



29th May

2020

What **Lies** behind Climate-Change!

The need for a new paradigm for 'Green'

HOW'S IT GOING?

Kya seekha? Abhi tak? Kya observe kiya?
Kya experience kiya?

Today's flow...

Let's look at what we would like to address today

- Climate change – the cause and some hypotheses (done)
- The solutions that the “global” focus on, including
 - Our cities
 - Global Energy Flow
 - Resource Efficiency & Water “management”
- The solutions that we would like to create for ourselves
 - The GRIHA way





Our Cities

By chance, if you had forgotten where we lived...



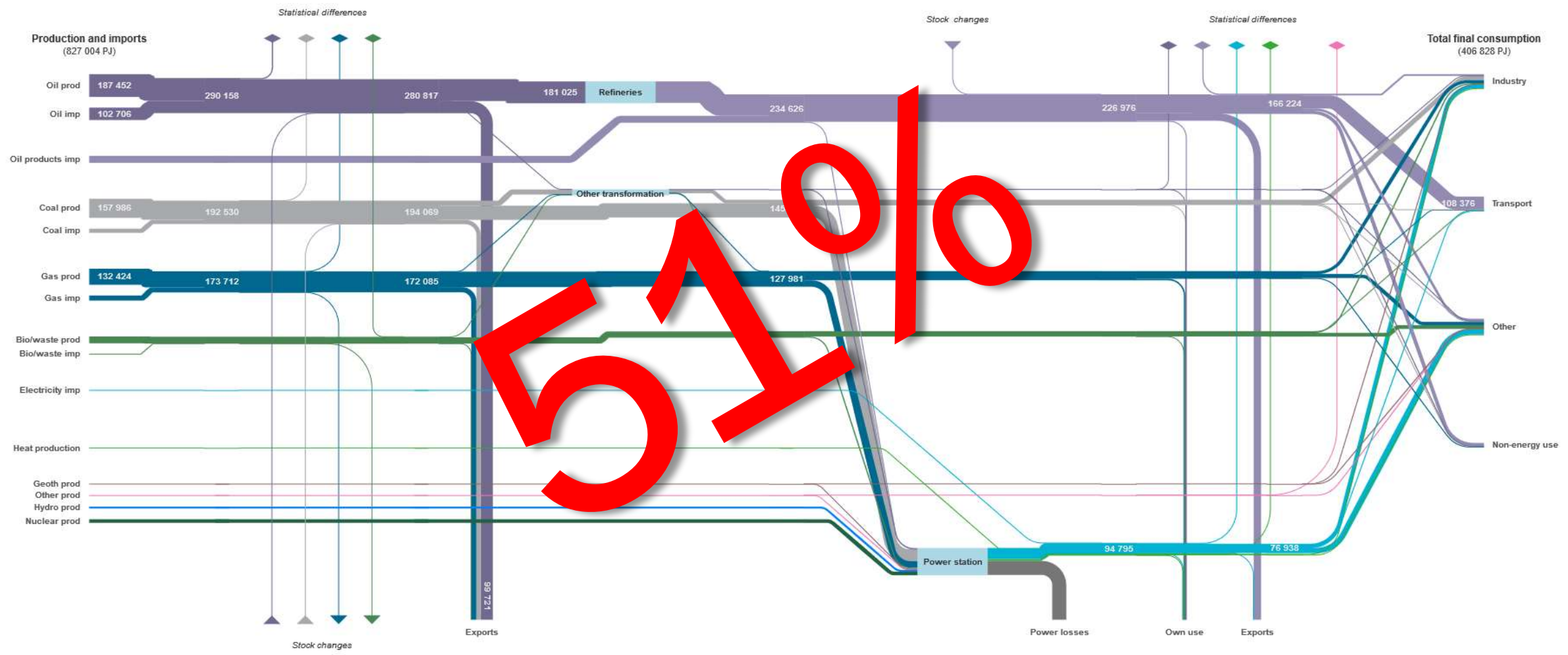


“Global”

And the “*dhakosla*” of “global” energy flows

World
BALANCE (2017)

