑ Strong support - aggregated indicator for multi criteria environment information, combined with up to three individual indicators
- ❑ Quality and clarity rather than quantity
- ❑ Preference for performance based on a comparative scale eg stars, letters, numbers or colour codes
- ❑ Information support via on a website and smartphones
- ❑ The way units and values are expressed can affect consumer understanding
 - Physical values too technical – preference A,B,C
 - Favor visual markers and signs



Three Optimal Environmental Designs Identified

1 ENVIRONMENTAL IMPACT

Compared to similar products, this product is:



BETTER AVERAGE WORSE

This rating has been verified by independent experts and is based on this product's contribution to:

- Global warming 
- Air pollution 
- Water pollution 



www.eco-impact.eu

2 ENVIRONMENTAL IMPACT

Compared to similar products, this product is:



BETTER AVERAGE WORSE

This rating has been verified by independent experts and is based on this product's contribution to:

- Global warming  27 gP-eq
- Air pollution  180 gPO-eq
- Water pollution  536 g IO-eq



Learn more about this label
www.eco-impact.eu

3 ENVIRONMENTAL IMPACT



BETTER AVERAGE WORSE

This rating has been verified by independent experts and is based on this product's contribution to:

- Global warming  C
- Air pollution  B
- Water pollution  B

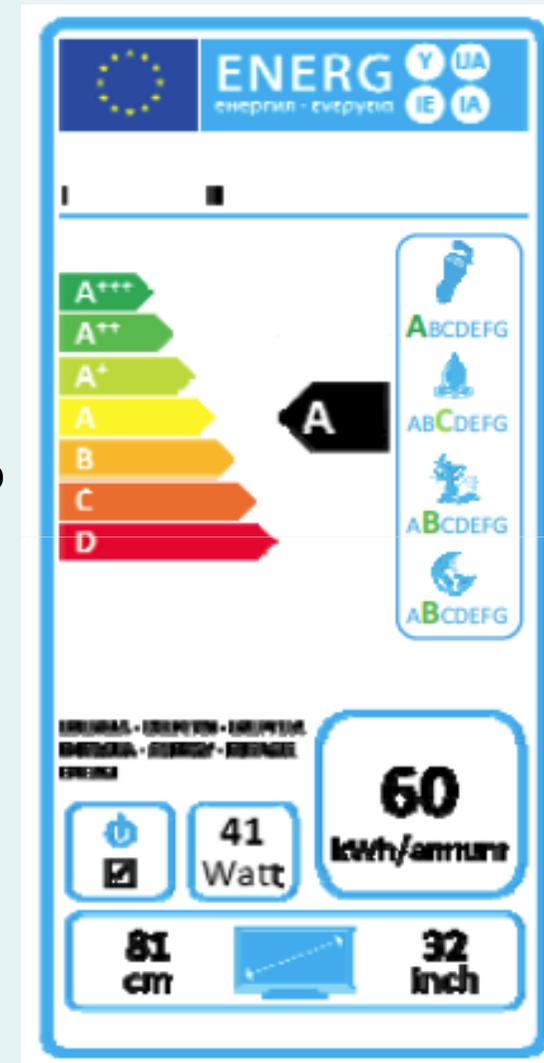


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Balance between level of technical information and how it can be communicated to consumers to be easily understood

European Commission - Research on EU Product Label Options

- ❑ Study investigates creating a product label providing environmental lifecycle performance.
- ❑ Labels presenting comparative efficiency via stars, letters or numbers vastly preferred to continuous scale
- ❑ Preferred less technical terminology such as “power” to represent electricity consumption and “units per day” over “kWh per day”
- ❑ Grouped and delineated information, presented in a hierarchy of importance avoids overloading
- ❑ Evidence of reduced running costs is key to getting more consumers to buy energy efficient products



Most favoured design

Environmental Life Cycle Rating Label

- ❑ A weighted overall score and scores for four life cycle impact stages
- ❑ Layered approach allows readers to choose between abbreviated and detailed information
- ❑ Star rating systems - simplist for people to understand, positive connotation across cultures
- ❑ Consumer survey – well received, expand consumer awareness and contribute to environmental purchasing decisions



'The label is clearly laid out and conveys a lot of information simply, I would prefer a more concrete scale'

Do any of these labels risk information overload?

