



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 CO₂ 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 CO₂ 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 CO₂ 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?

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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

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Results

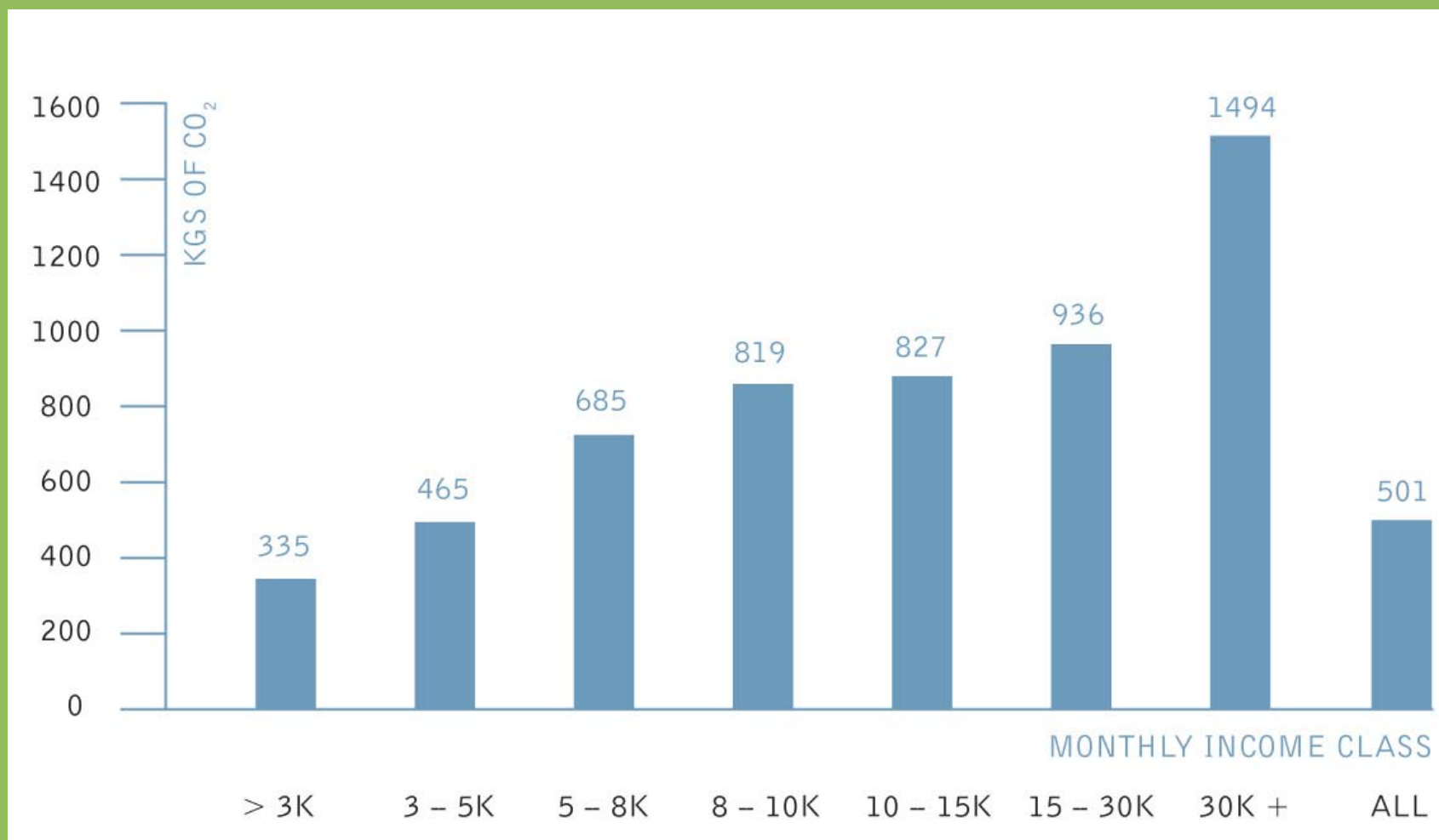


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The rich emit 4.5 times more CO₂ than the poor



