

Passenger Vehicle Fuel Economy Standards and Labeling Program



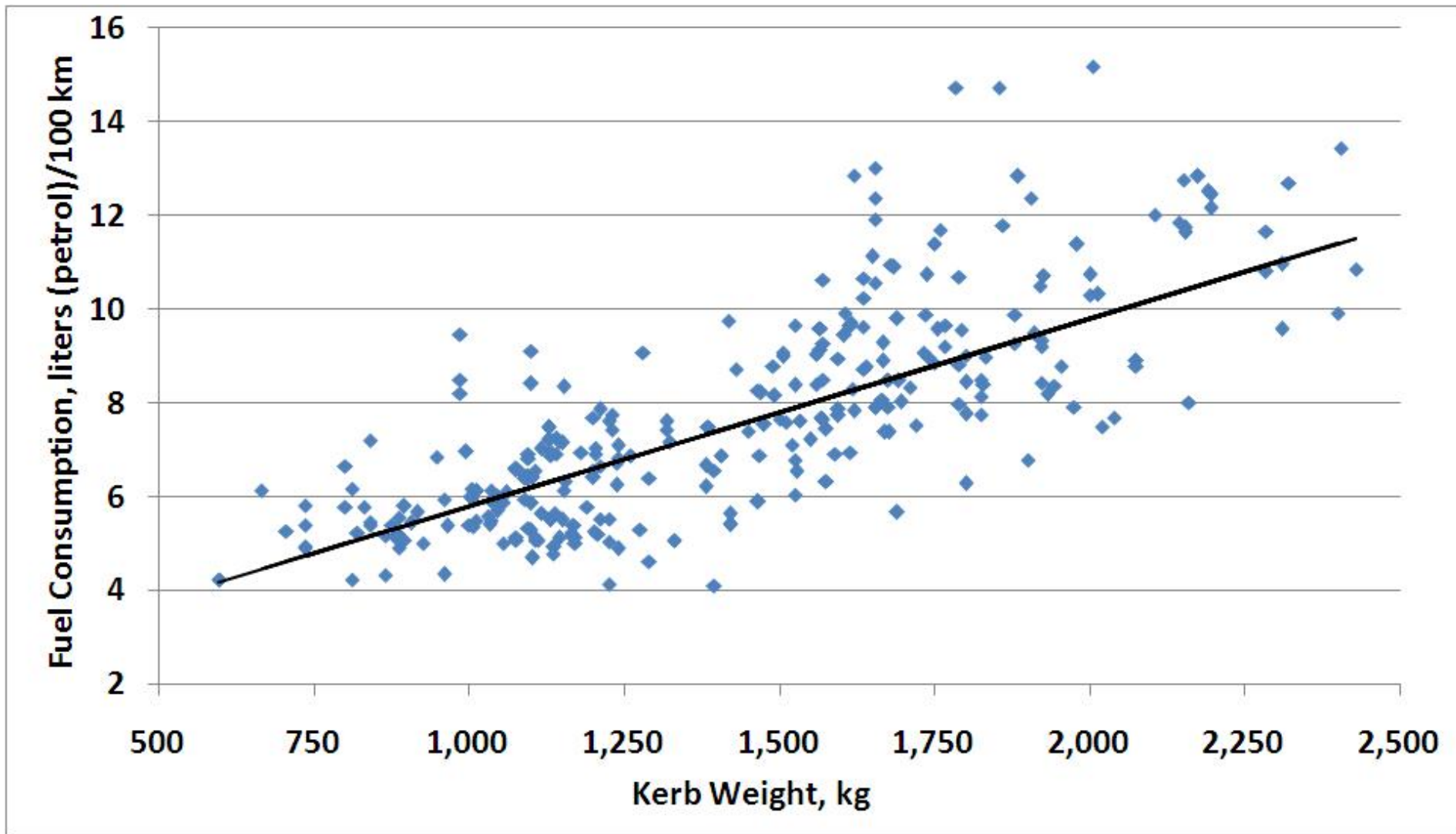
Dynamics of Indian Car Market

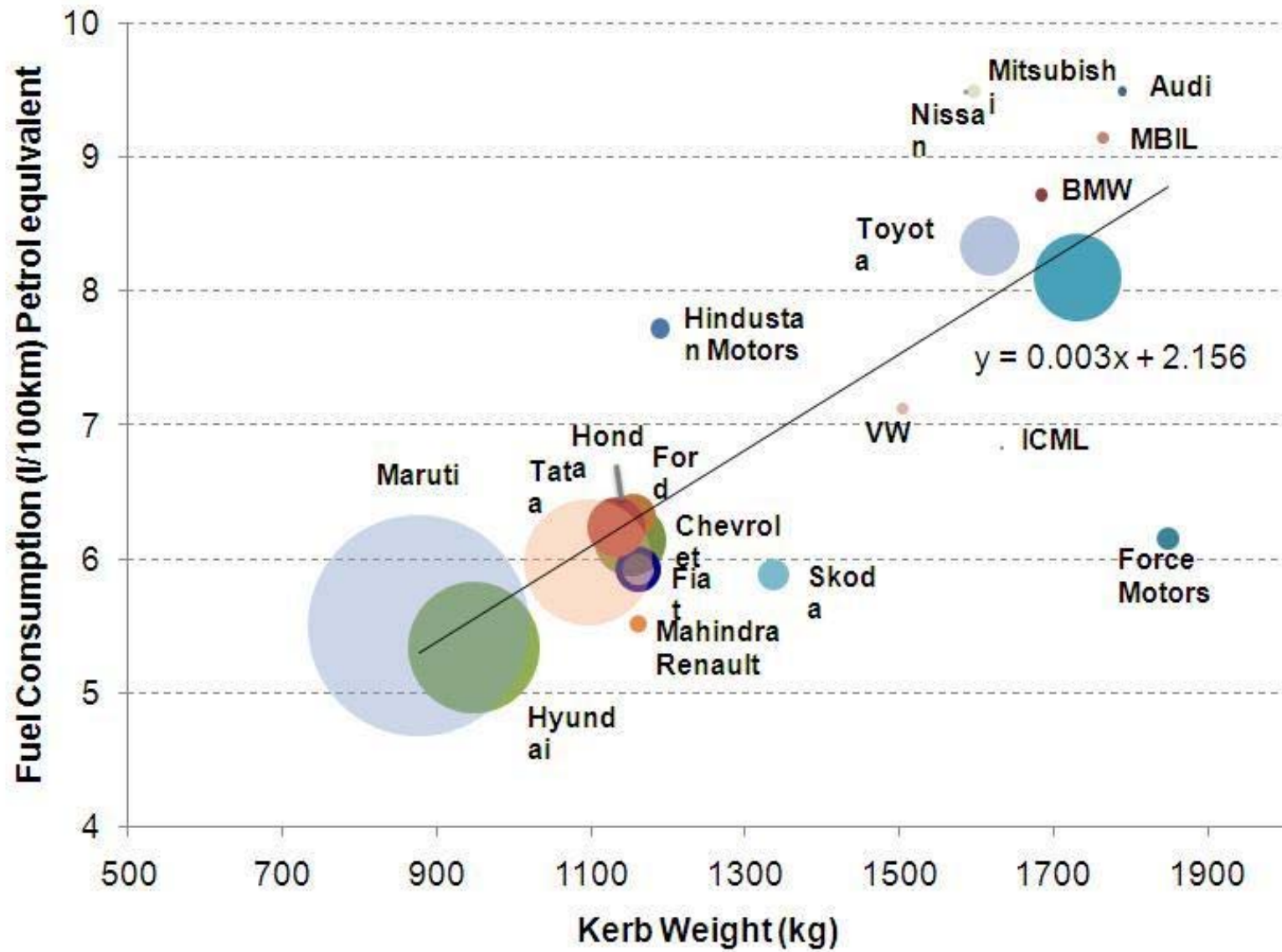
	1999-2000	2006-07	2009-10
Number of Cars sold, million	0.698	1.460	1.880
Average Weight, kg	NA	987	1037
Average Fuel Consumption, liters/100 km	NA	6.53	6.0

- The annual car sales in 2020 would increase to over 5.5 million per year.
- The total stock of cars in India in that year would exceed 46.5 million.
- The annual fuel (petrol and diesel) requirement would be in excess of 24.5 million ton of oil equivalent.
- Oil imports has already crossed over 70%.

Design & Framework

- Standards & Labeling would developed and notified by MoP/BEE under Energy Conservation Act, and implemented by MoSTRH under Motor Vehicles Act
 - Would be based on km/l
 - Use of CAFC standards, rather than MEFC standards
- Convergence with existing processes
 - Preference to coincide with fuel quality/emissions upgrades
 - Need to address fuel demand consequences of upweighting
 - Achievable improvements are based on available fuel quality
 - Relatively low penetration of EVs by 2020
 - Testing (both for initial type approval and for conformity of production) would be carried out according to TAP requirements; consequently for enforcement purposes, standards will be notified in terms of CO₂ production





Approach

To accelerate reduction in the average fuel consumption of new cars introduced in the Indian market, a two pronged approach is proposed:

- Medium and long term fuel consumption standards for new cars to provide a regulatory signal to manufacturers to continuously reduce the average fuel consumption of cars sold by them over the next 10-year period.
- Introduction of labeling of all new cars that are sold in the market, with the labels providing consumers with information on the fuel consumption of a car model, and of the relative fuel consumption of the model compared to other models in the same weight class.

