Perform Achieve & Trade

Hotel

under PAT Sectors

Delhi

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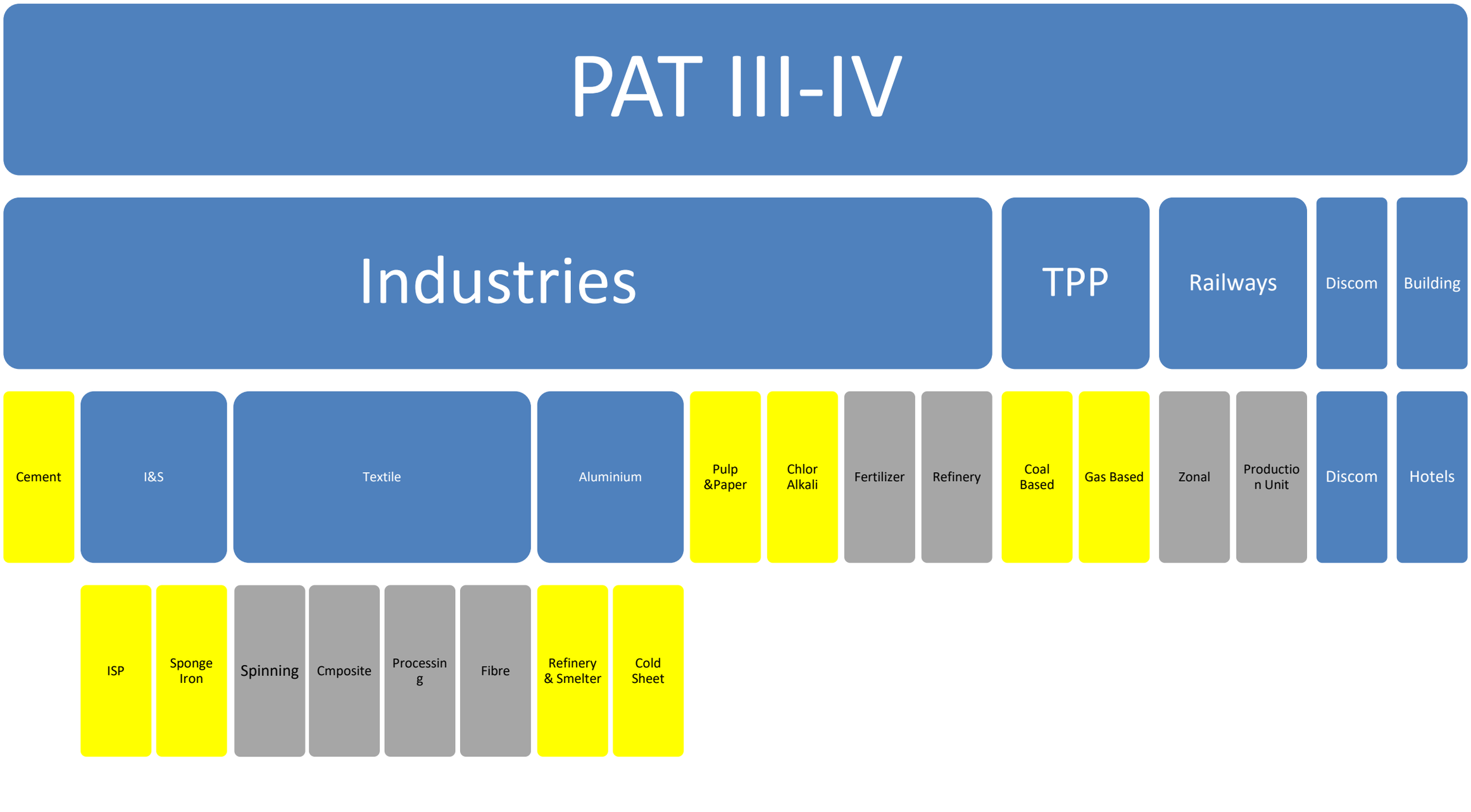
GIZ/BEE