Per capita annual CO₂ emissions from different income classes

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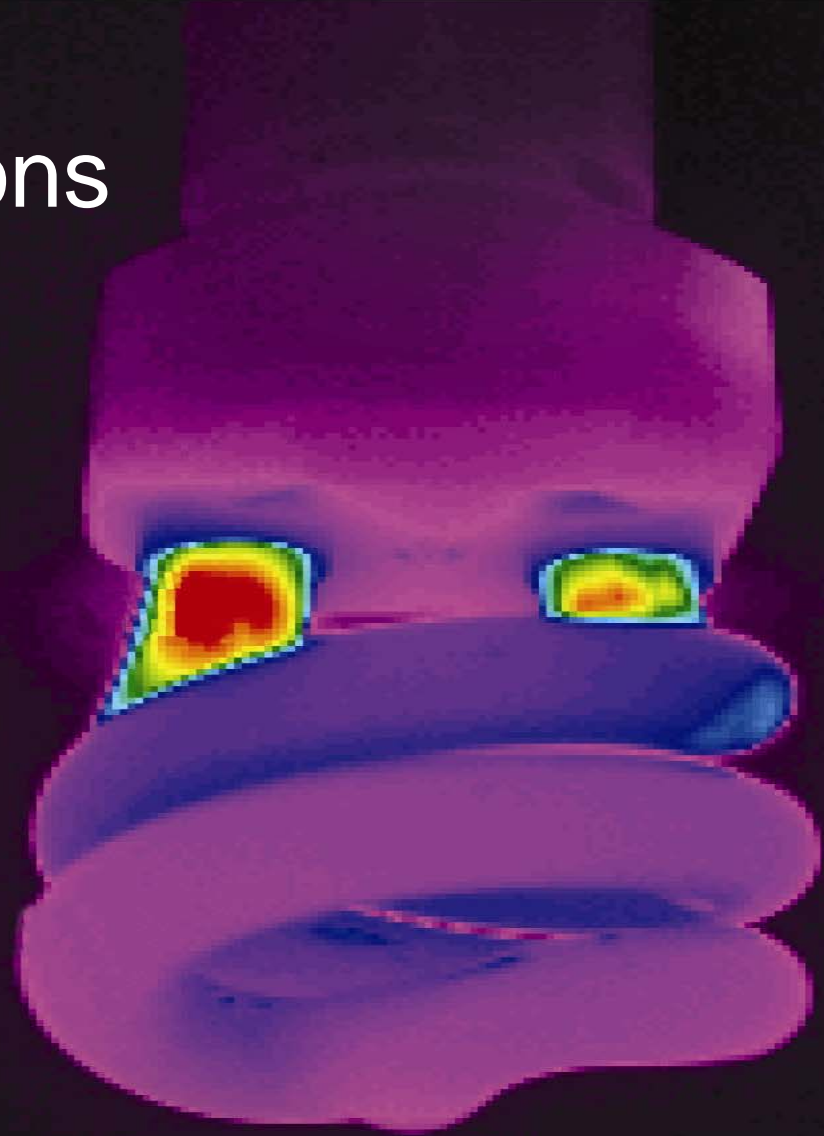
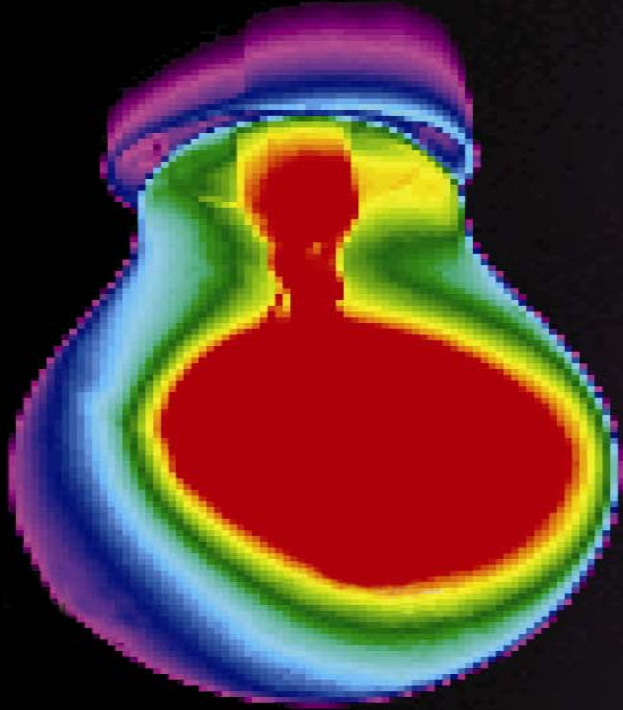
First conclusions

