

Carbon dioxide emissions from vehicles increasing:

*Highlights of carbon dioxide emissions factors from ARAI and CO2 load estimation for Delhi:
Casts shadow on India's energy security*

1. ARAI CO2 emissions factors for cars and SUVs estimated fuel economy

Newer vintages show higher emissions and estimated

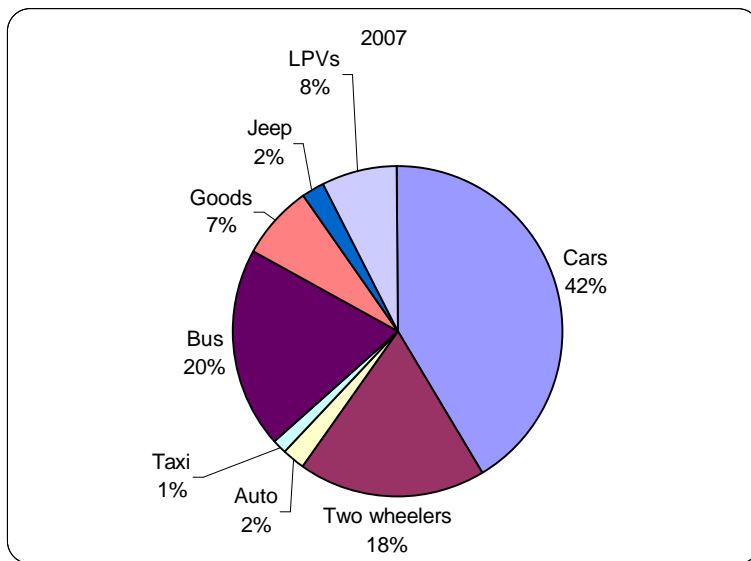
| | | CO2 emissions in gm/km | Estimated fuel economy in * km/l |
|----------------------|-----------|-----------------------------------|---|
| Petrol Cars <1000cc | 1991-96 | 96 | 22 |
| | 1996-00 | NA | NA |
| | Post 2000 | 126 | 18 |
| | Post 2005 | NA | NA |
| Petrol Cars >1400cc | 1991-96 | NA | NA |
| | 1996-00 | NA | NA |
| | Post 2000 | 143 | 16 |
| | Post 2005 | 173 | 13 |
| Diesel cars <1600cc | 1991-96 | NA | NA |
| | 1996-00 | 129 | 20 |
| | Post 2000 | 156 | 17 |
| | Post 2005 | 149 | 18 |
| Diesel MUVs <3,000cc | 1991-96 | 164 | 15 |
| | 1996-00 | 189 | 14 |
| | Post 2000 | 229 | 11 |
| | Post 2005 | 256 | 10 |

* on the basis of carbon balance method; NA: Not available

Source: Compiled and estimated on the basis of data provided by ARAI/CPCB on emission factors of vehicles models, mimeo

2. Delhi: Share of different vehicle segments in the total CO2 emissions load in 2007

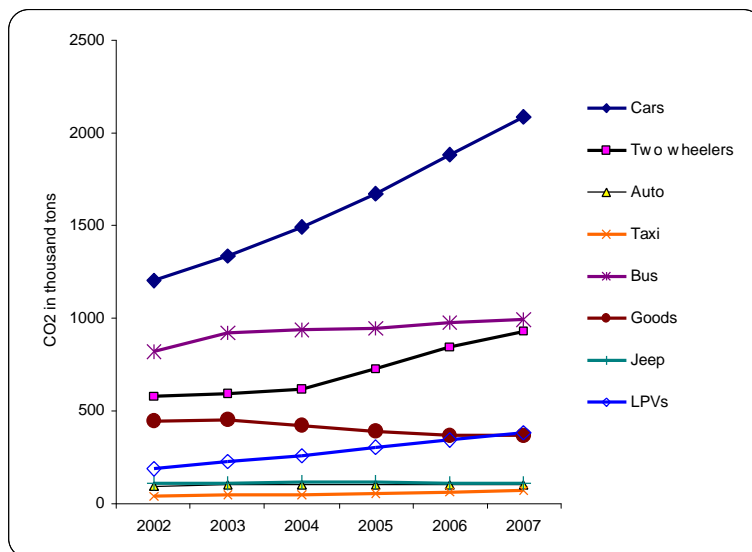
Cars are the largest contributor to the CO2 emissions load from vehicles -- 42%. Personal vehicles -- cars and two wheelers together, contribute 60 per cent of CO2 emissions from vehicles in Delhi. But buses that carry several times more people than cars contribute 20%.



Source: CSE Estimates, 2008

3. Trend in CO2 load from vehicles in Delhi: Again cars and two-wheelers record the maximum growth

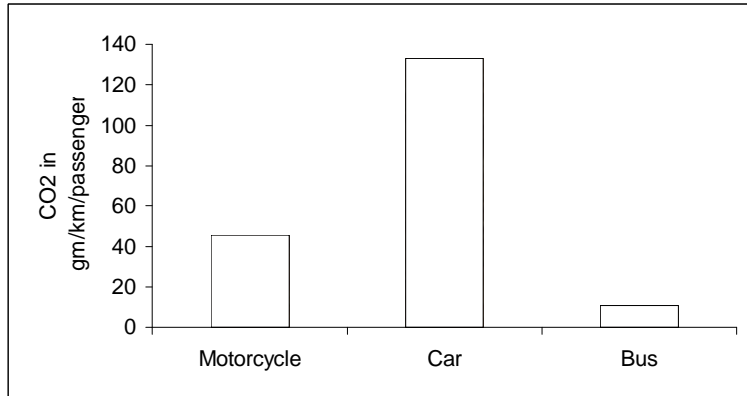
Between 2002 and 2007 the CO2 emissions from cars have increased by 73% and from two wheelers by 61%.



Source: CSE Estimates, 2008

4. Cars emit highest CO2 per passenger

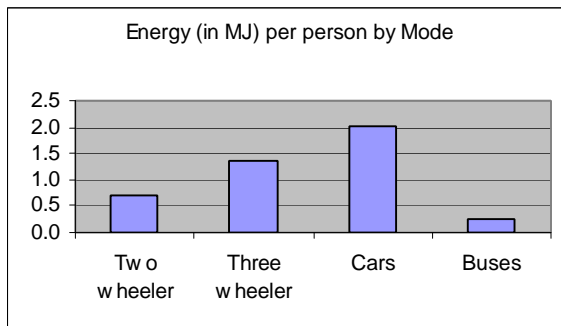
Buses carry several times more passengers than cars -- CO2 emissions per passenger in a bus is miniscule compared to cars



Source: CSE estimates, 2008

5. Energy consumption per capita by mode on BRT corridor in Delhi (at Ambedkar Nagar intersection)

Mega Joule of energy per person by mode is as low as 0.2 in buses but as high as 2.0 in cars – 8 times more



Source: Estimated by CSE