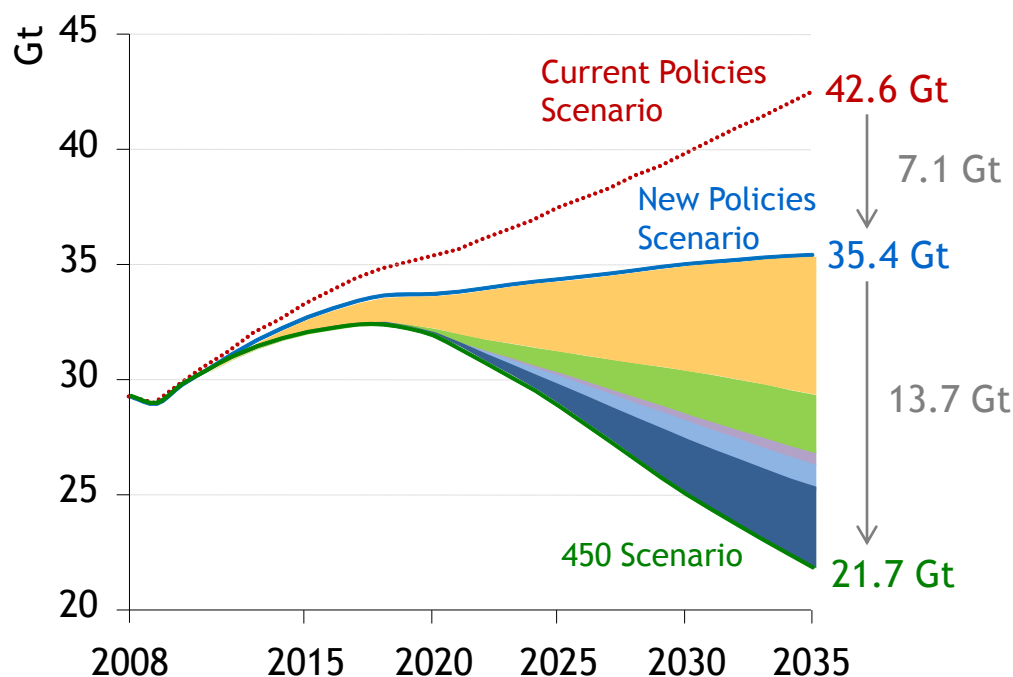


MARKET BASED MECHANISM

Perform, Achieve and Trade
India

World CO₂ Emission Savings



Share of cumulative abatement between 2010-2035

Efficiency	50%
Renewables	18%
Biofuels	4%
Nuclear	9%
CCS	20%

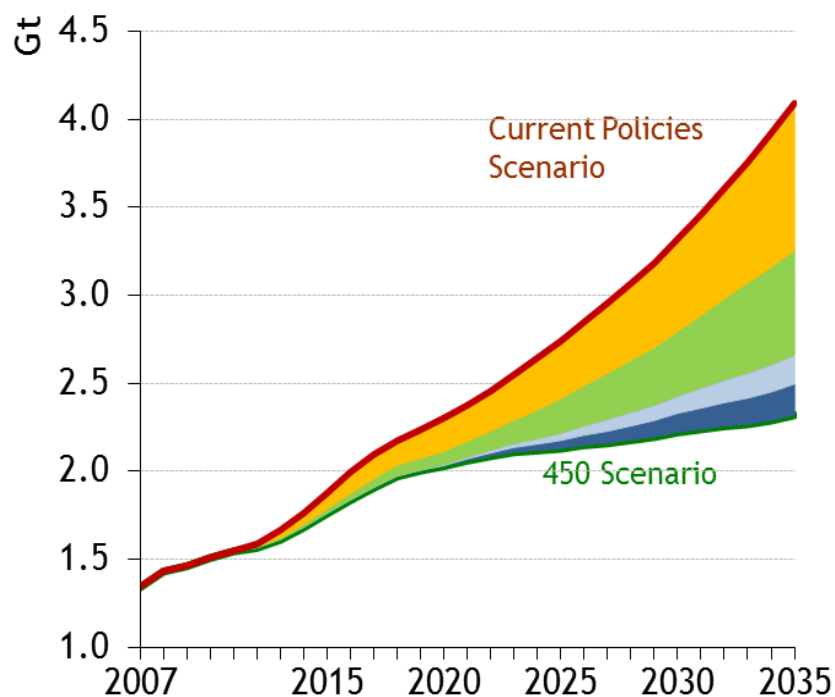
Source: WEO 2010

New Policies Scenario is the central scenario in WEO-2010

- > assumes cautious implementation of recently announced commitments & plans, even if yet to be formally adopted

The 450 Scenario sets out an energy pathway consistent with the goal of limiting increase in average temperature to 2°C

