

# GOALS

To reduce per capita electricity consumption by 50% by 2018 (vs. 2008)

To source 100% electricity from renewables (2018)

To become carbon neutral by 2018

## STEPS TO EFFICIENCY

1. Energy Metering – granular level, accurate data
2. Super efficient new buildings
3. Retrofits to improve old buildings and systems

# Granular Energy Metering

Hyderabad SDB-2 - Energy Summary - Building

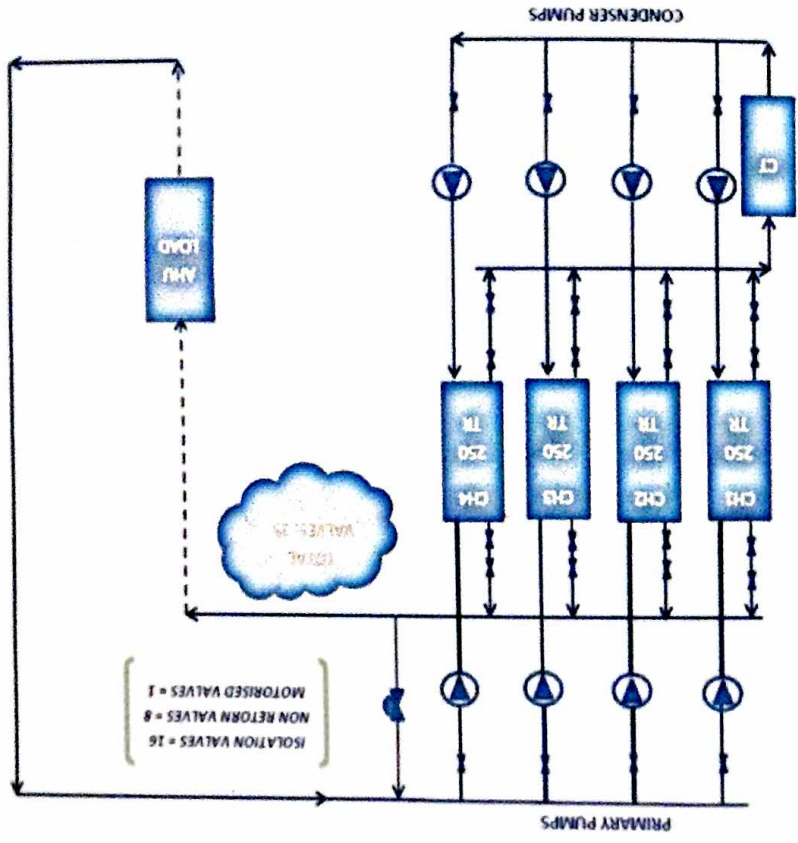
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Building Size	
SDB-2	275000 Sq.Ft
SDB-3	275000 Sq.Ft

Equipments	Actual KW	%	KWH Today	%	KWH Y Day	KWH MTD	MWH YTD	%
HVAC - Low Side	82.9	25	582	20	1208	28449	91.94	16
Lighting	28.5	9	361	12	899	19788	91.73	16
Ceiling Fans	11.7	3	65	2	157	3219	7.88	1
Raw Power	11.3	3	78	3	175	3860	14.39	2
UPS - Work Station	146.9	42	1359	46	2799	63968	280.40	49
UPS - Server	10.9	3	139	5	256	6789	29.35	5
Lifts Panel	21.6	6	96	4	243	4672	19.89	3
Utility Panel	10.7	3	89	4	171	4336	16.70	3
Miscellaneous	17.7	5	214	7	362	5573	24.87	4
<b>Total</b>	<b>334.6</b>	<b>100</b>	<b>2982</b>	<b>100</b>	<b>6270</b>	<b>140653</b>	<b>577.19</b>	<b>100</b>

