hiding
behind the poor

A REPORT BY GREENPEACE ON CLIMATE INJUSTICE

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“India contributes only 4% of the total global green house gas emissions, and in terms of per capita emissions it is about 23% of the total global average. Therefore it has been our stand so far, not to agree to any commitments related to reduction of green house gas emissions by India.”
(Press release of the Indian Government 4.June.2007)

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Facts

- India is the 6th largest CO_2 emitter in the world
- Its per capita emission is 1.67 tonnes/year
- Due to its large contribution of the service sector to India's GDP growth, India manages to keep its energy growth 3,7% well below its economic growth 8,7%
- But it's electricity production is one of the dirtiest in the world (rank 14) 0,87kg CO_2 per Kwh twice as much as that of the EU (25)

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Questions of this Study

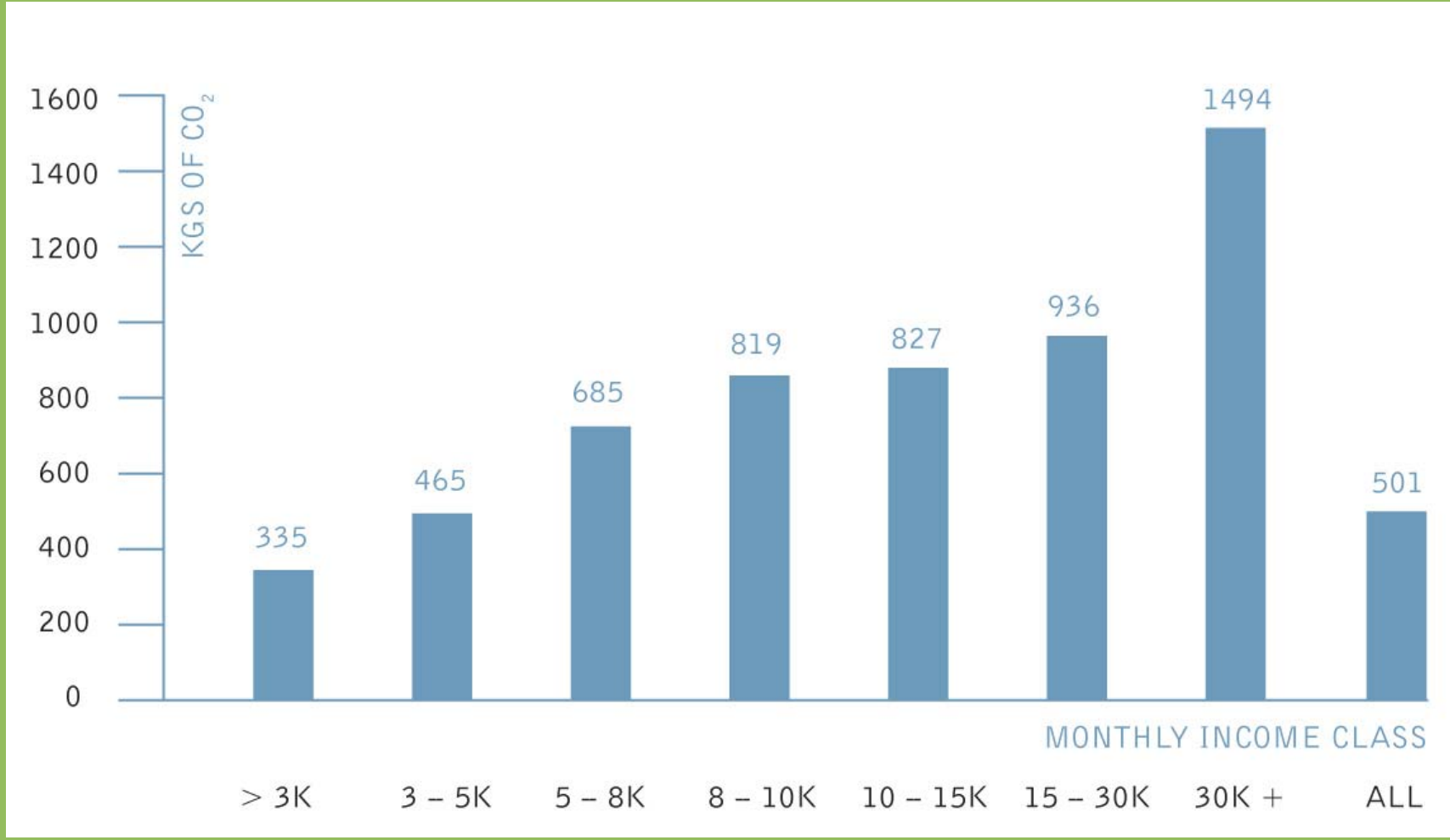
- Who is behind the average of 1,67 tonnes CO_2 per capita?
- Is the rich consumer class hiding their emissions behind the legions of poor?
- Is it not the obligation of the Indian government that demands differentiated responsibilities in the international arena to establish the same within India?