India – CO₂ Emission Reduction



4.1Gt

1.8 Gt

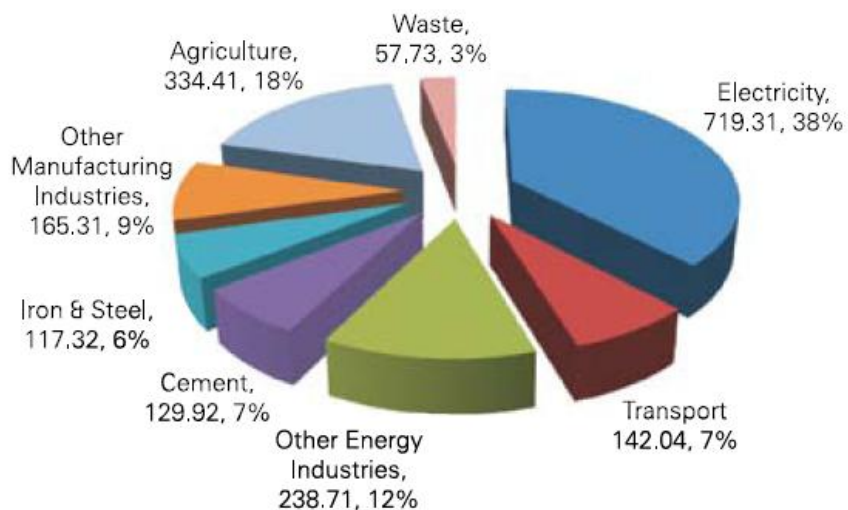
2.3 Gt

Share of cumulative abatement
between 2010-2035

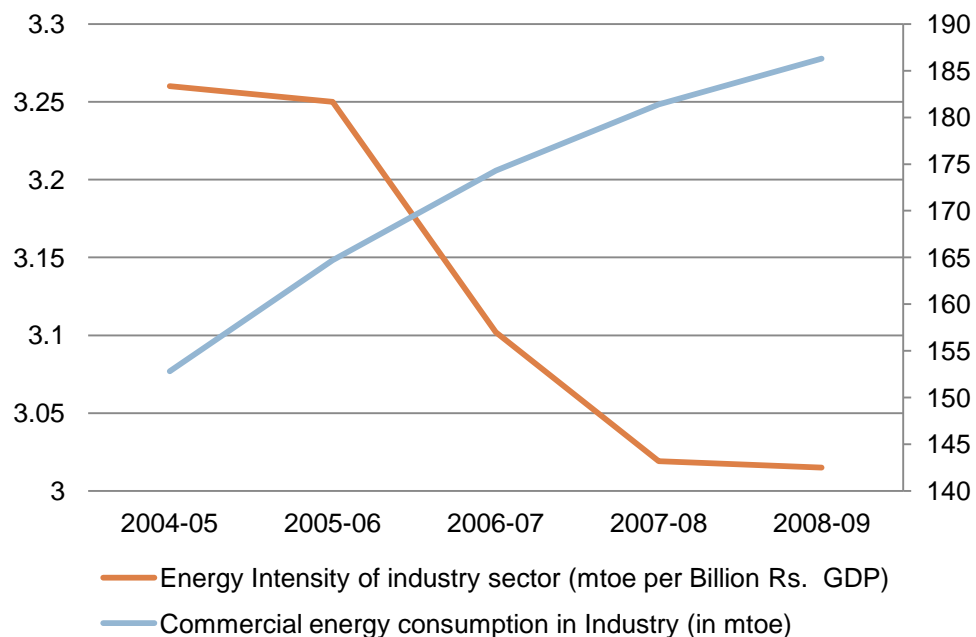
Efficiency	51%
Renewables	32%
Biofuels	1%
Nuclear	8%
CCS	8%