- There is no average India but a major divide between the emissions between the CO₂ 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

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Reasons and Solutions



Household Appliances

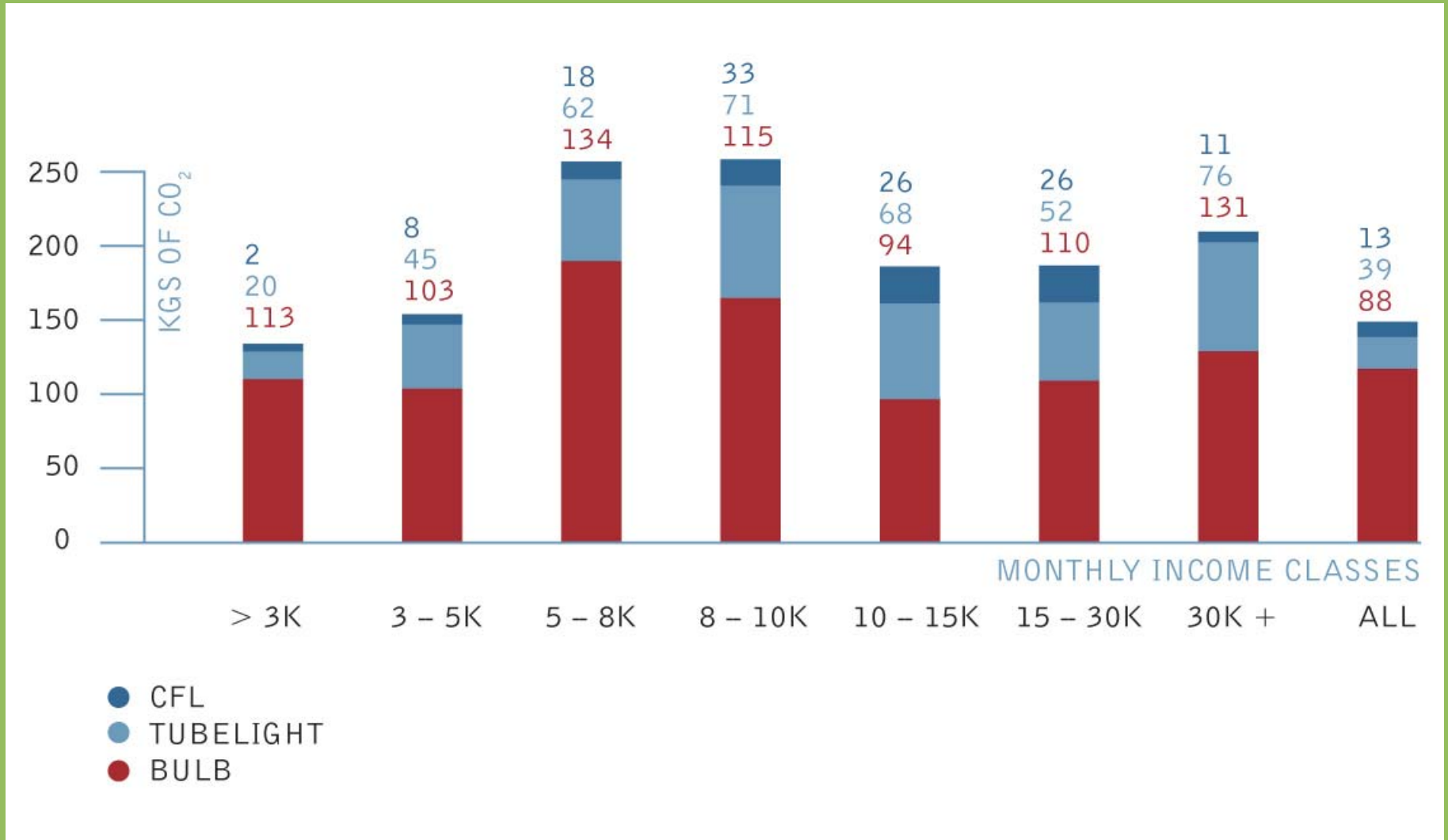
Appliances	<3000	>30,000	Factor
Cooking	97	120	1,2
Lighting	134	218	1,6
Fan	40	142	3,6
Electric Geyser	4	65	16,3
TV	16	44	2,8
Washing Machine	0	22	-
AC	0	65	-
Others	4	534	133,5
Total	198	1091	5,5