Basis of the study

- Energy consumption survey of 819 households
  - Energy use in household and transportation
- In Metros, large and small towns as well as rural India
- Differentiated in 7 income classes:
  - <3000 Rupee per month
  - 3000-5000 Rupee per month
  - 5000-8000 Rupee per month
  - 8000-10,000 Rupee per month
  - 10,000-15,000 Rupee per month
  - 15,000-30,000 Rupee per month
  - > 30,000 Rupee per month

Results

The rich emit 4.5 times more CO_2 than the poor



Per capita annual CO2 emissions from different income classes

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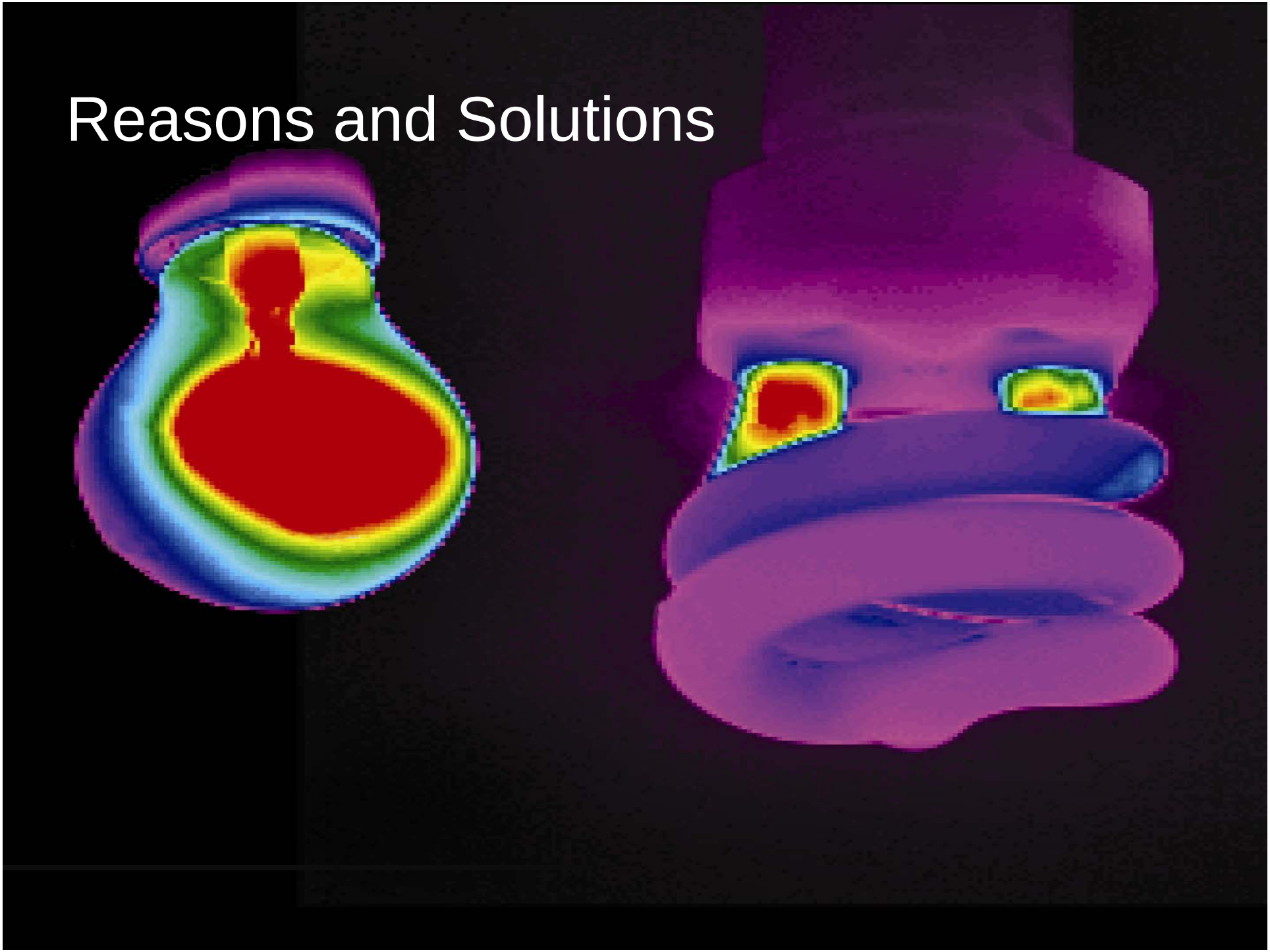
First conclusions