Energy Profile - India

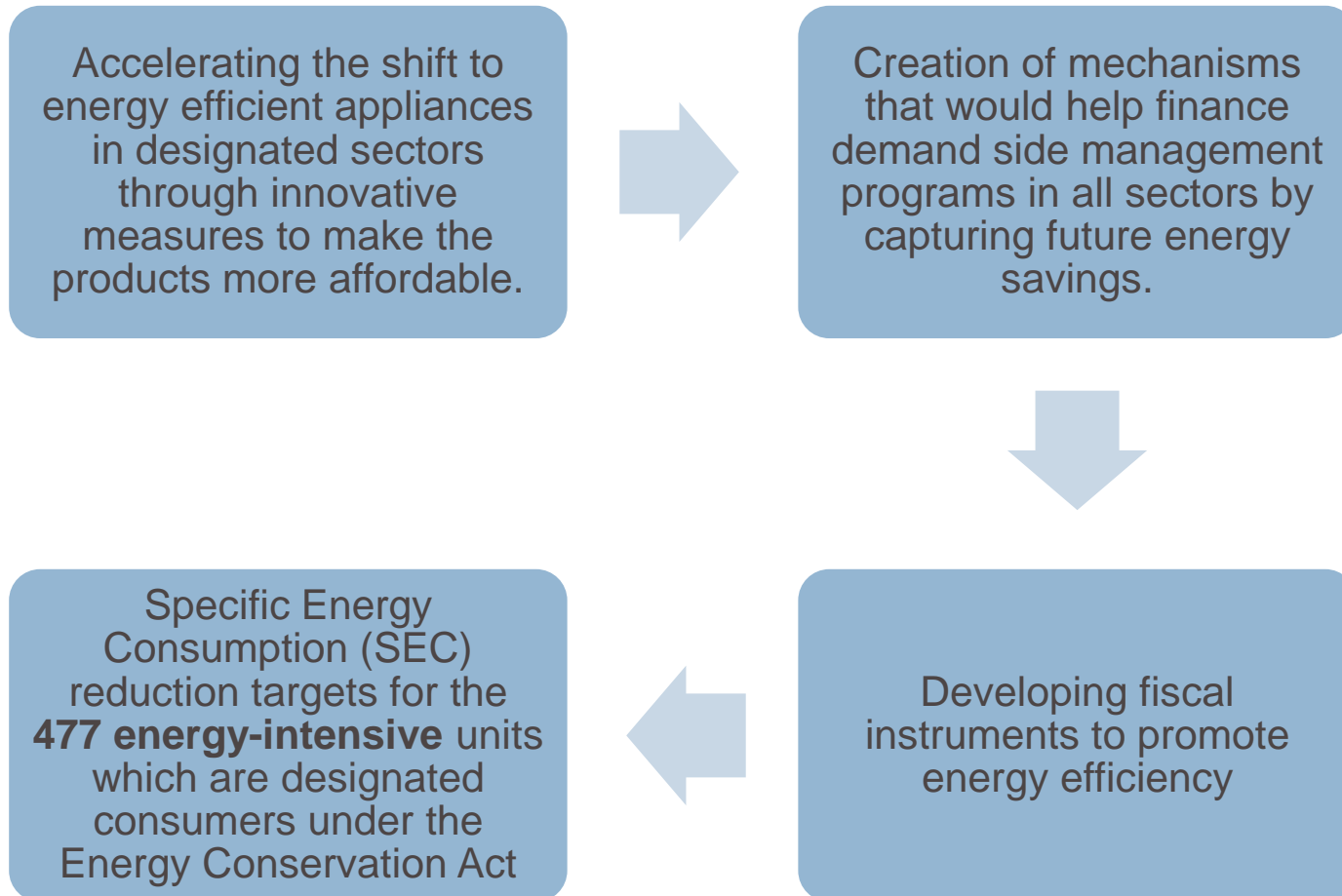
GHG Emissions Across Sectors



Energy Intensity - Industrial Sector

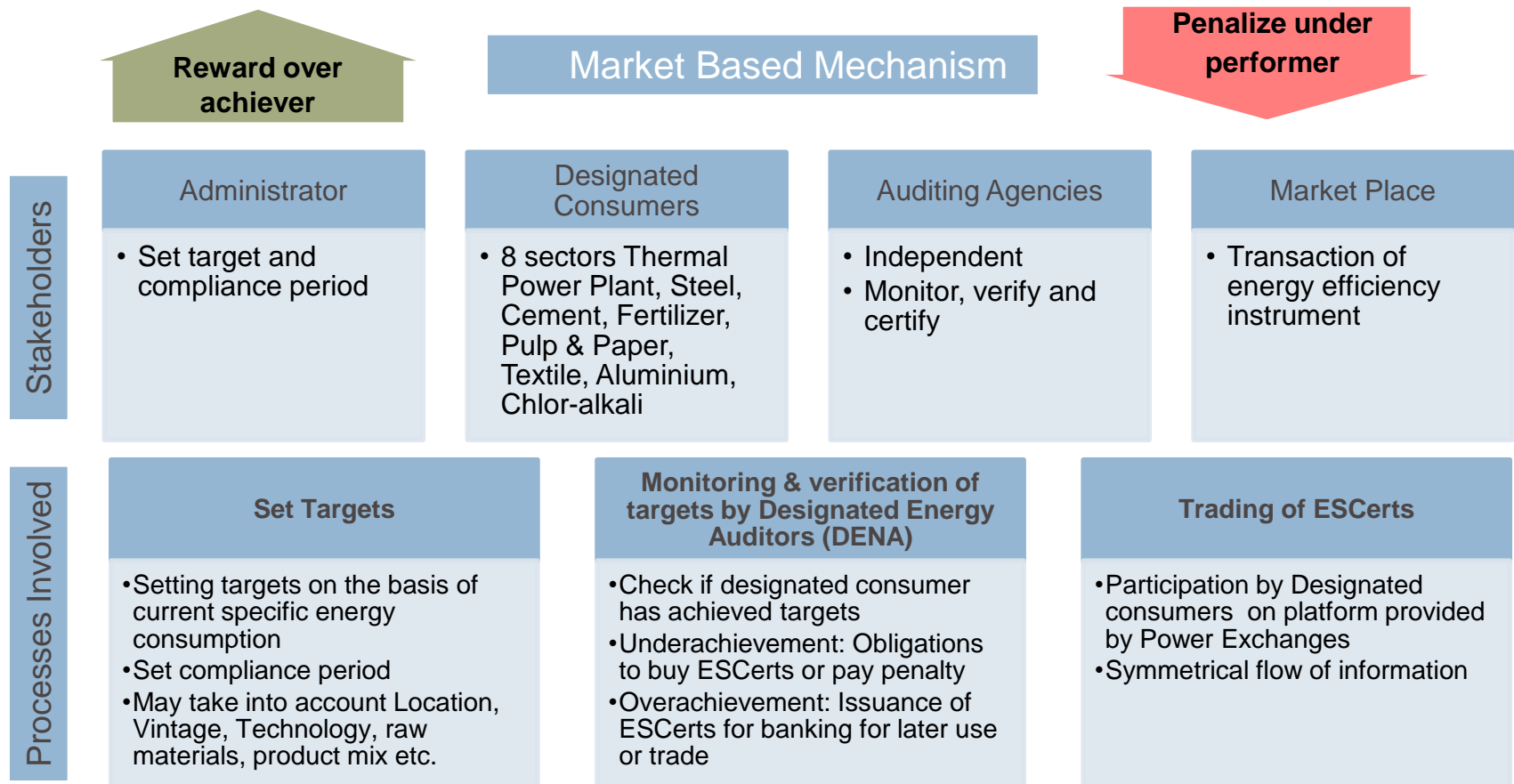


PAT Scheme Goals and action points

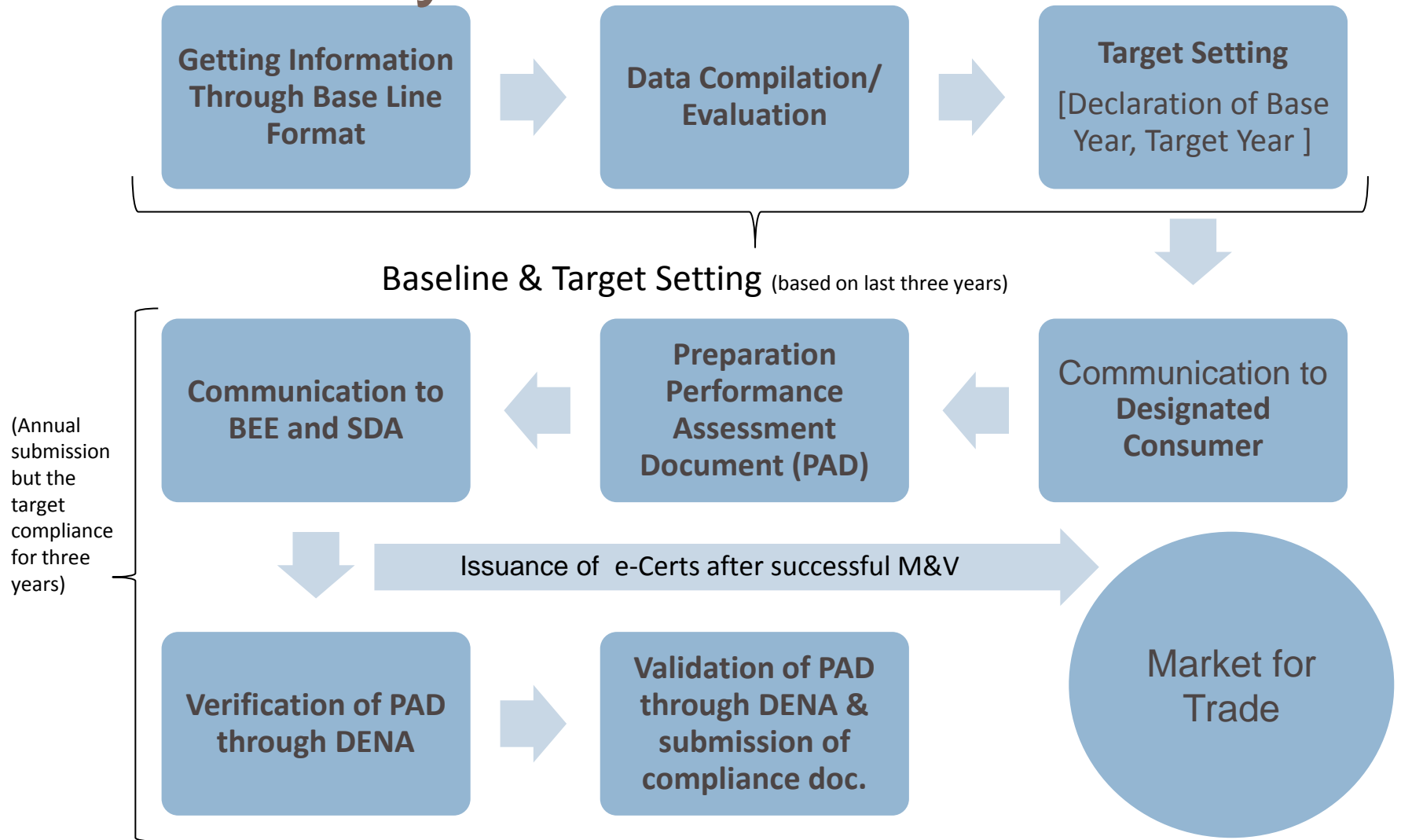