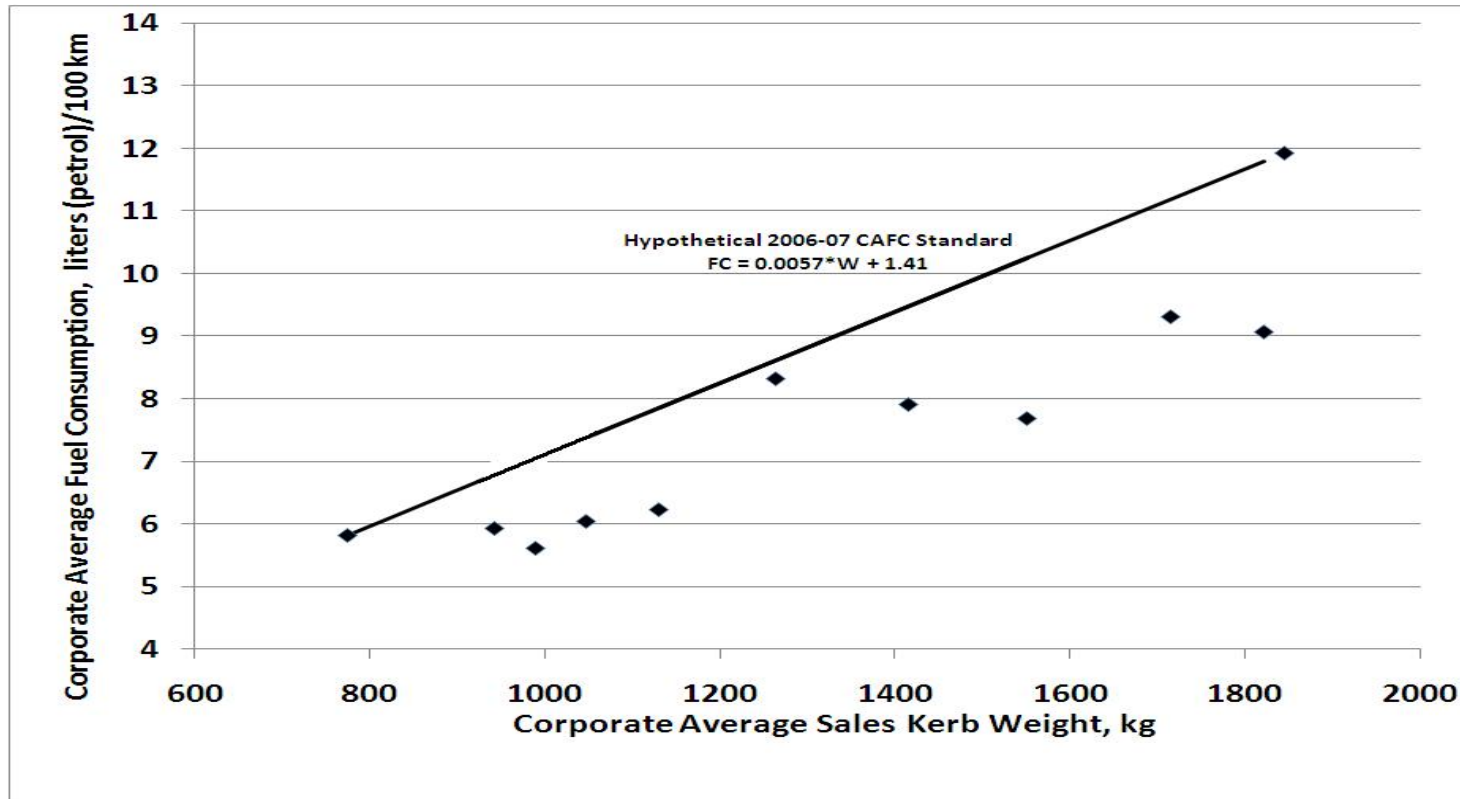
This will create:

- market pull for low fuel-consumption models.
- Market transformation in the automobile market towards high efficient car models by decreasing fuel consumption levels.

Standards Approach

- Non-significant share of EVs
- Define Standards for 2015-16
 - Enhancement of Existing designs
 - Standard could be met through fine tuning and optimization of current designs;
- Requirement of 2020-21 standard
 - Completely new Technology
 - Would require complete redesigning and retooling.