Baseline Fixation and Target Setting Methodology

Pro-forma: Classification



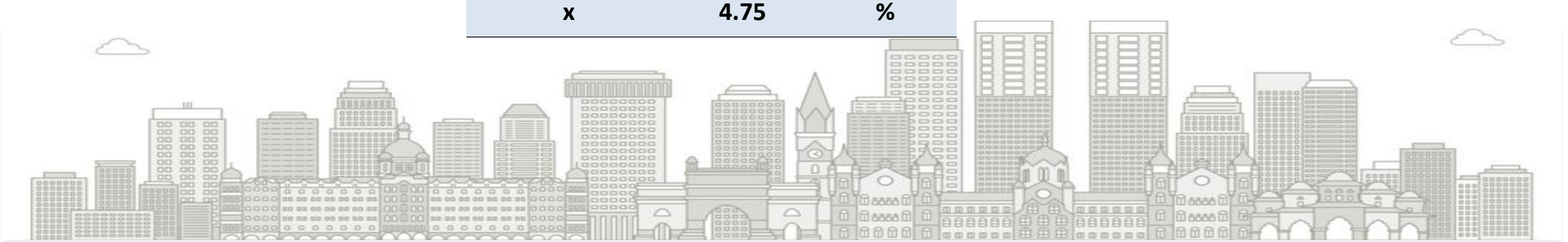
PAT Cycles Baseline Fixation

Sr No	Item	PAT Cycle I	PAT II & III	PAT Cycle IV
		478 DCs	**New DCs in Existing Sector**	**New DCs in New Sector**
1	Data Reporting	Five Years (2005-10)	Three Years	Three Years (2013-16)
2	Baseline Year	Average of three years (2007-10)	One year	One year (2015-16)
3	Pro-forma	Through Form I and Pro-forma	Through developed Form I and Pro-forma	New Pro-forma through Form I and Pro-forma
4	Data Verification	Baseline Energy Audit	Baseline Data Verification through pro-forma	Baseline Data Verification through pro-forma
5	Data Fixation	Baseline Energy Audit In Assessment year	Baseline data Verification Report	Baseline data Verification Report

PAT Cycle Target Fixation

Plant	Baseline Floor Area	Baseline Average SEC	Relative SEC	Total Energy Consumption	%Target	Savings	To be Energy Saving
	m2	**toe/'000 m2**		**toe**			
Hotel 1	70000	15.22	1.00	1065.5	x	10.65	10.65x
Hotel 2	82976	17.22	1.13	1428.7	1.13x	16.16	16.16x
Hotel 3	77911	18.85	1.24	1468.7	1.24x	18.19	18.19x
Hotel 4	61727	21.50	1.41	1327.1	1.41x	18.74	18.74x
Hotel 5	81319	21.52	1.41	1749.8	1.41x	24.73	24.73x
				7039.8		**88.5**	**88.5x**