Petajoules

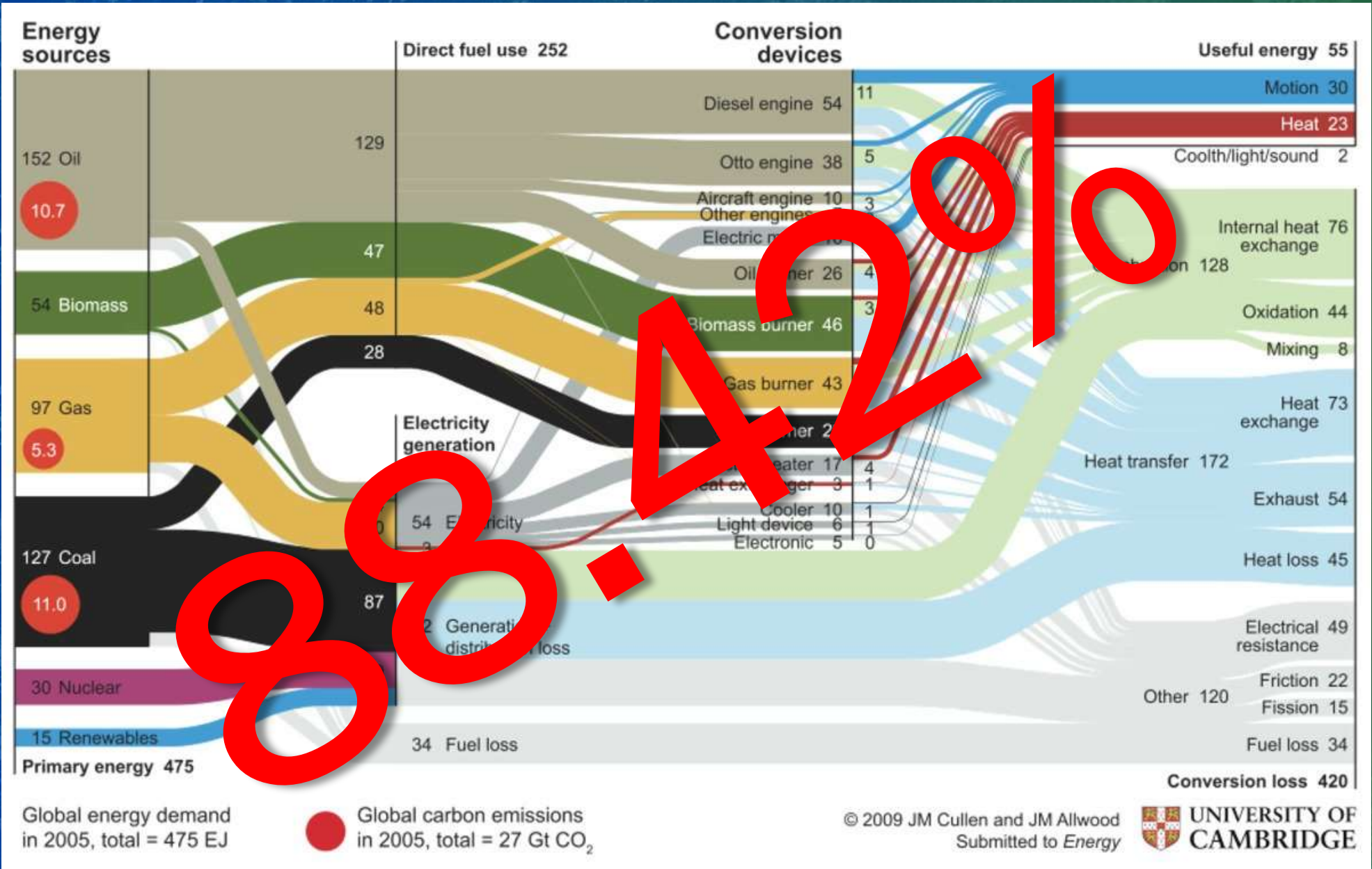


World
FINAL CONSUMPTION (2017)