- There is no average India but a major divide between the emissions between the CO_2 emissions of the rich and the poor
- The divide (factor 4.5) is almost as big as that between “average India” and the EU (factor 6.3)
- While the poor are contributing the least to the problem of climate change, they are the most vulnerable to its impacts
- There is a clear climate injustice in the country

Reasons and Solutions



Household Appliances

Appliances	<3000	>30,000	Factor
Cooking	97	120	1,2
Lighting	134	218	1,6
Fan	40	142	3,6
Electric Geyser	4	65	16,3
TV	16	44	2,8
Washing Machine	0	22	-
AC	0	65	-
Others	4	534	133,5
Total	198	1091	5,5

CO2 emissions [kg/year] of household appliances of rich and poor

Lighting

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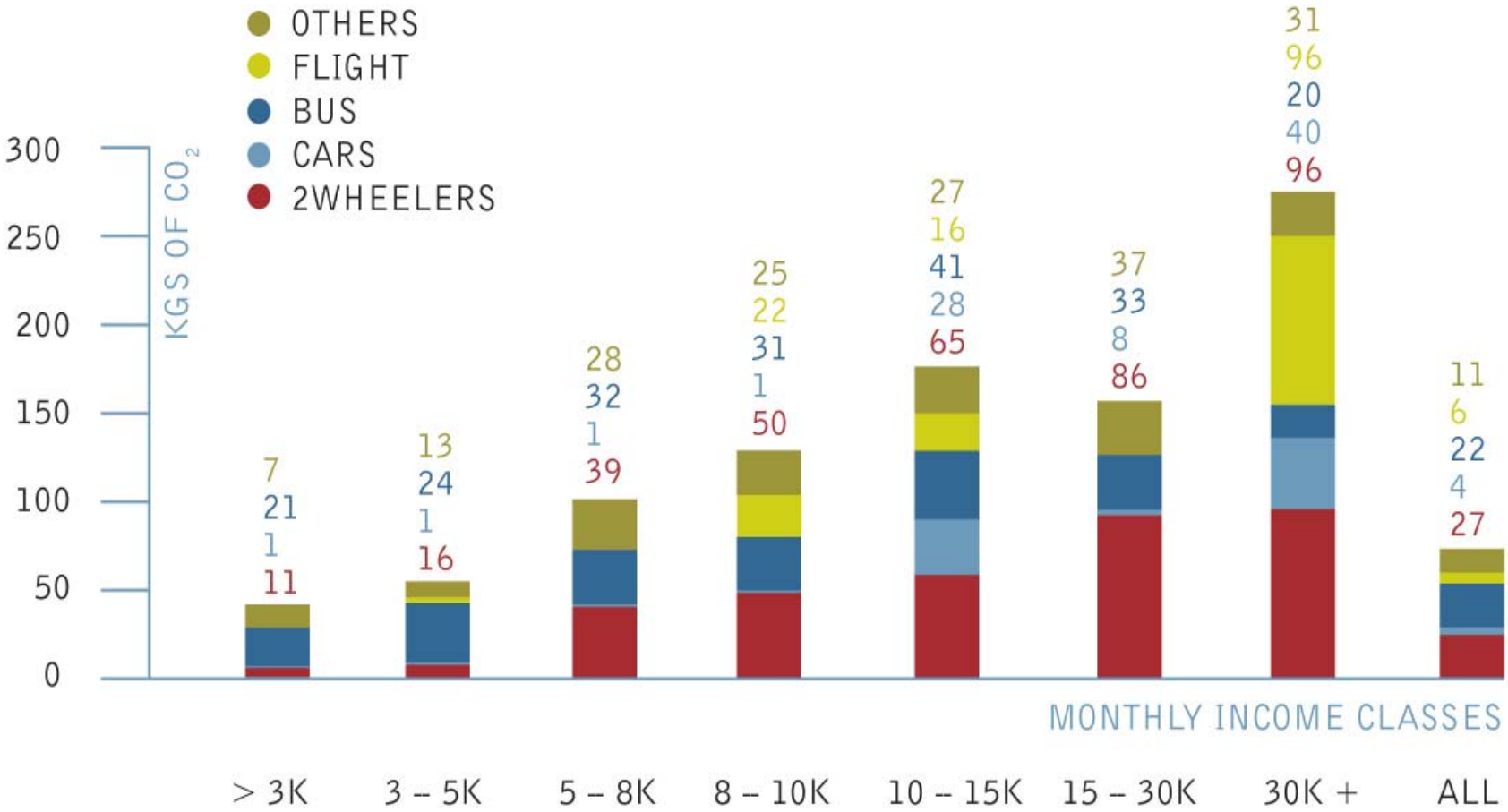
Transport


OTHERS
FLIGHT
BUS
CARS
2WHEELERS
KGS OF CO_2
300
250
200
150
100
50
0
7
21
1
11
13
24
1
16
28
32
1
39
25
22
31
1
50
27
16
41
28
65
37
33
8
86
31
96
20
40
96
11
6
22
4
27
MONTHLY INCOME CLASSES
> 3K
3 – 5K
5 – 8K
8 – 10K
10 – 15K
15 – 30K
30K +
ALL

Conclusions and solutions

- Consumerism is massively increasing emissions
- An efficiency revolution of household products can significantly decrease electricity use/ CO_2 emission
- Fuel efficiency standards help decrease the transport emissions
- Better public transport can further decrease it
- Fast railway lines between metros are needed to halt the steeply increasing air-traffic