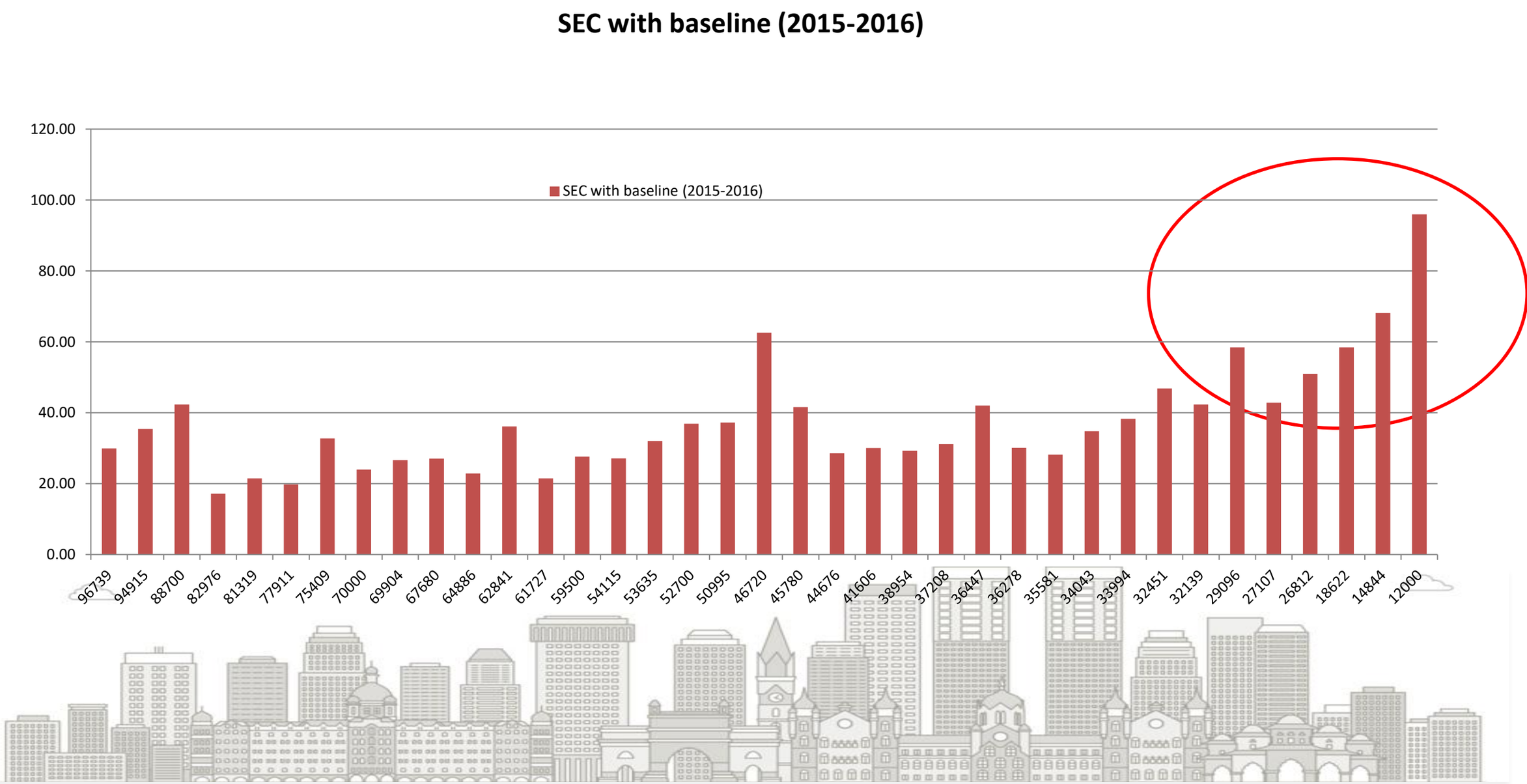
Total Saving	**88.5x**	**toe**
Target Saving	**420.8**	**toe**
x	**4.75**	**%**