CAFC Standards for 2005-06



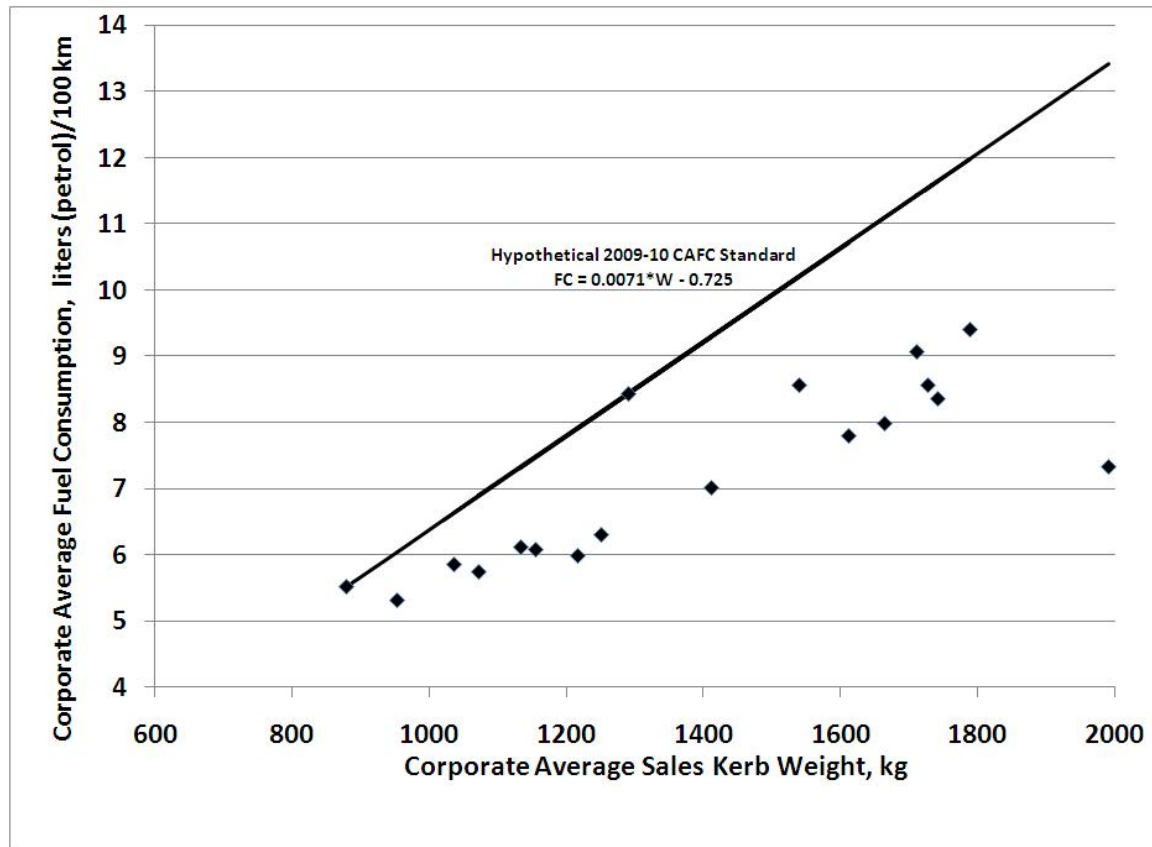
Hypothetical 2006-07 CAFC standard line (for petrol cars, and converting fuel consumption in diesel cars into equivalent petrol consumption) is¹:

$$FC = 0.0057 \times W + 1.41 ,$$

Where

FC is the CAFC standard (in liters of petrol/100 km), and
W is the corporate average kerb weight of cars sold by a manufacturer in the year (in kg)