Perform, Achieve & Trade (PAT) Mechanism

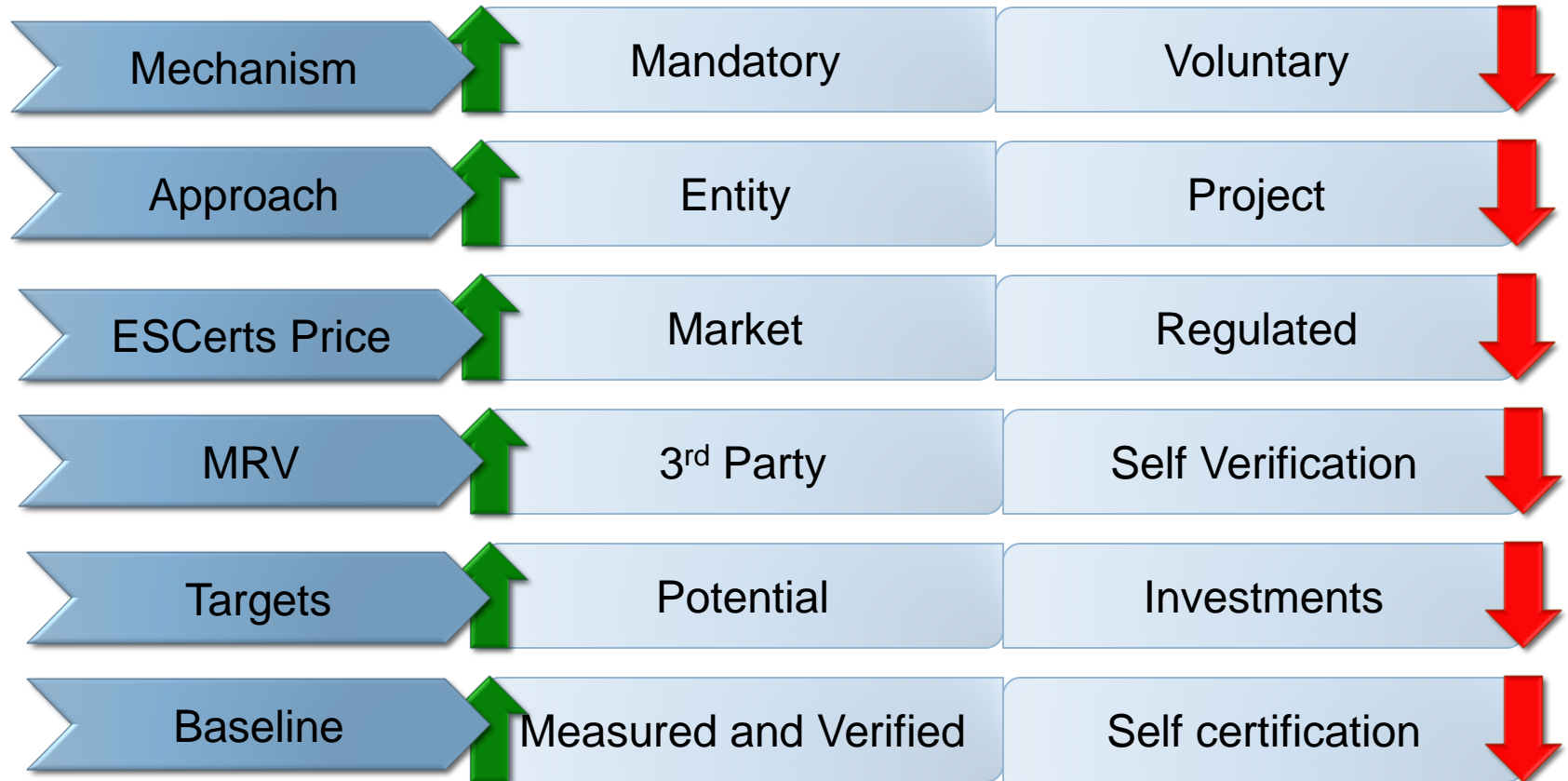
- The market based mechanism to enhance the cost effectiveness in improving the Energy Efficiency in Energy Intensive industries through certification of energy saving which can be traded