Petajoules



14.3%

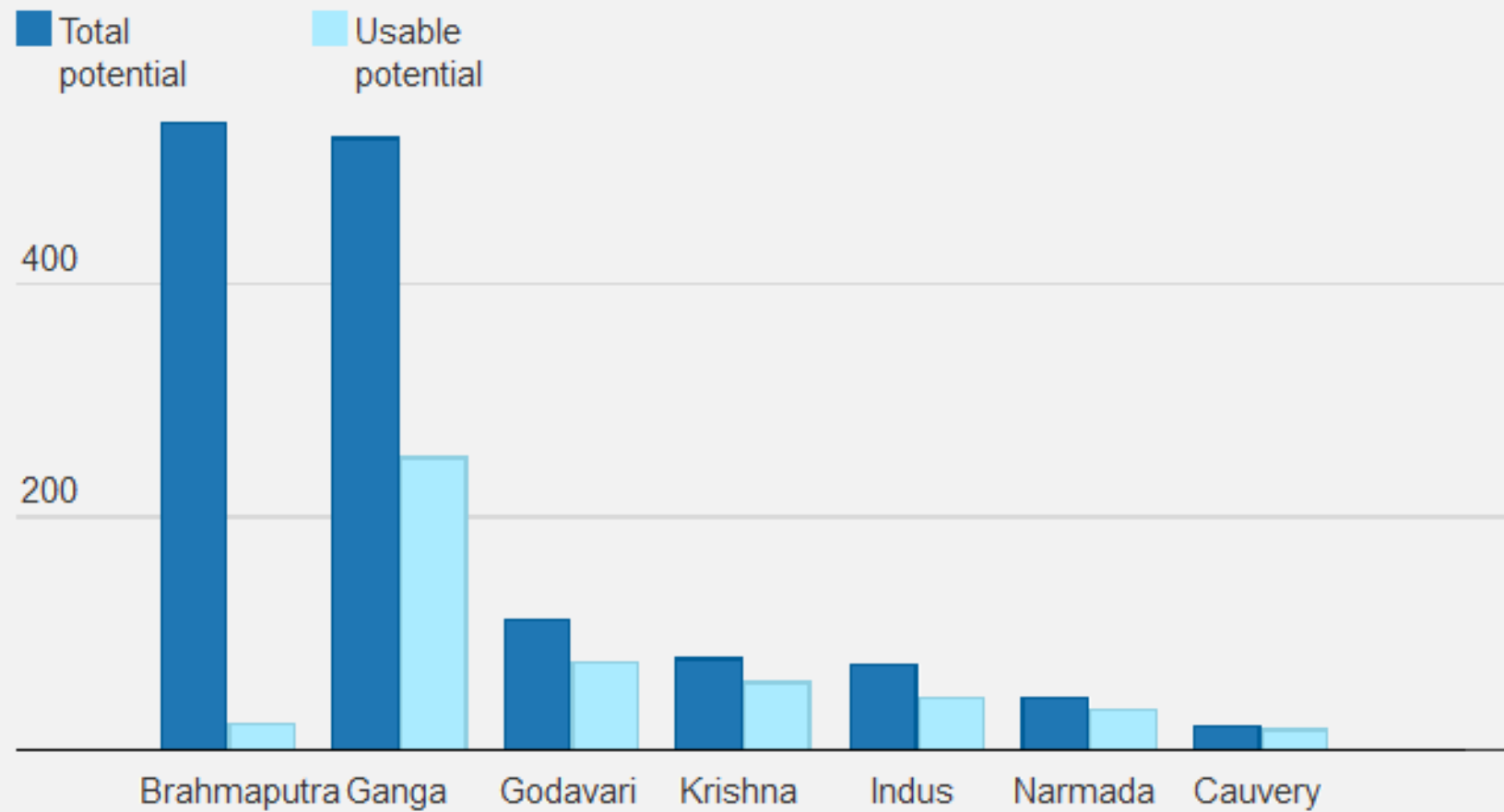