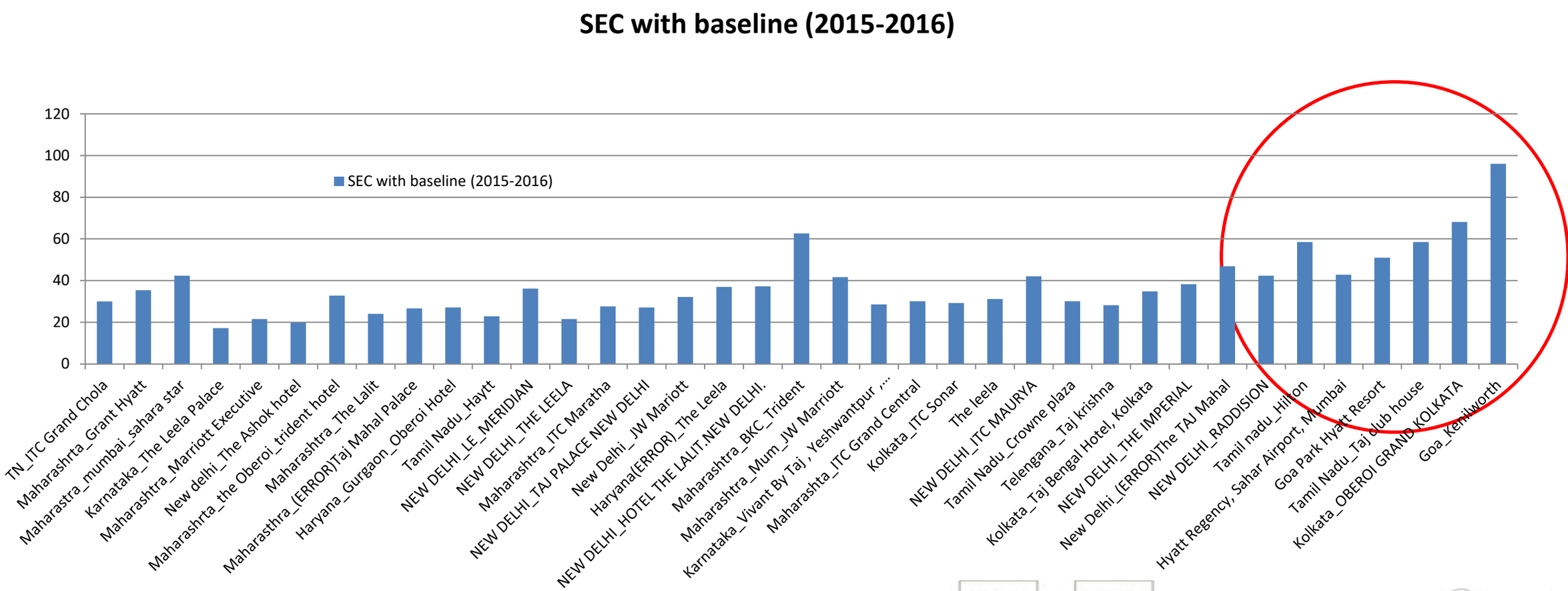
PAT Cycle Target Fixation

Plant	Baseline Average SEC	Target %	To be SEC	To be toe
	toe/'000 m2		**toe/'000 m2**	**toe**
Plant 1	15.22	4.75%	14.50	1014.92
Plant 2	17.22	5.37%	16.29	1351.97
Plant 3	18.85	5.88%	17.74	1382.29
Plant 4	21.50	6.71%	20.06	1238.04
Plant 5	21.52	6.71%	20.07	1632.32
Total energy consumption at the end of three years				**6619**
Total energy consumption in baseline year				**7039.8**
Energy saving during the period				**420.8**

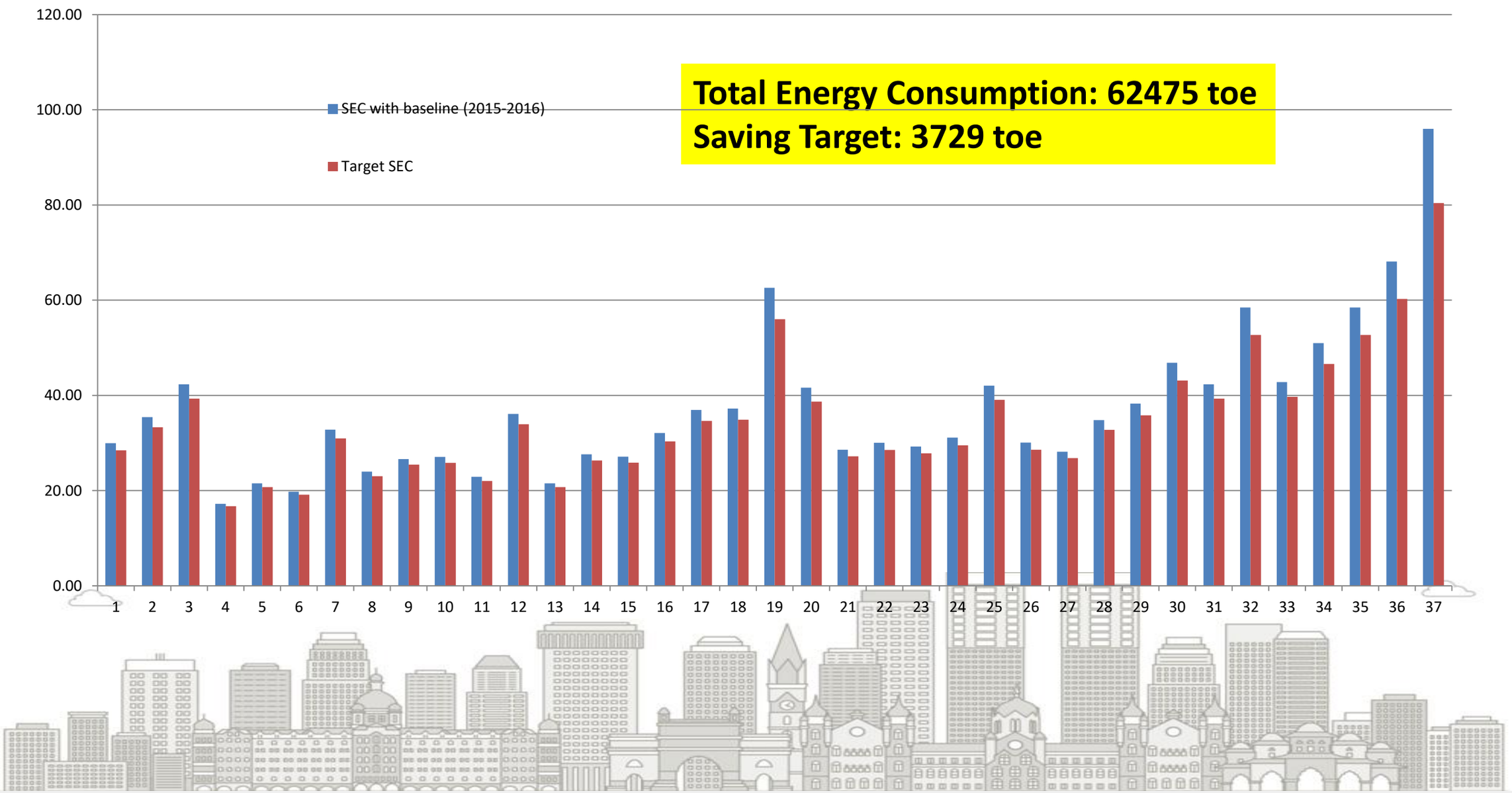
PAT Cycle IV Target Setting Process-Area Vs SEC