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

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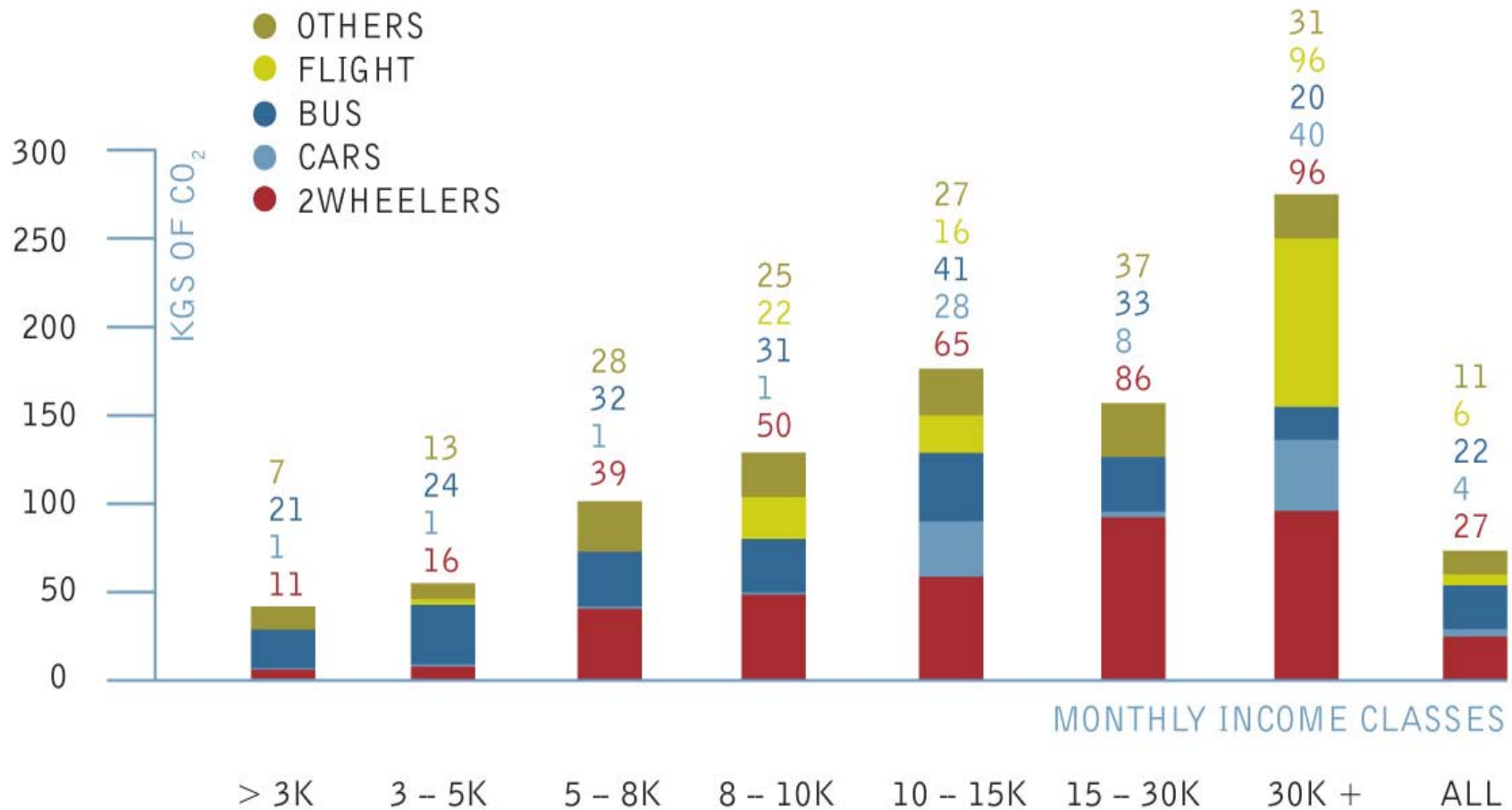
Lighting