CAFC Standards for 2009-10



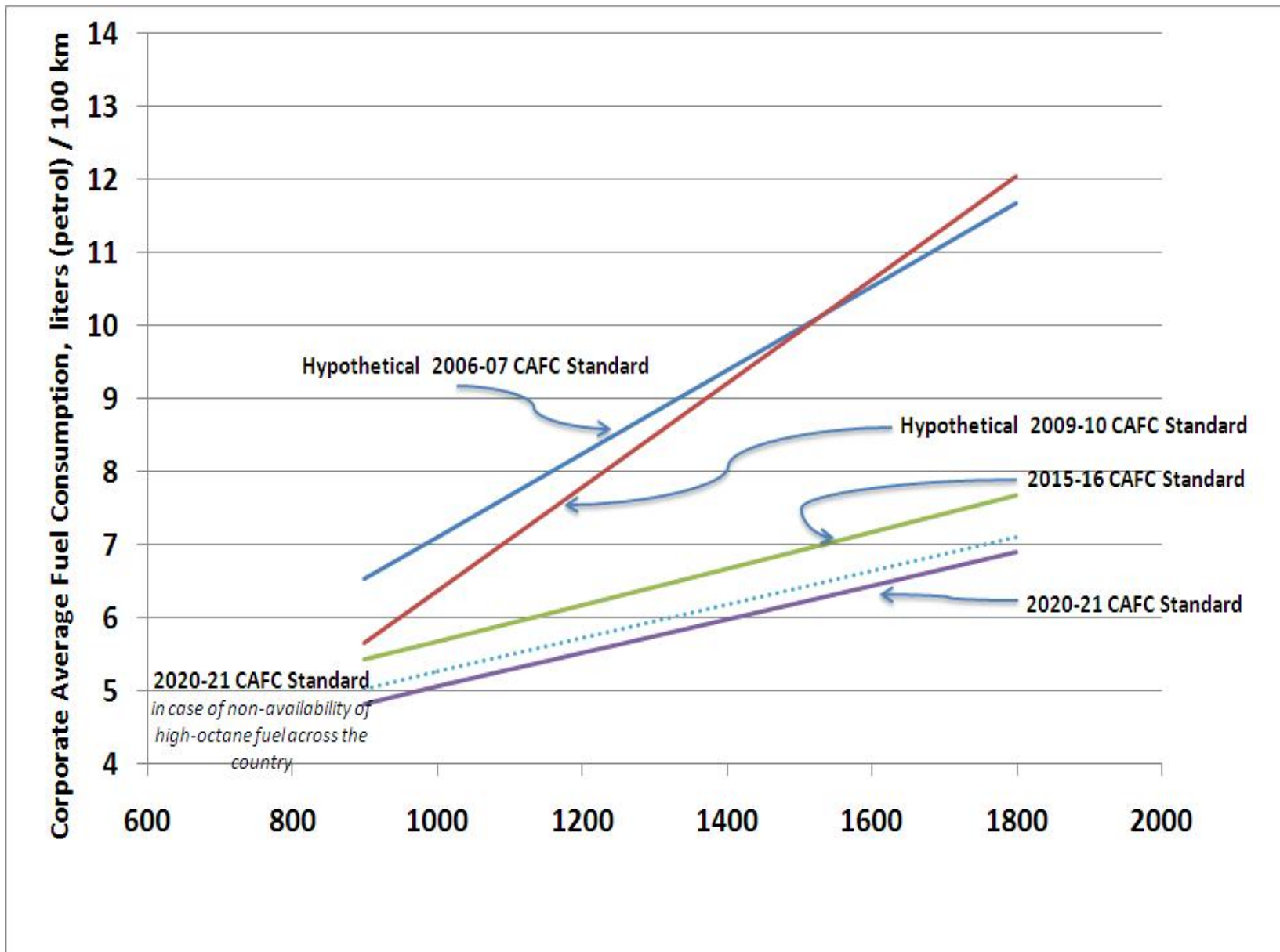
Hypothetical 2009-10 CAFC standard line (for petrol cars, and converting fuel consumption in diesel cars into equivalent petrol consumption) is¹:

$$FC = 0.0071 \times W - 0.725$$

Where

FC is the CAFC standard (in liters of petrol/100 km), and
W is the corporate average kerb weight of cars sold by a manufacturer in the year (in kg)

Evolution of Standards



Enforcement of Standards

2015-16 Standards

- The fuel consumption of vehicles will be measured according to the TAP test procedures notified under the Motor Vehicles Rules. For compliance purposes, the 2015-16 corporate average CO₂ production standard to be used with the TAP test procedures is:

$$C = 0.06 \times W + 76,$$

where

C is the Corporate Average CO₂ production in gms/km, and

W is the Corporate Average Sales Kerb Weight (in kg).