PAT Cycle IV Target Setting Process-Climate Vs SEC



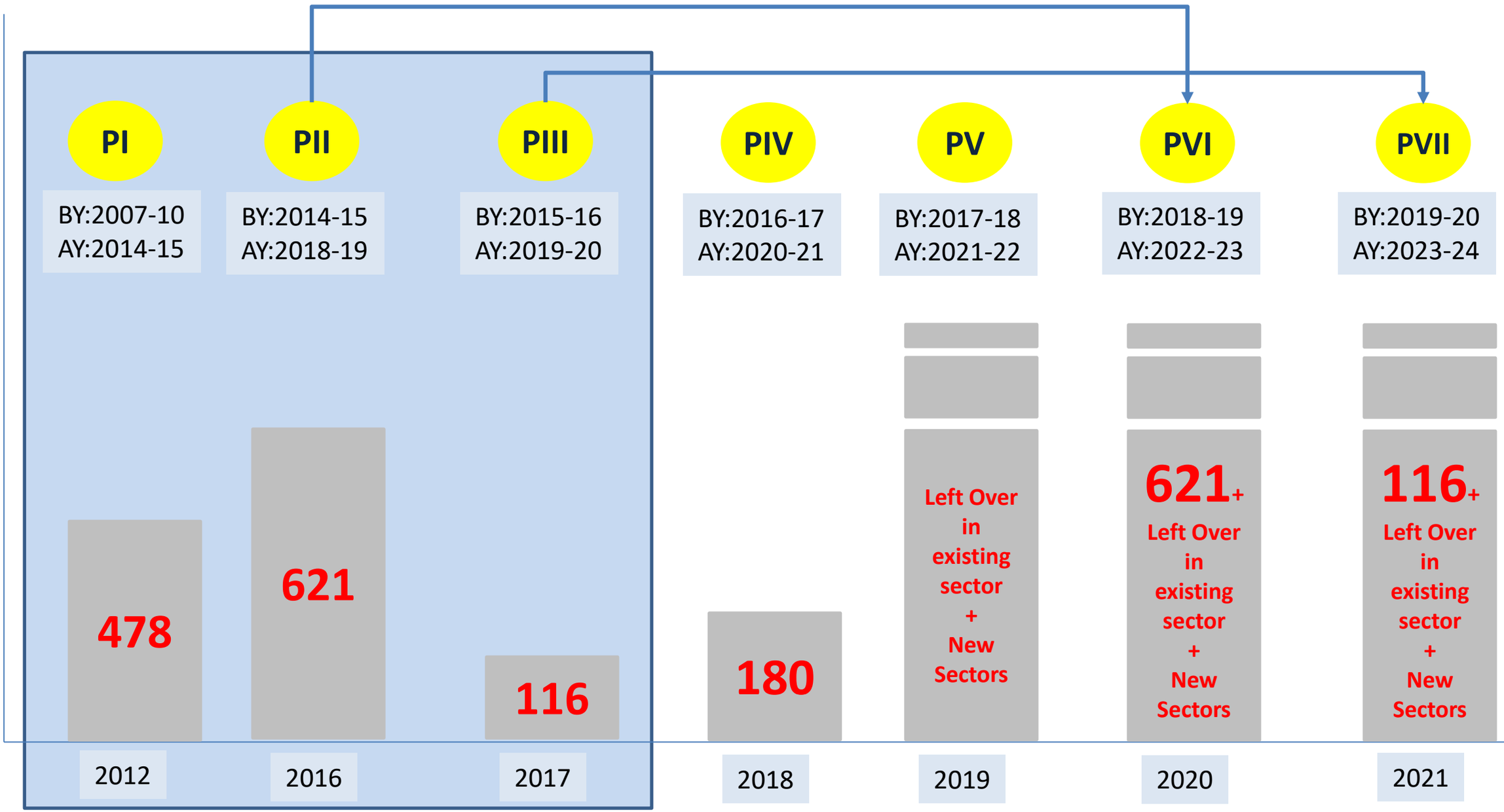
PAT Cycle IV Target Fixation-Hotels



Total Energy Consumption: 62475 toe

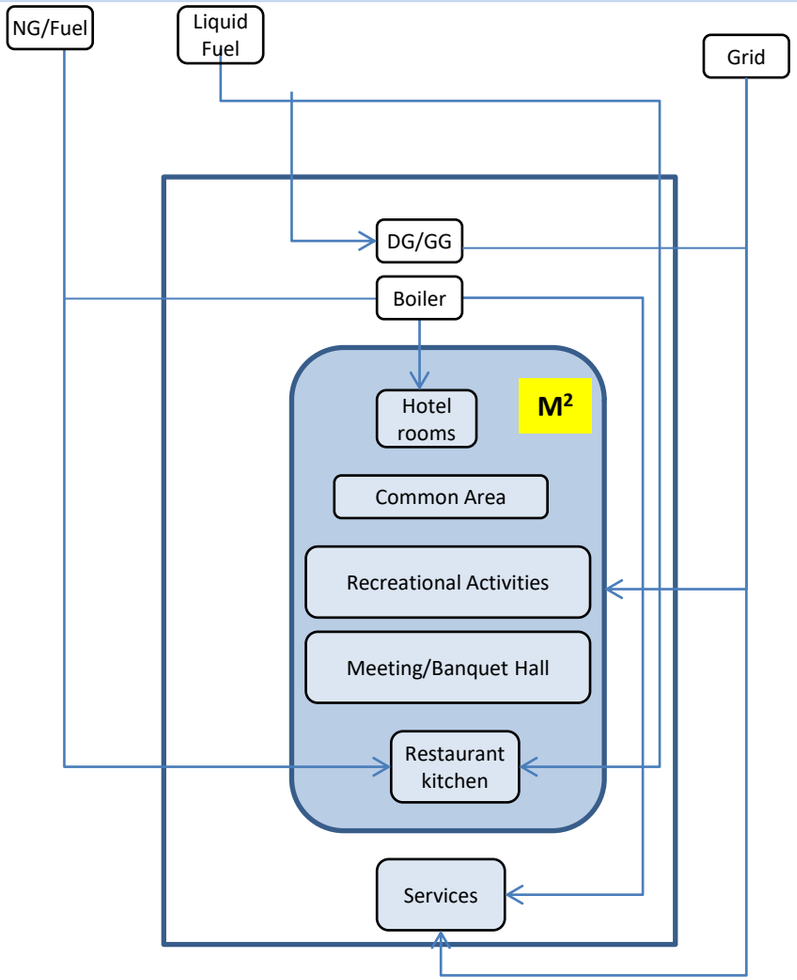
Saving Target: 3729 toe

PAT III and Beyond (Rolling Cycle)



Normalisation

Gate to Gate Boundary



- Area: Net Built-up Area in '000 m2
- Input Net Energy: Fuel and Power in tonnes of oil equivalent

Specific Energy Consumption (SEC) is the division of Input Net Energy by Thousand square meter

$$SEC = \frac{Net\ Input\ Energy\ in\ toe}{Net\ Built\ up\ Area\ excluding\ Basement\ Parking\ Area\ in\ ('000\ m2)}$$

toe/'000 m2

Normalization Factors- Broad Categorization in all sectors

- **Capacity Utilization**
  - **Availability of Fuel/Raw Material** (Effect on Capacity Utilisation)
  - **Natural Calamity/Rioting/Social Unrest/Labor Strike/Lockouts** (Effect on Capacity Utilisation)
  - **Start/Stop**
- **Product Mix & Intermediary Product** (Import/Export)
- **Fuel Mix (Pet Coke Utilization in Kiln)**
- **Power Mix** (Imported & Exported from/ to the grid and self-generation from the captive power plant)
- **Fuel Quality in CPP**
- **Low PLF in CPP**
- **Raw Material Quality**