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Transport



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Conclusions and solutions

- Consumerism is massively increasing emissions
- An efficiency revolution of household products can significantly decrease electricity use/ CO₂ 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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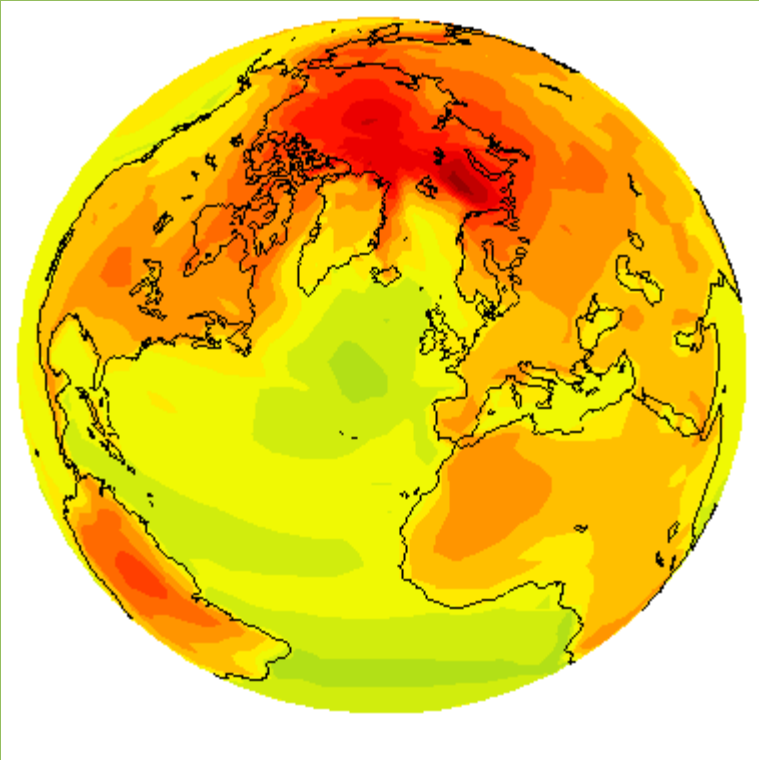
International Comparison



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Principles of Climate Justice