PAT Activity Flow Sheet





Challenges



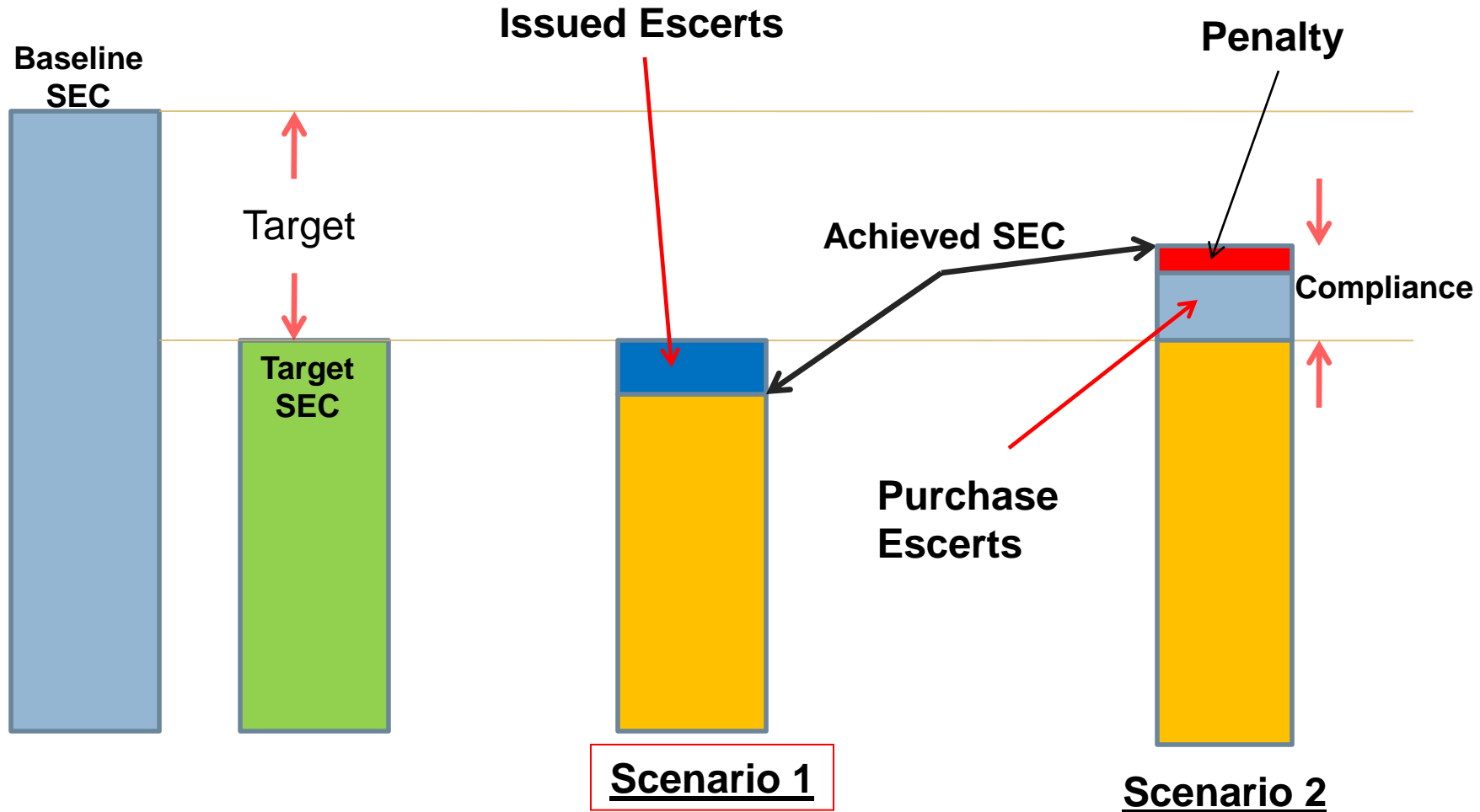
Challenges

- Technical
 - Scale of Production (Installed Capacities)
 - Use of Raw Material
 - Process Technology
 - Vintage
 - O & M Practices
 - Type of Product Output
 - Variation in output/product
 - Plant boundary
 - Variation in fuel quality
 - Plant load factor
 - Monitoring & Verification