Enforcement of Standards

2020-21 Standards

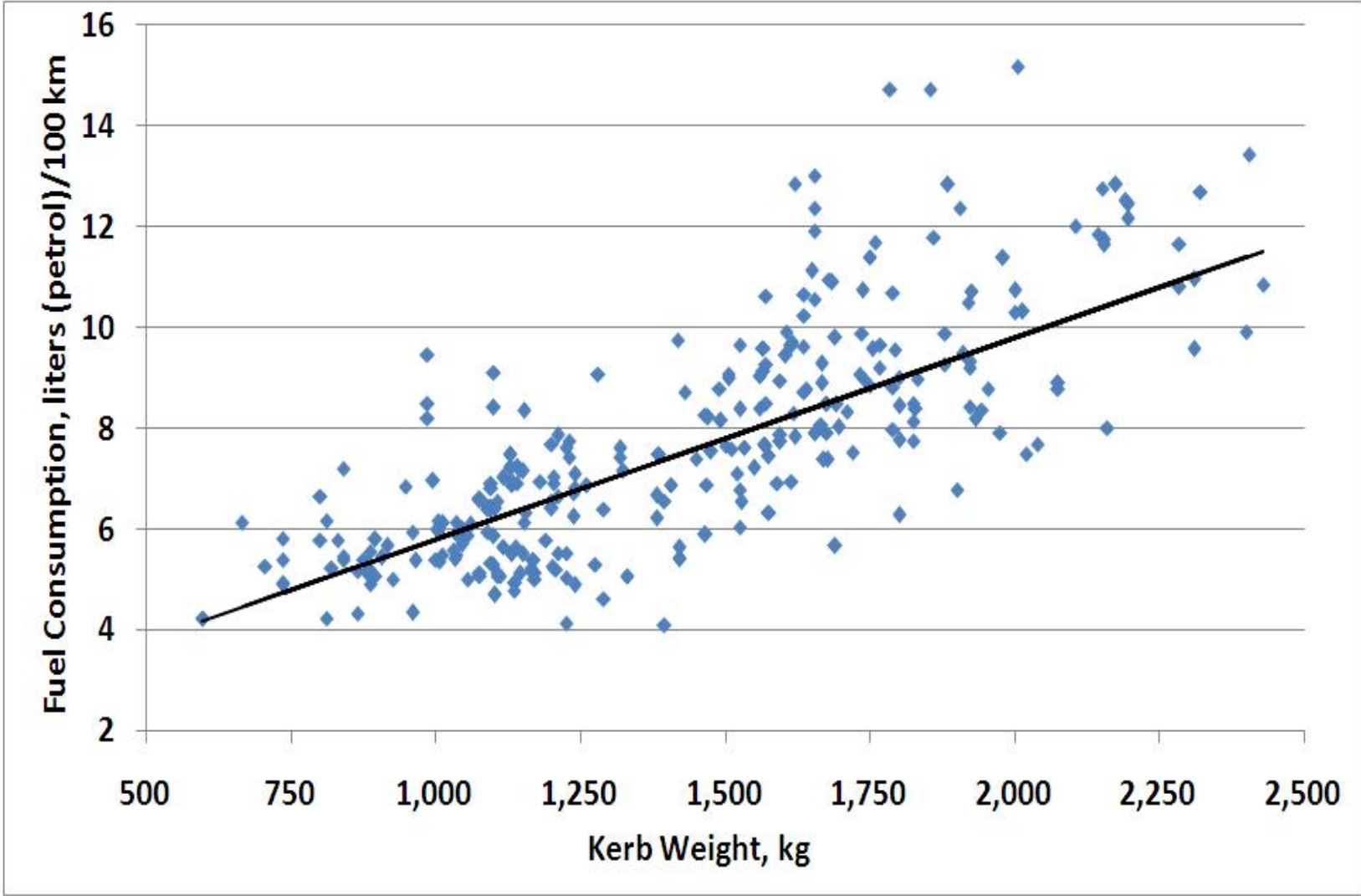
- For compliance purposes, the 2020-21 corporate average CO₂ production standard to be used with the TAP test procedures is:

$$C = 0.055 \times W + 66$$

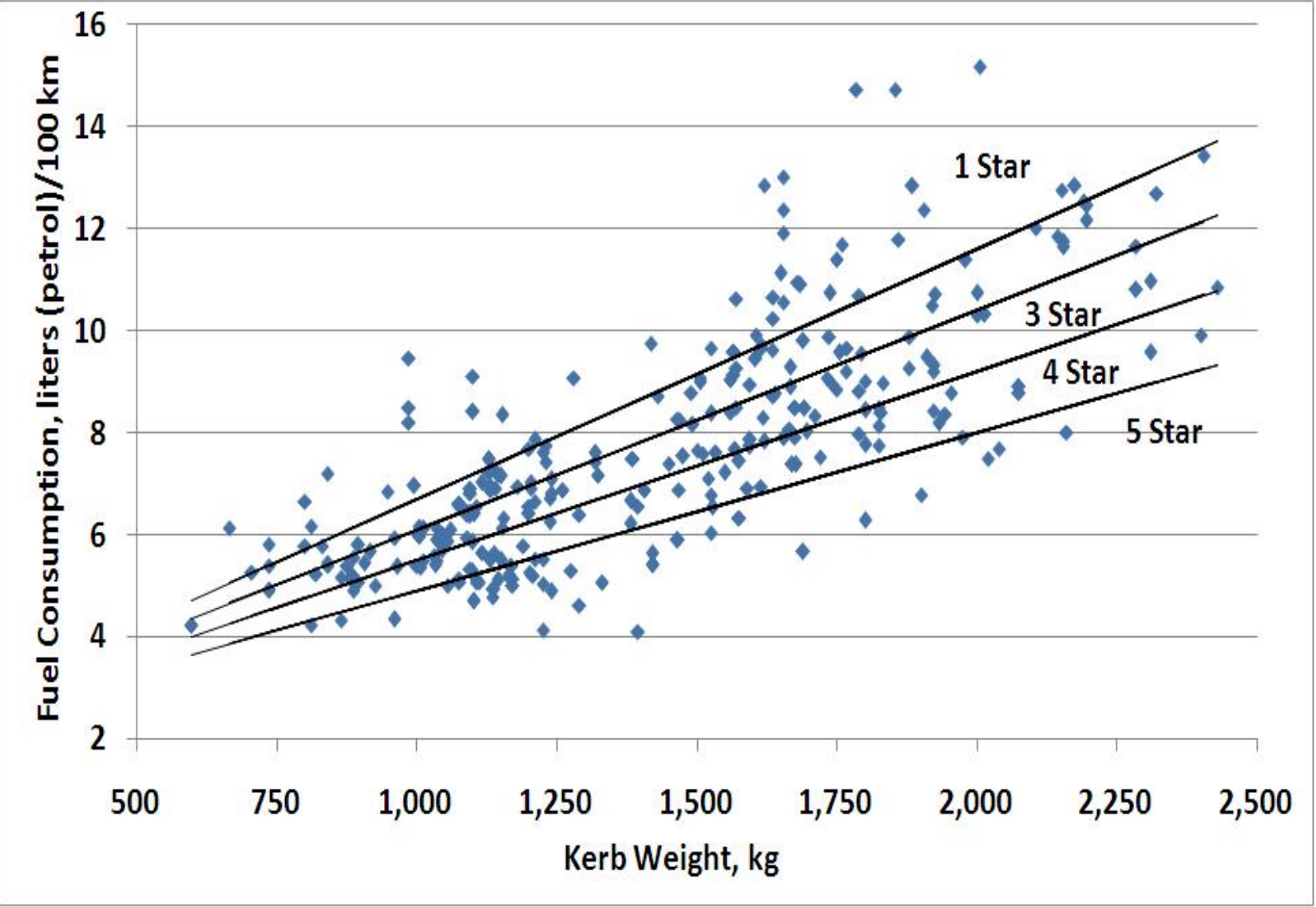
- In case, EURO V or higher grade Fuel is not available:

$$C = 0.055 \times W + 71,$$

Fuel Consumption of all Models sold in 2009-10



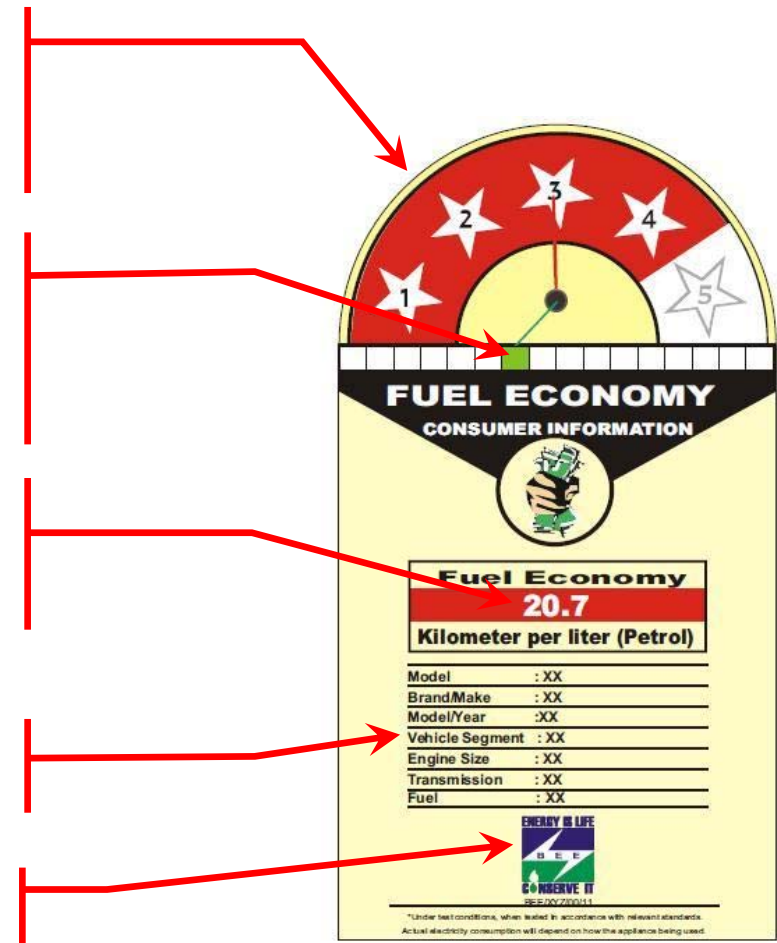
Star Label Categorization of Model-wise Fuel Consumption Data