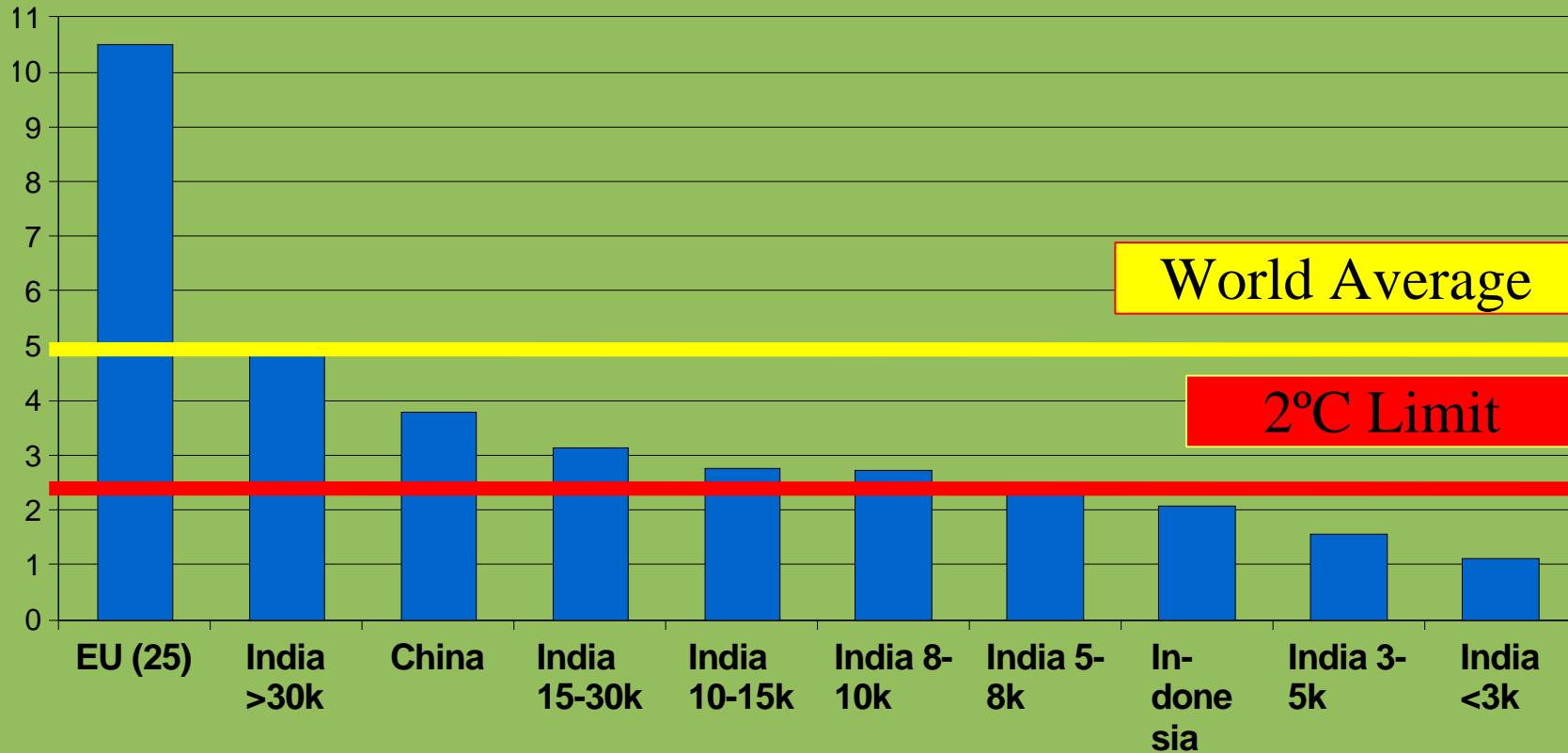


- Keep global temperature rise below 2°C to avoid major impacts
- Help the vulnerable poor to adapt to Climate change
- Create the carbon space for the poor to develop

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International Comparison of Per Capita CO₂ Emissions



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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 2°C, 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 CO₂ emissions over the 2°C limit.
- As outlined and the 11th 5year plan and indicated in the 12th Indian electricity production will increasingly rely on coal, thus increasing the CO₂ emissions per KWh.

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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 CO₂
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

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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

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Methodology in Detail

- **Methodology:**
- The study to assess CO2 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

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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

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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

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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

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