PAT Scheme : Background & Scope

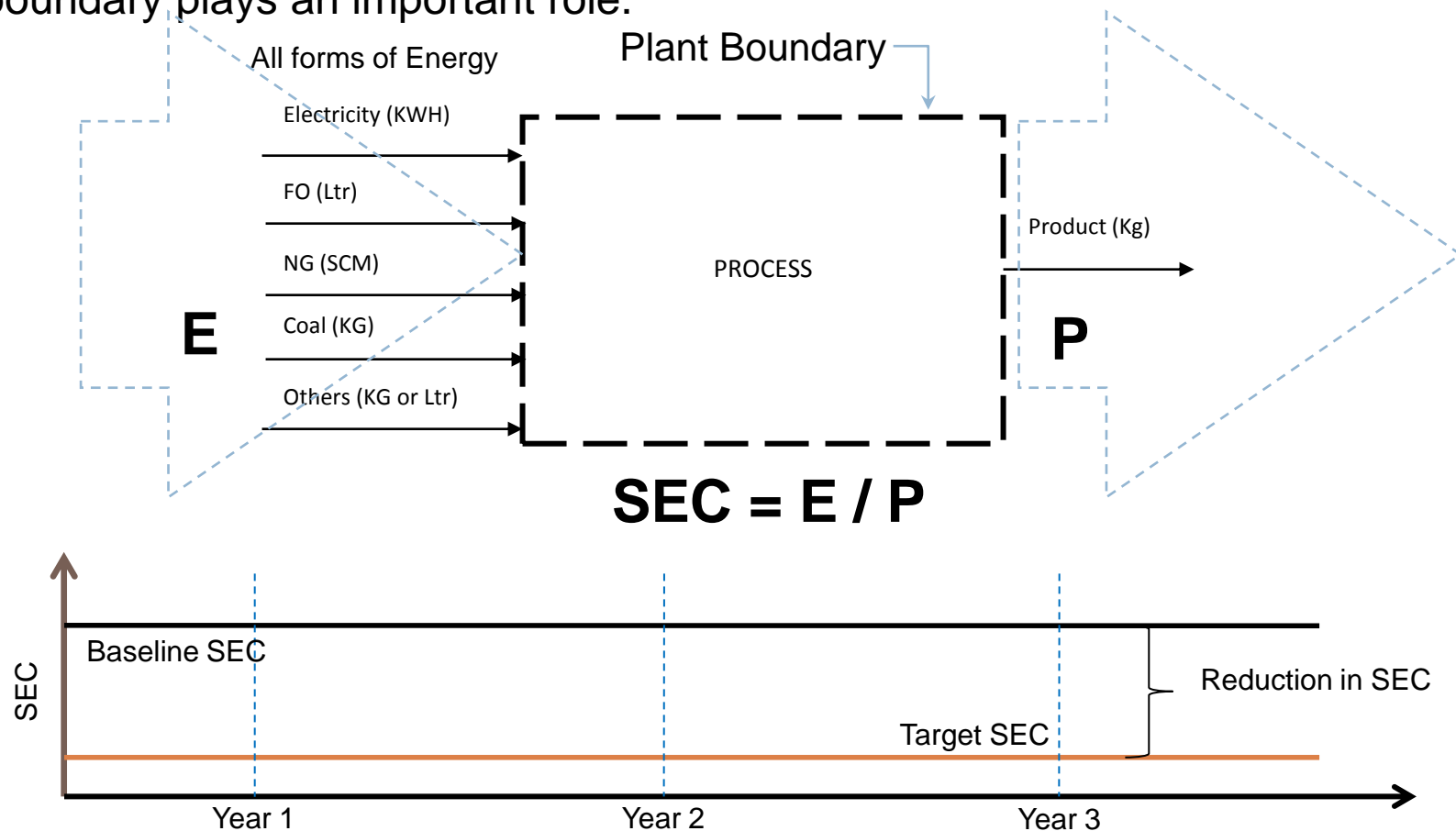
- Covers 477 designated consumers in 8 sectors
- All DCs consume about 165 mtoe energy
- Targets would be given to all DCs to achieve the same within a time frame
 - Achievement > Target  E-Scerts
 - Achievement < Target  Purchase E-Scerts / Penalty
- National Target = 6.6 mtoe at the end of 1st PAT Cycle (by 2014-15)

Concept of Target, Compliance, Escerts & Penalty



Specific Energy Consumption

- As the SEC is calculated on a Gate-to-Gate concept, the definition of plant boundary plays an important role.