Flybe Bombardier Q300		
Local Environment		
Noise Rating		
Less		
More		
Take off & Landing CO ₂ Emissions		A (763kg)
Take off & Landing CO ₂ Emissions (per seat)		15.3kg
Take off & Landing Local Air Quality ¹		2kg
Journey Environment		
Total Aircraft Fuel Consumption By Journey Length	Domestic (500km)	A (678kg)
	Near EU (1000km)	A (1249kg)
	Short Haul (1500km)	n/a
CO ₂ Emissions Per Seat By Journey Length	Domestic (500km)	B (43kg)
	Near EU (1000km)	B (79kg)
	Short Haul (1500km)	n/a
Passenger Environment		
	Minimum Leg Room	30"
	Number Of Seats	50

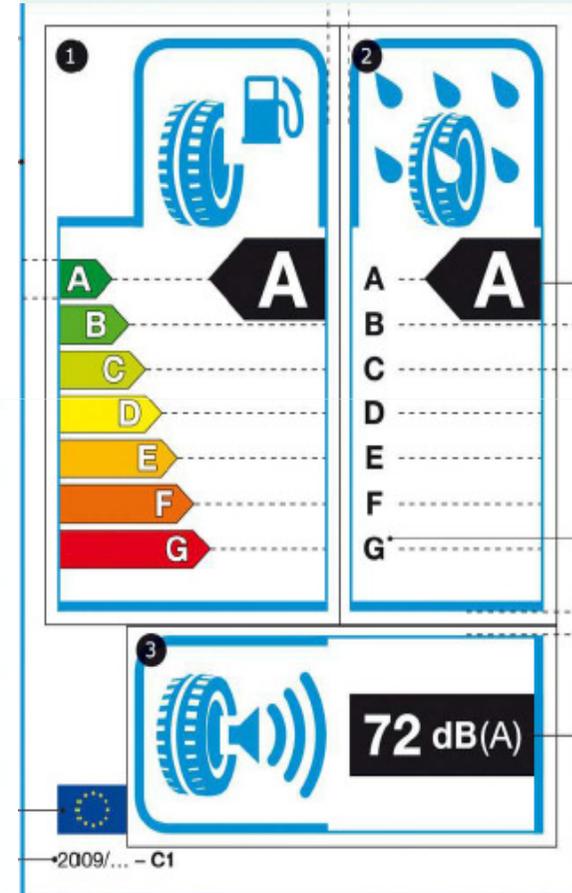
¹ Emissions of Nitrogen Oxides as an indicator of the effects on local air quality

flybe.

A



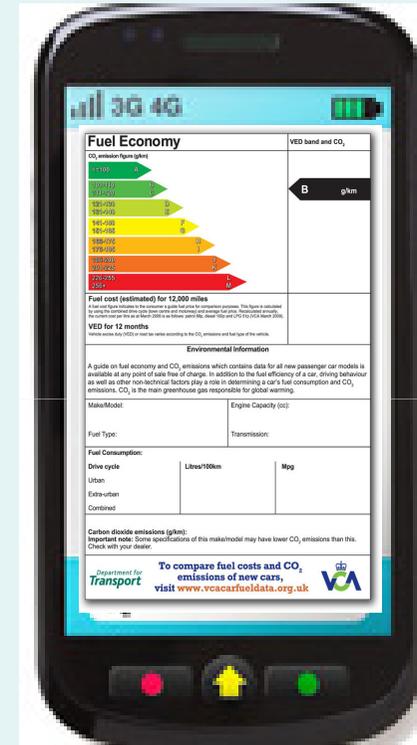
Environmental Facts	
Overall Weighted Score.....	5/10
Energy & Emissions	
Production Greenhouse Gases.....	3/10
Transportation Greenhouse Gases.....	7/10
Water	
Embodied Water.....	2/10
Water Pollution.....	1/10
Social	
Labor Practices.....	8/10
Transparency.....	10/10
Toxins	
Herbicide.....	5/10
Pesticide.....	5/10
Other Toxins.....	6/10
Resources	
Biodiversity.....	5/10
Soil.....	4/10
Air Quality.....	6/10
Nutrient Use.....	3/10



LOW
low carbon vehicle partnership

LowCVP Car Labeling Research Insights

- ✓ MPG important
- ✓ Fuel cost important
- ✓ CO2 figure less important, link to cost (tax)
- ✓ Recognise colour coded comparative scale
- ✓ Require more practical information on EV/PHEV
- ✓ Metrics related to EV/PHEV challenging
- ✓ Internet, and smart phones, dominant research method for consumers when buying a car
- ✓ Support for a QR code and URL on label
- ✓ Future proof the label to allow integration with an increasingly digital world



By 2015 more people will access content and services via the mobile web on smart phones and tablets than laptops and computers (International Telecommunication Union).

Conclusion – The Winning Elements

- ❑ Balance regulatory & voluntary information, **prioritise** information most likely to influence consumer purchasing :
 - 1. Fuel consumption 2. Fuel Cost 3. Environmental (CO2)**

- ❑ Information must be **clear, simple and ease cognitive processing**

- ❑ **Aggregation** of multiple environmental indicators useful
- ❑ **Comparative data** required, works well using categorised colour coding or stars – ‘creates branding’, cost comparisons useful

- ❑ Links to websites (**URL & QR codes**) can avoid information overload

- ❑ Care with **metrics** and **terminology**

- ❑ **Test** new labels with consumers – different cultures & demographics