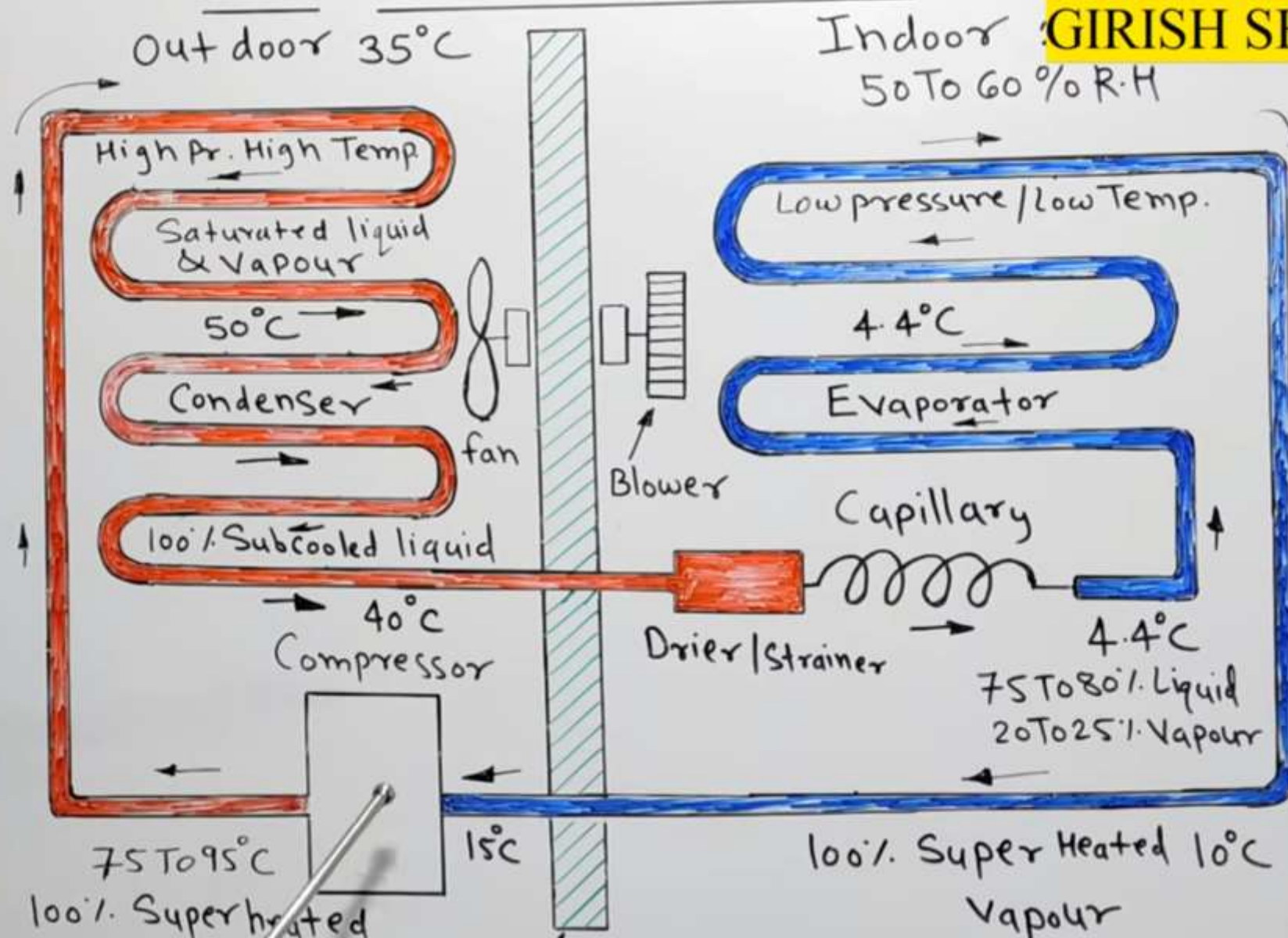
“Resources”

And the “*dhakosla*” of ‘Resource Efficiency’