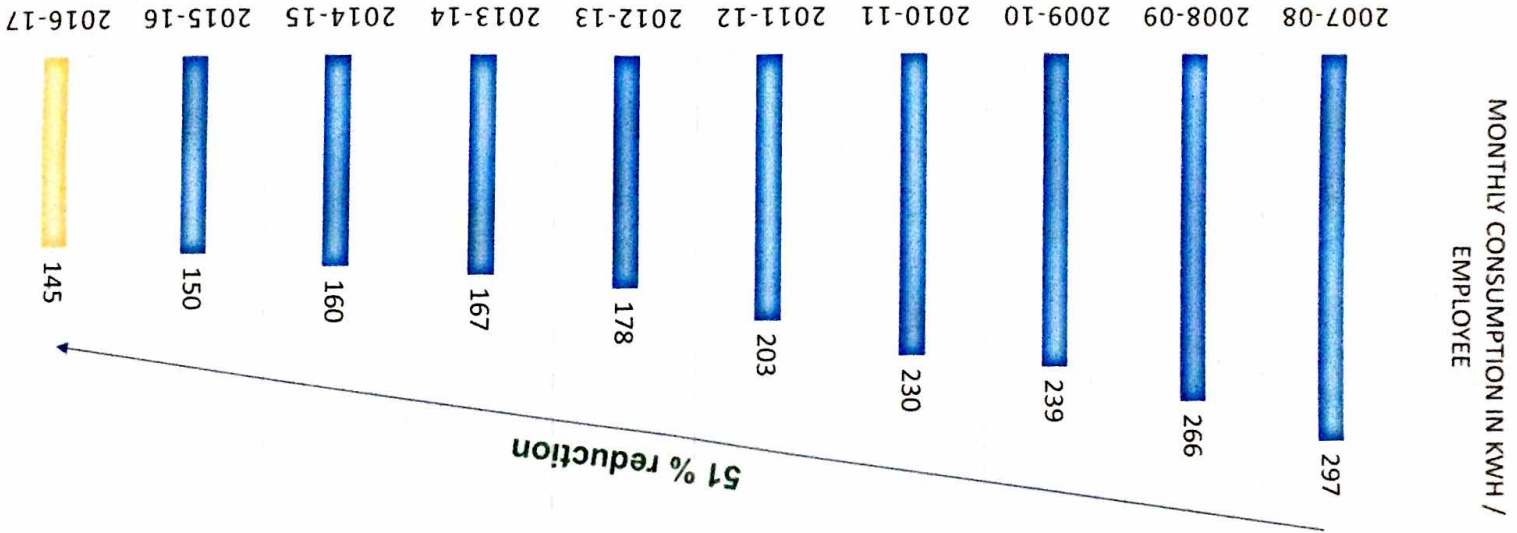
# Super efficient new buildings

Sl. No.	Case	Chiller capacity required (TR)	Annual energy consumption (kWh)	Maximum electrical load (kW)
1	Conventional building envelope	622	3,244,284	1,052
2	Efficient building envelope	530	3030908	968
3	Efficient lighting design	510	2713390	882
4	Efficient computers	486	2358776	778
5	Variable Air Volume system for AC	486	2080462	754
6	Heat Recovery Wheels for AC	400	2015430	662
7	Ultra high efficiency chiller	400	1992156	650
8	Efficient chilled water system design	400	1960898	640
9	High efficiency cooling tower	400	1946532	632
10	Lighting controls	400	1,775,706	600