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International Comparison

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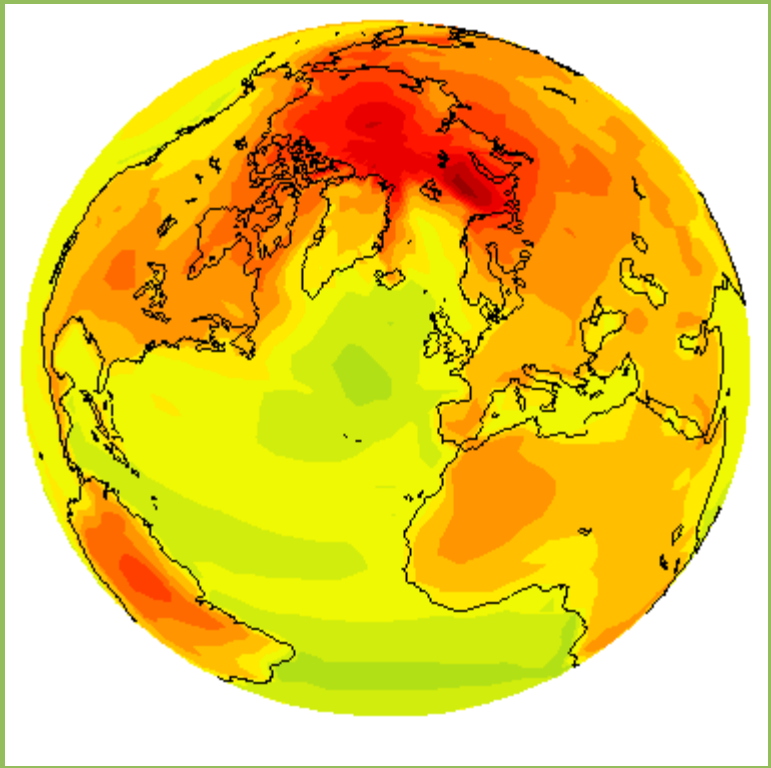
Principles of Climate Justice



- Keep global temperature rise below 2ºC to avoid major impacts