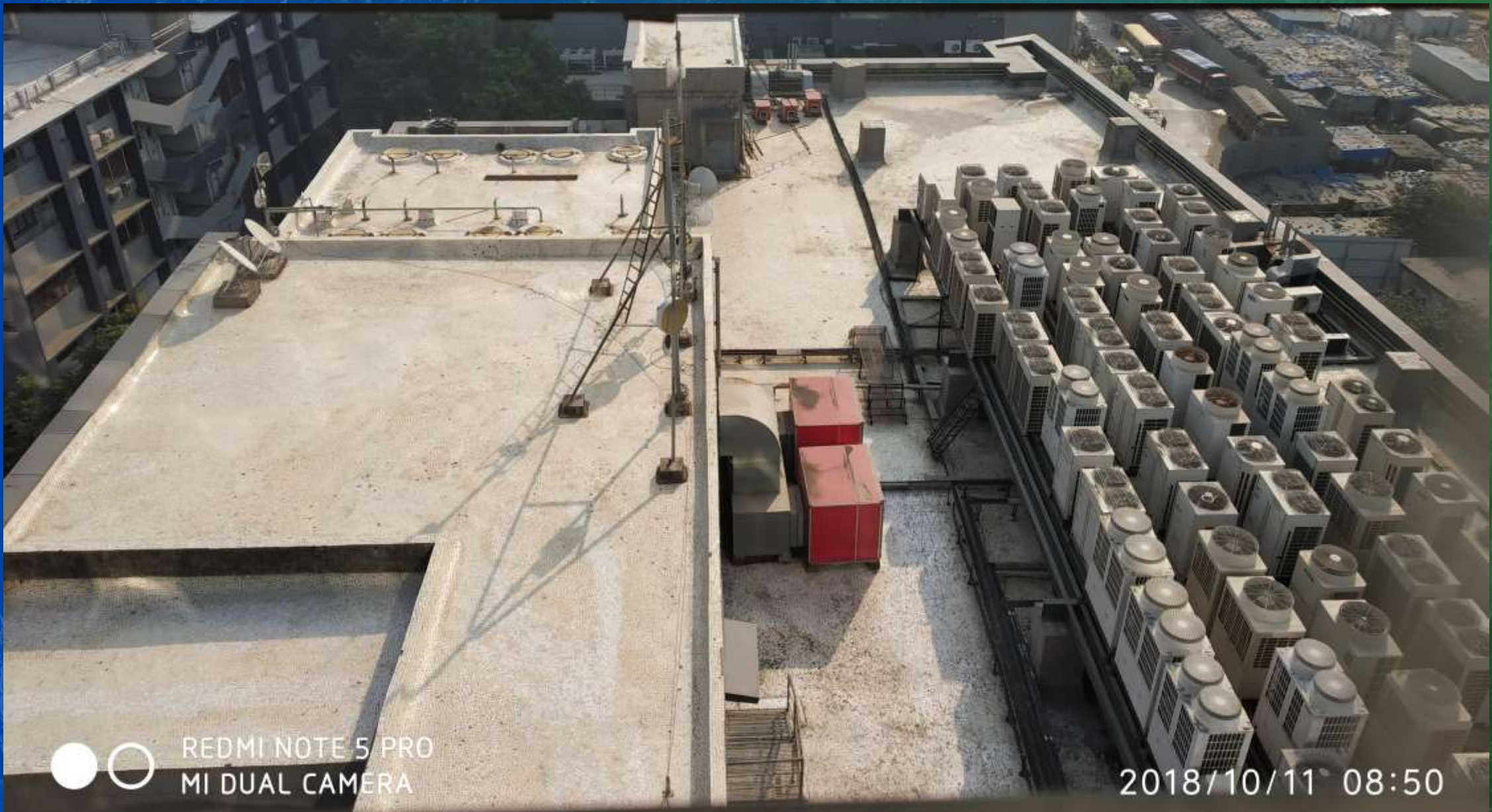
Only a little over one-third of total water potential of Indian rivers can be used. Unit is billion cubic metre. Data is for 2000.



Source: Central water commission [Get the data](#)



Sr No	Ref
1	R-
2	R-
3	R-
4	R-
5	R-
6	R-
7	R-
8	R-



REDMI NOTE 5 PRO
MI DUAL CAMERA

2018/10/11 08:50

IN ADDITION...

WE HAVE DEVELOPED OUR ENTIRE
BUILT-ENVIRONMENT IN A MANNER....

...THAT IT CONSUMES....AND ONLY CONSUMES...FROM THE
ENVIRONMENT

- Bricks
- Cement
- Steel
- Glass
- Water
- Chemicals
- Plastics
- Land
- Food



Scenario Analysis (BAU vs. ECBC compliant)

Scenario 1 – GWP of a BAU Envelope for 150 m² building (Brick wall, 40% WWR, RCC Slabs, and Aluminum Frame)

ITEM	Total Length	Total Breadth	Thickness	Height or Nos.	Volume	Density	Total Kg	GWP	Total GWP
	m	m	m	m	m ³	Kg/m ³ or Kg/m	Kg	kg CO ₂ eq.	kg CO ₂ eq.
1 Brick	30	19.08	0.23	12	83	1750	1,44,900	0.32	46,368
2 RCC	10	15	0.15	0.75	113	2288	2,57,400	0.084	21,622
3 Glass	12	7.632	0.006	4.8	3	2500	6,594	1.2	7,913
4 Aluminium	24	15.264	NA	4.8 NA		2.03	3570	26	92,809
5 Cement Plaster	30	19.08	0.012	12	7	1762	12,453	0.44	5,479
Total GWP for whole building Envelope									1,74,191