PAT Scheme : Approach Towards Target Setting

- Sectoral Target will be on pro-rata basis of energy consumption among 8 sectors to achieve National Target
- Establishment of Baseline :
 - As per reported data of last 5 years (2005-06 to 2009-10)
 - Normalization Factor (capacity utilization)
 - Arithmetic Average of last 3 years value
- Targets to be statistically calculated based on relative SEC approach after grouping the DCs suitably
- The target reviewed by an expert committee before notification

General Rules for Establishing Baseline

- Definitions:

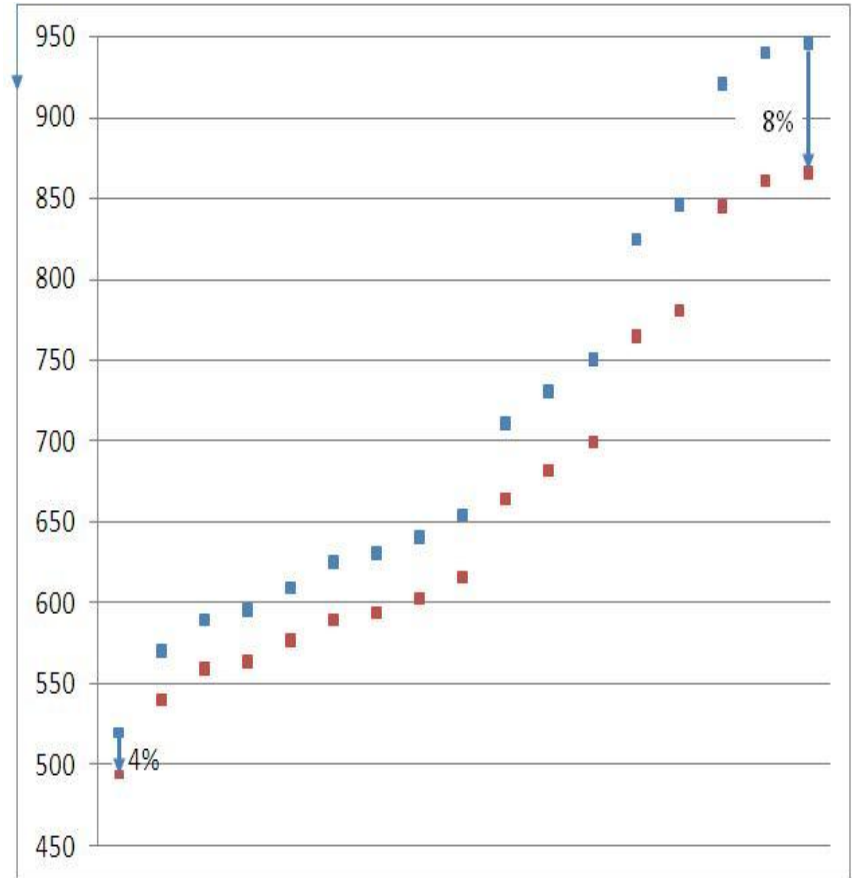
- Baseline Year : 2009-10
- Baseline Production (P_{base}) : Avg. of 2007-8, 2008-9 & 2009-10
- Baseline SEC (SEC_{base}) : Avg. of 2007-8, 2008-9 & 2009-10
- Baseline CU% (CU_{base}) : Avg. of 2007-8, 2008-9 & 2009-10
- Target SEC ($\text{SEC}_{\text{target}}$) : SEC as estimated in 2014-15
- Target : % reduction from SEC_{base}

- Estimation of Energy Saving (MTOE) :

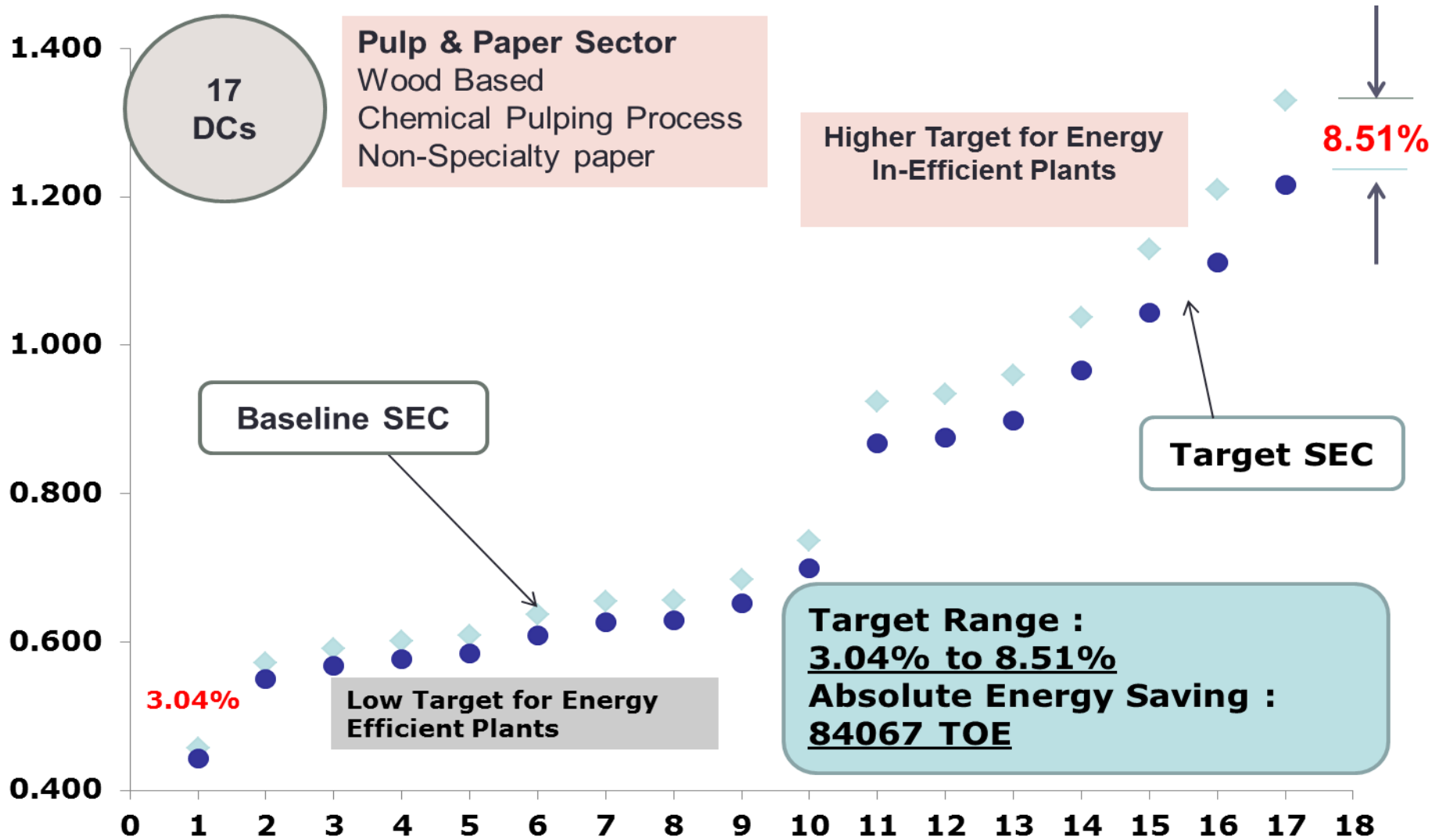
$$P_{\text{base}} (\text{SEC}_{\text{base}} - \text{SEC}_{\text{target}})$$