- Help the vulnerable poor to adopt to Climate change
- Create the carbon space for the poor to develop

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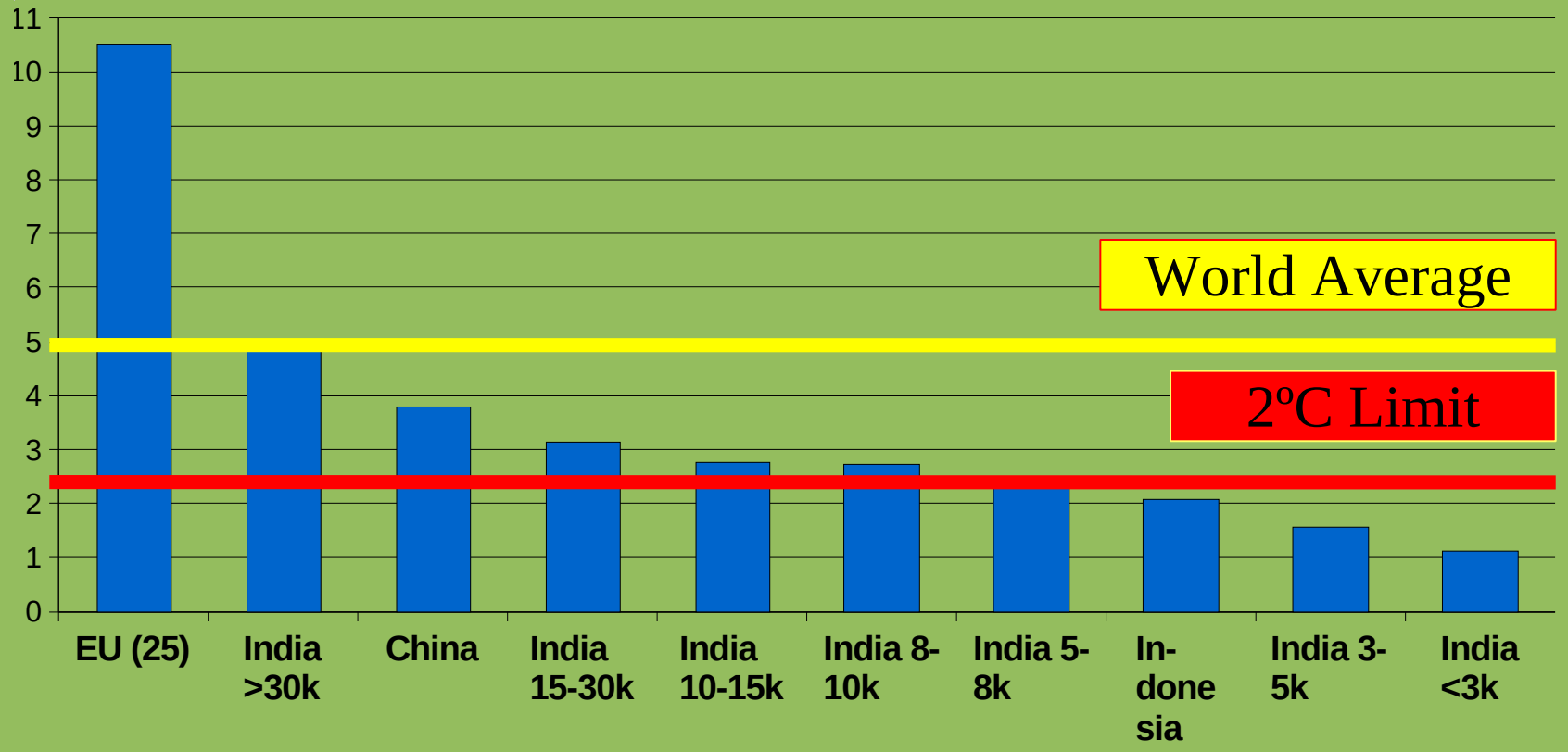
International Comparison of Per Capita CO_2 Emissions