- **Environmental Concern** (Additional Environmental Equipment requirement due to major change in government policy on Environment)
- **Biomass/Alternate Fuel Unavailability**
- **Construction Phase or Project Activities**
- **Addition of New Line/Unit** (In Process & Power Generation)
- **Unforeseen Circumstances**
- **Renewable Energy**

External Factors for Normalisation

- **Grid Failure/Breakdown** (Grid not Sync with CPP)
- **Natural Disaster** (Flood, Earthquake etc)
- **Major change in Government policy** (Hampering plant's process system)
- **Unforeseen Circumstances** (Labour Strike/Lockouts/Social Unrest/Riots)

Monitoring and Verification

- A reliable monitoring, reporting and verification (M&V) system forms the backbone of assessment process of the PAT scheme
- The objective of the M&V system is to streamline the activities to be carried out for verifying the energy performance achieved by the Designated Consumer in the target year.
- The Assessment of performance verification involves an independent evaluation of each activity undertaken by the DCs for compliance under PAT rules
- Verification plays a crucial role in maintaining the integrity of the scheme and ensuring transparent validation.

Monitoring

- Quarterly, Yearly and End of Cycle Data Monitoring by DCs
- Energy Efficiency Project Monitoring
- Internal Energy Audit Reports

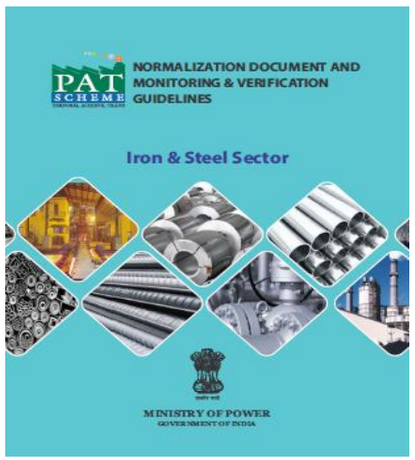
Reporting

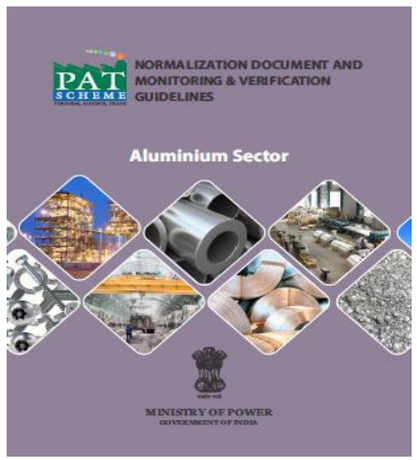
- Reporting the Annual data yearly from Baseline year to assessment year through different Forms
- Through Sector Specific Pro-forma & Form I
- Form A, Form B

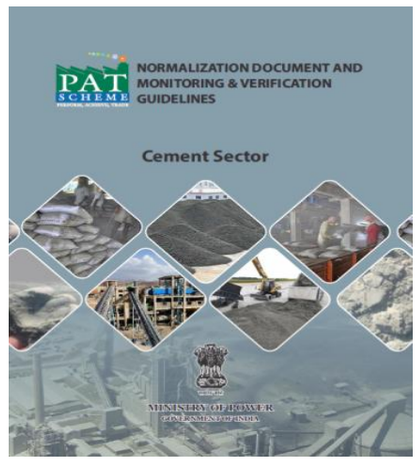
Verification

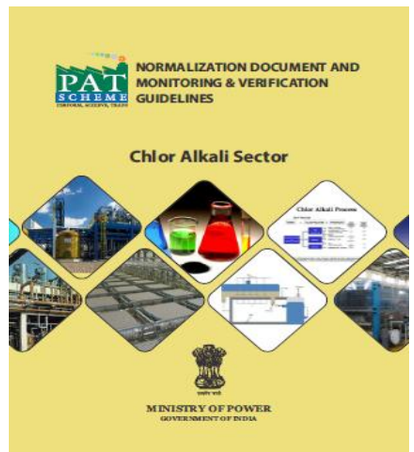
- The verification process will ensure that the information and data in Form 1 and Pro-forma are free from material omissions, misrepresentations and errors
- The verification must be completed between 1st April to 30th June of the year, following the assessment year