Target is Plant Specific Less for Energy Efficient & High for Energy Inefficient Plant

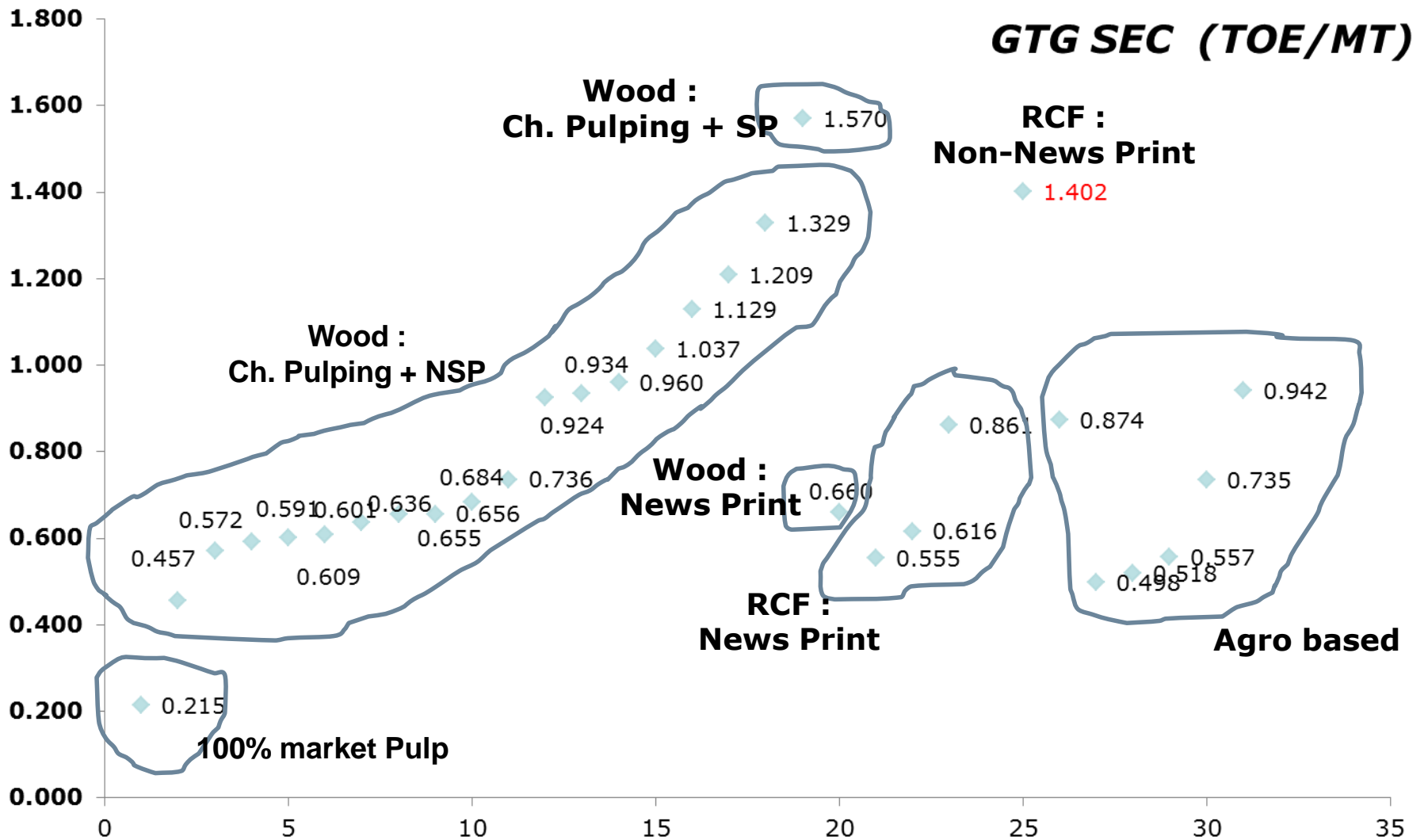
- **Covers units using about 165 million toe/year**
 - Gate-to-gate specific energy consumption, collectively, to be about 5.5% less in 2013-14 than it was in 2008-09
 - Less efficient units have larger SEC %-reduction targets – so that the collective SEC reduction is 5.5%
- **Energy Savings Certificates (and penalties) would be based on difference between the achieved SEC & the target SEC and the base year Production**



SEC Spread in Baseline & Target Year



SEC Spread as per Grouping of DCs in Pulp & Paper Sector



THANK YOU

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