Conclusions

- While even the rich Indians are still having half the Carbon footprint of an average European they have reached the global average.
- 150 Million Indians have already passed the CO2 emission levels needed to keep the planet below 2ºC, thus either contribute to major ecological and social distress or depriving the carbon space for the poor to develop.

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Future Trends if business as usual

- An increasing number of Indian will experience the joy of increasing wealth pushing their CO_2 emissions over the 2ºC limit.
- As outlined and the 11th 5year plan and indicated in the 12th Indian electricity production will increasingly rely on coal, thus increasing the CO_2 emissions per KWh.

What needs to be done

- Maintaining the living standard of the rich and increasing that of the poor while reducing the Carbon footprint of their life style.

A European can
watch twice as long TV
wash twice as much clothes
use his AC twice as long
and still produces as much CO_2
as an Indian
only because of the carbon intensity
of India's energy production

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Governmental action

- Reducing the carbon intensity of India's electricity production by shifting from coal to gas and renewables
- Initiate an Efficiency revolution by establish mandatory efficiency thresholds for household appliances and cars.
- Create Climate Justice in the Country

Creating climate justice

In line with the polluter pays principle and the international carbon markets the India needs to:

- Establish national carbon markets
- Create a Carbon Tax regulation

To create funds for sustainable development and decrease poverty in the country thus increasing the adaptation potential of the poor to climate change

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The Indian government needs to realize that their credibility to claim common but differentiated responsibility in international negotiations will depend on their ability to create the same principle within India

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The Methodology of the Study

➢ Field research

- Key objective of this research was to assess level of carbon emission across different socio economic classes and to assess disparity across these segments

Towards this, it covered the following info areas:

- Carbon emission estimated from the following
  - Electricity consumption – appliance and capacity; in rural, pump set for field should be out of calculation
  - Cooking Fuel consumption
    - Fire wood, gober and gober gas considered as renewal sources and not added to CO2 emission
  - Petrol / diesel consumption
  - Flights taken – business trip for last month and vacationing for the year
- Profiling details
  - No. of members in the household
  - Income of the household – MHI
  - Education of the Chief wage earner
  - Occupation of the Chief wage earner