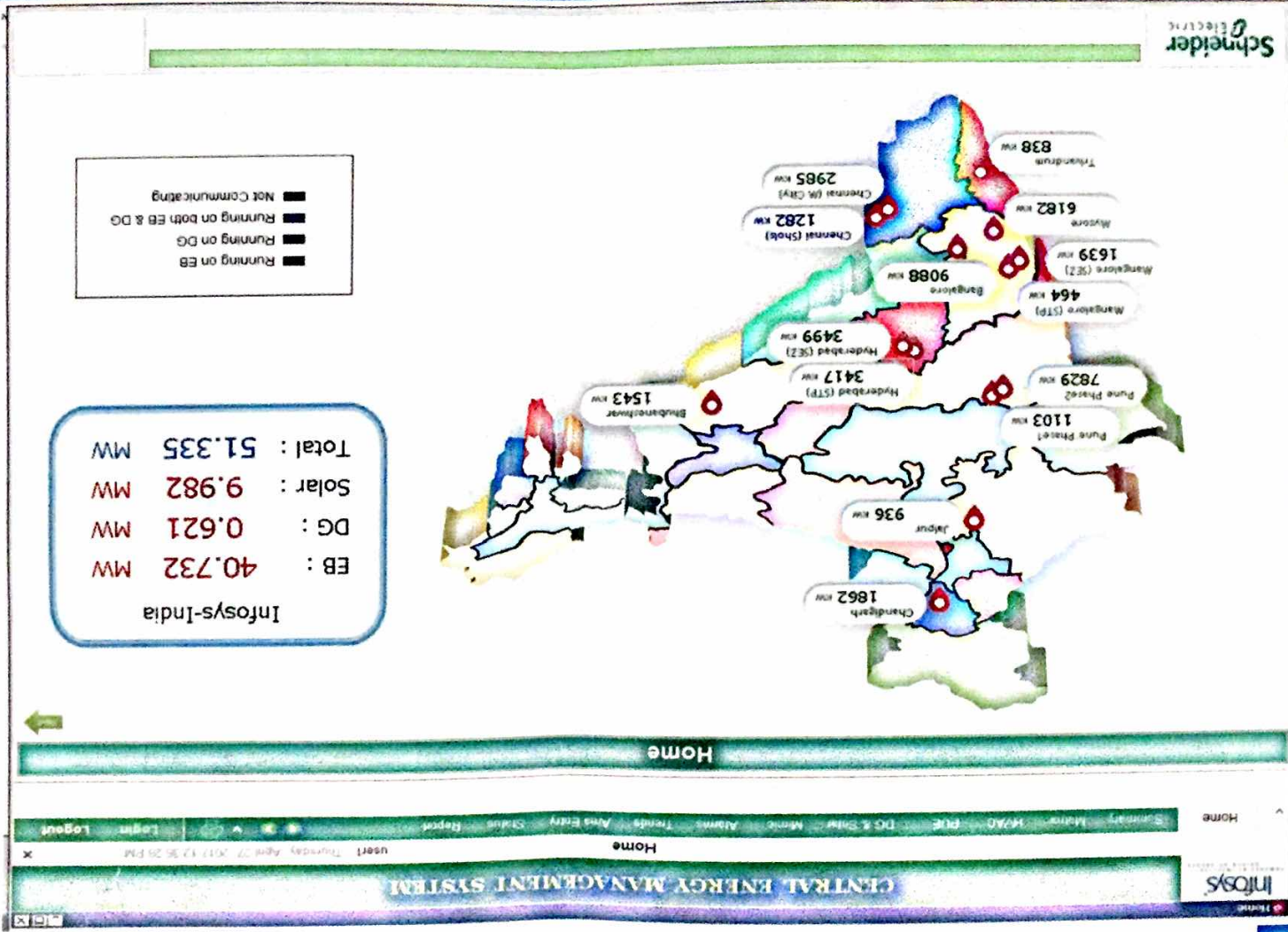
## Retrofits in old buildings

- Reduction in Energy 30%
- Reduction in equipment 45%
- Reduction in space 25%
- Payback 2 years



## Per capita reduction in energy

- 51% reduction in per capita energy consumption in 9 years



# Building Efficiency Metrics

	Performance metric	Infosys design 2007-08	Infosys new design	Improvement
1	Total building energy consumption (EPI*)	200 kWh/m <sup>2</sup> /year	75 kWh/m <sup>2</sup> /year	62%
2	Lighting design	1.2 W/sqft	0.48 W/sqft	60%
3	Air-conditioning design (Reduction in heat load)	350 sqft per TR	750 sqft per TR	53%
4	Total building electrical design	6.5 W/sqft	3.25 W/sqft	50%

\*EPI- Energy Performance Index



## Increase in efficiency without increase in first cost

Item	FY 08 (INR)	FY 17 (INR)	Cost escalation
RMC (Ready mix concrete) (cubic meter)	1425	4000	180%
Steel (per kg)	32.5	40	23%
Work Station (per w/s)	8500	13000	53%
Unskilled Labor (per day)	200	400	100%
Cost of Skilled Labor (per day)	350	650	86%
<b>Cost of completed building (per sq. ft)</b>	<b>2250</b>	<b>3500</b>	<b>55%</b>