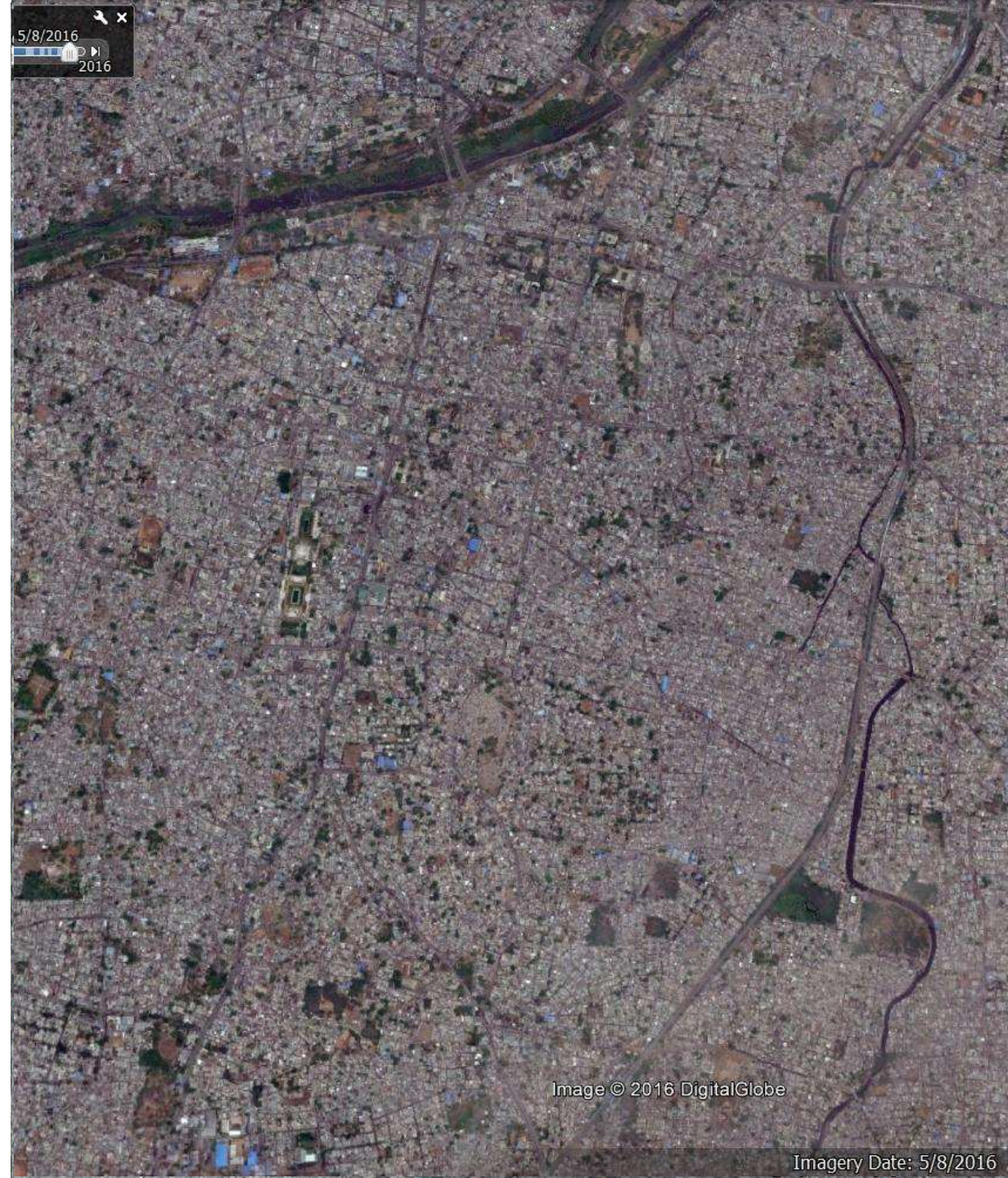
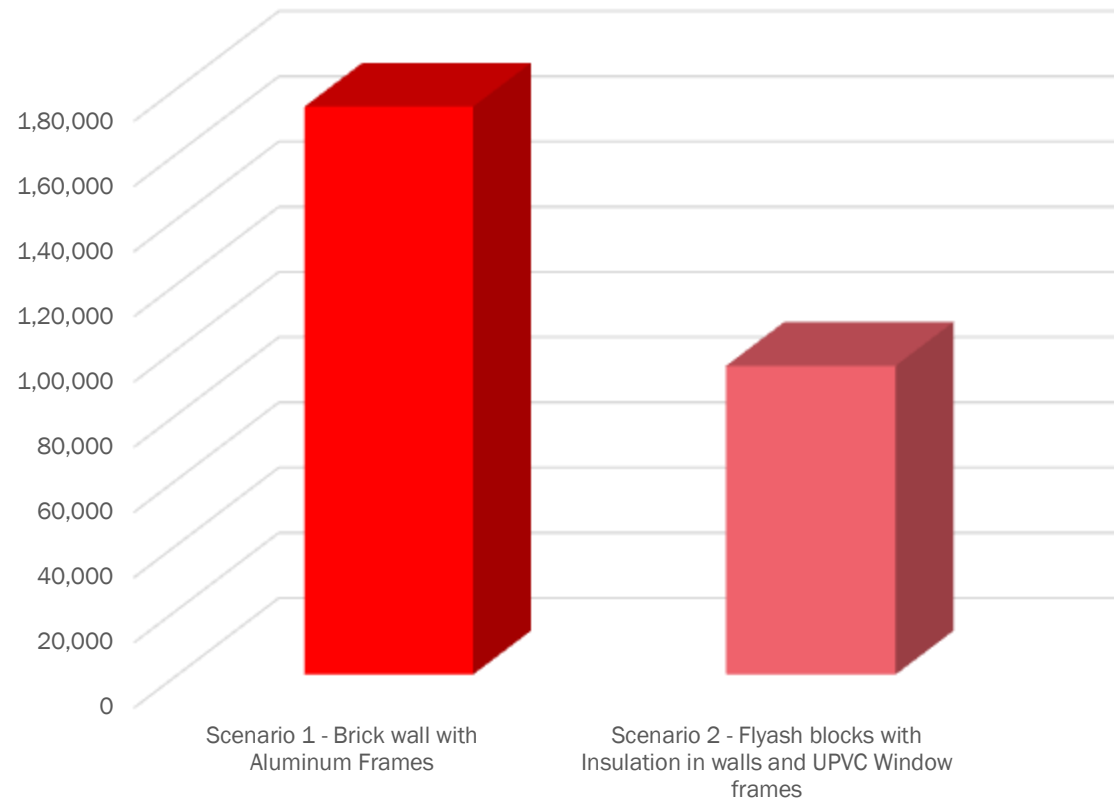
Scenario 2 – GWP of an ECBC Compliant Envelope (PFA blocks; Insulated walls; RCC Slab; uPVC frames)