Methodology in Detail

- **Methodology:**
- The study to assess C02 emission level amongst different classes in India with quantitative structured interviewers

- **Target Group:**
  > Males/Females
  > SEC A,B,C,D,E & R1,R2,R3
  > Interview who spends maximum time in the house

	East	West	North	South
Metros	Kolkata (75)	Mumbai (75)	Delhi (75)	Chennai (75)
5 lac+ pop towns	Patna (50)		Ludhiana (50)	
1 to 5 lac pop towns		Kolhapur (50)		Hubli (50)
<1 lac pop towns	Chatra (25)	Bhadravati (25)	Baghpat (25)	Medak (25)
Rural	Around the < 1 lac pop town (200)			
Total	**200**	**200**	**200**	**200**

Conversion factor used for CO2 emission

Category	Conversion Factor	Source
Electricity (per kW)	0.87	http://www.mnes.nic.in/baselinepdfs/chapter2.pdf
Coal (per kg)	2.06	www.branz.co.nz
LPG (per kg)	2.78	IEMA (Institute of Environmental Management & Assessment
Kerosene (per litre)	2.41	Clients reference
CNG (per kg)	2.67	IEMA (Institute of Environmental Management & Assessment
Diesel (per litre)	2.46	www.branz.co.nz
Petrol (per litre)	2.14	www.branz.co.nz
Air (per person)	0.26	www.branz.co.nz
Train-Diesel (per person)	0.13	www.branz.co.nz
Train-Electric (per person)	0.17	www.branz.co.nz
Firewood (per kg)	1.07	**Considered Renewable**
Gober (per kg)	1.07	
Gober Gas (per kg)	2.67	

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Total electricity calculation

Step 1 – calculating annual bill amount for electricity

- Respondents were asked to give their estimated bill amount for winter months, summer months and rest of year
- They were also asked to give their estimates of how many months would they classify as winter months, summer months and rest of year
- Weighted average of seasonal bill with length (No. of months) of season was done to arrive upon annual electricity bill of the household

Step 2 – converting bill to units

- Annual bill amount was converted to units using the billing structure for the city
- Thus, this gave an estimate of no. of units of electricity consumed per household per annum

Step 3 – validating the calculations

- For validating this estimate, at household level, appliances used, nos. used and months used, days used in a month, and no. of hours used per hour
- Using wattage estimates for all appliances, total electricity consumption was calculated
- Comparison of this with estimated electricity consumption showed that the two estimates were in line; in few cases, these two had a wide variance, these cases were rejected from analysis
- This appliance analysis was also used to assess contribution of different appliances to the total electricity consumption

Appliances Capacity assumptions

Appliance	Capacity	Appliance	Capacity
TV			
14"	26w	Bulb	10-200w
21"	60w		
29"	120w	Bulb CFL (Normal)	12-25w
Refrigerator	500-600w	Water purifier	25w
Washing Machine		Cooking heater	75-125w
Full Automatic	350w		
Semi Automatic	460w	Room heater	120w
Air conditioner		Air cooler	170w
1 tonnage	1300w		
1.5 tonnage	1900w	Celling fan	75w
2 tonnage	2800w	Table fan	25w
Microwave (30L)	2650w	Electric Gyser	200w

Universe Data Sources

Population estimates

- Population for the year of 2007 – 1,129,866,154
- Population for the year of 2012 – 1,205,000,000

Source :http://en.wikipedia.org/wiki/India_demographics

Weighting scheme used

- Weighting was done such as to project the SEC proportions in the samples to represent the universe
- Universe estimates used were from Marketing Whitebook Business World, 2006
- MHI segments sizing was taken as thrown up by sampling within the respective SEC segments

Projection to 2012

- For this income segment trends in last 5 years were taken from internal IMRS studies
- This was used to project trends for the next 5 years and to calculate proportion of income segments in 2012
- These proportions were multiplied with projected total population in 2012 as given above to arrive upon income segments sizes in 2012