Label Design

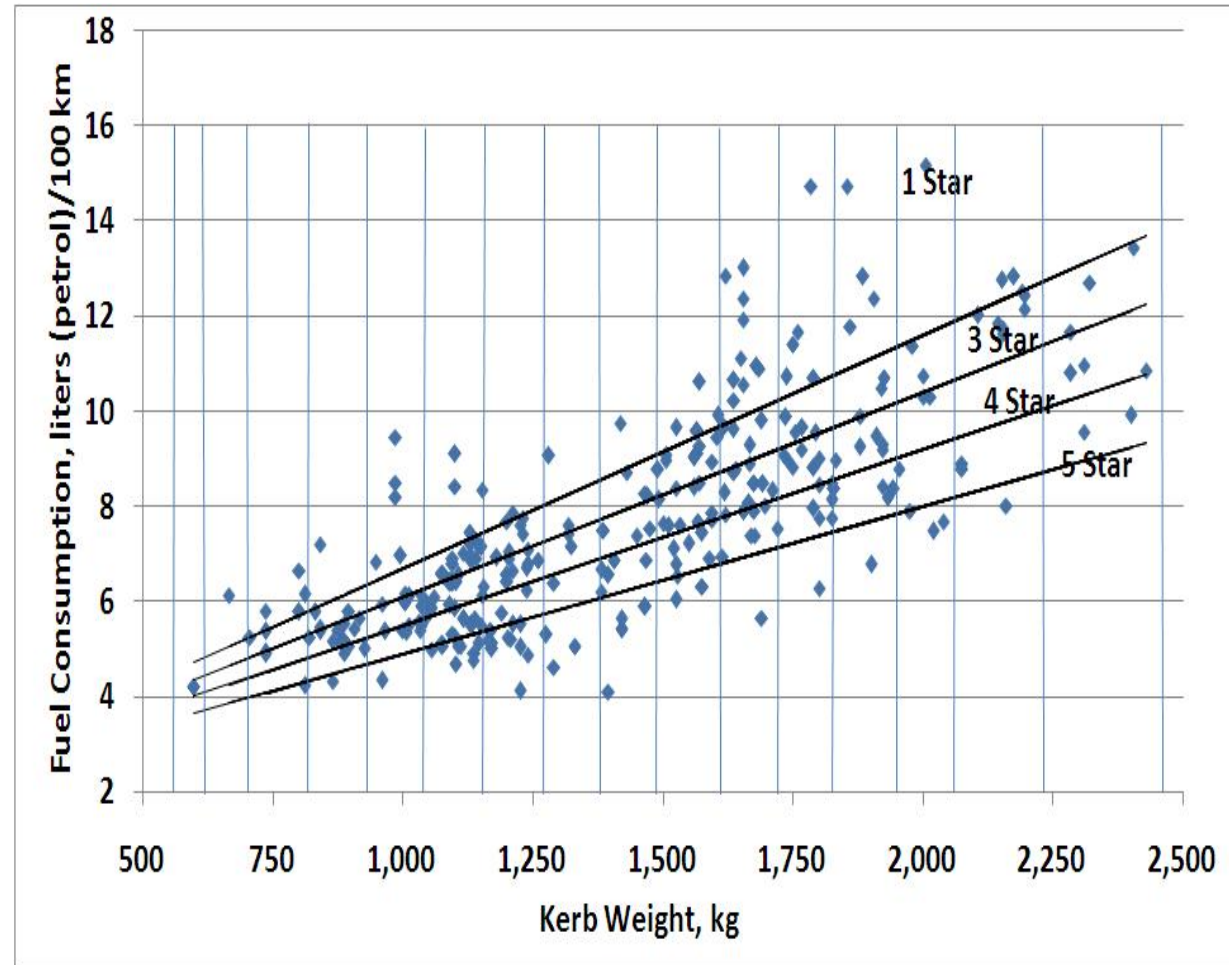
- Stars (1-5) display the relative efficiency of the model in the weight class; arrow indicates exact star rating of model
- Each box represents a weight class; the coloured box represents the weight class of the model
- Fuel consumption of the model is displayed in km/l
- Important specifications like brand, model, type, fuel type, etc.

Logo



The kerb-weight classes (converted from reference weight classes defined by TAP)

Kerb Weight (Kgs)	
Exceeding	Upto
330	390
390	445
445	500
500	560
560	615
615	700
700	815
815	930
930	1040
1040	1155
1155	1270
1270	1380
1380	1490
1490	1610
1610	1720
1720	1830
1830	1950
1950	2060
2060	2230
2230	2460
Above 2460	



Implementation

- Agreed standards and labeling programme will be notified immediately
 - MoSTRH will initiate amendment to TAP
- Manufacturers will report to MoSTRH:
 - fuel consumption data, in terms of CO₂, (measured during type test) for each model
 - Annual sales of each model
- MoSTRH will calculate the Corporate Average Kerb weight and Corporate Average CO₂ Production for each manufacturer after 2015-16 and 2020-21
 - The calculated CACP should be less than the CACP for the same CAKW on the standard line
 - Non compliance will lead to penalty under the Energy Conservation Act
- Manufacturers will apply for label based on the labeling programme and the fuel consumption of a model measured during type test
 - Check testing will be done through CoP testing
 - Labeling fee will cover outreach costs
 - Immediate voluntary labeling; mandatory from 1.4.2012



Thank you for your attention,

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