ITEM	Total Length	Total Breadth	Thickness	Height or Nos.	Volume	Density	Total Kg	GWP	Total GWP
	m	m	m	m	m ³	Kg/m ³ or Kg/m	Kg	kg CO ₂ eq.	kg CO ₂ eq.
1 PFA Blocks	30	19.08	0.2	12	72	1500	1,08,000	0.29	31,320
Rigid Foam									
2 Insul.	30	19.08	0.05	12	18	20	360	12	4,320
3 RCC	10	15	0.15	0.75	112.5	2288	2,57,400	0.084	21,622
4 Glass	12	7.632	0.006	4.8	2.64	2500	6,594	1.2	7,913
5 uPVC Frame	24	15.264 NA		4.8 NA		2.8	4924	3.9	19,202
6 Cement Plaster	30	19.08	0.012	12	7	1762	12,453	0.83	10,336
Total GWP for whole building envelope									94,712



Graphical Comparison...WOW!

Comparative GWP in Kg CO₂ Eq.



Questions that YOU need to answer NOW...

- | | |
|--|-----------------------|
| 1. What is the CO ₂ absorption potential of a 'Large Canopy' tree? | 1. 22 kgs per year |
| 2. What is the radius of a 'Large Canopy' tree? | 2. 10 meters |
| 3. How much area does a 'Large Canopy' tree occupy? | 3. 314 m ² |
| 4. How many trees do we need to offset the CO ₂ released from a 150 m ² ECBC-compliant building? | 4. 4305 trees needed |
| 5. How many acres of trees does that translate to? | 5. 334.43 acres |



GRIHA is **NOT** a rating system...

- We often mistake it for a rating system
- It isn't
- It is a philosophy and a way-of-life
- One that can find its roots in this land and its people and their requirements.
- Question is....which people are you with and whose requirements are you catering to?



THANK YOU!

Ar. Gaurav Shorey

Email

gaurava@5waraj.in