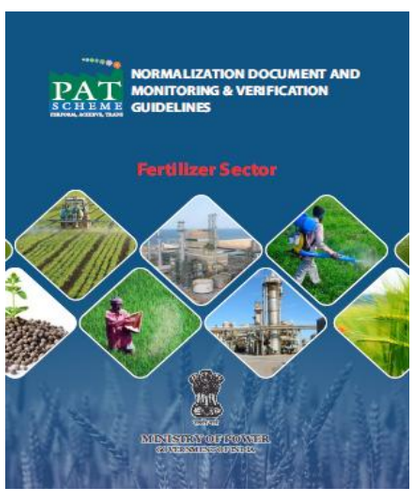
Normalization Documents and M&V guidelines

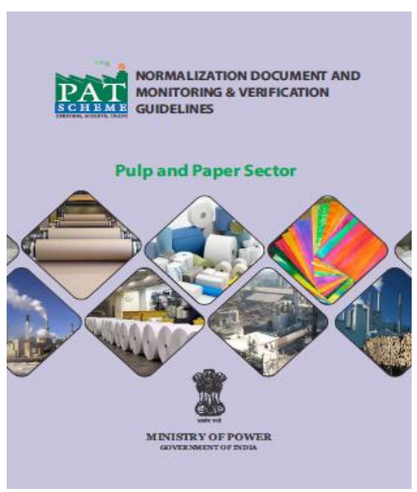


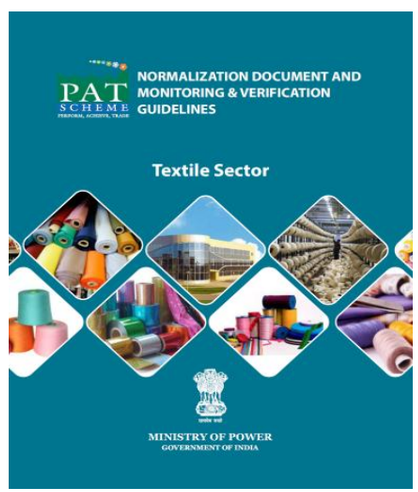


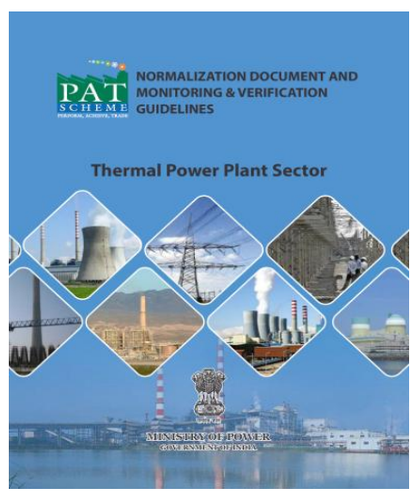












https://beeindia.gov.in/content/pat-3

Normalization Factors- Broad Categorization (Hotels)

- **Occupancy Level**
  - **Room occupancy**
  - **Meeting halls Capacity Utilisation**
  - **Marriage Halls occupancy**
  - **Recreational Activities occupancy** (Gym, Spa, Swimming Pool, Indoor Games etc)
- **Laundry Steam Normalisation**
- **Kitchen Fuel Normalisation**
- **Power Mix** (Imported & Exported from/ to the grid and self-generation from the captive power plant)

- **Environmental Concern** (Additional Environmental Equipment requirement due to major change in government policy on Environment)
- **Construction Phase or Project Activities**
- **Addition of Area**
- **Unforeseen Circumstances**
- **Renewable Energy**
- **ETP Installation**

Normalization Factors- Broad Categorization (Hotel)

Sr No	Normalisation	Calculation	How
1	Room Occupancy	Deduct Energy consumption in assessment year w.r.t. Baseline year	Energy consumption in Rooms (BY) x Occupancy Level (AY) /Occupancy Level (BY)
2	Meeting Halls Capacity Utilisation		
3	Marriage Halls Occupancy		
4	Recreational Activities Occupancy		
5	Laundry Steam Normalisation		
6	Kitchen Fuel Normalisation		
7	Power Mix Normalisation		

Thank You