INDUSTRY

The industry sector in India doubled in value during 2000/01 to 2010/11 and grew at an annual growth rate of 7%. In 2010/11 the industry sector consumed ~1656 TWh of energy, which is 45% of the total commercial energy consumed (TEDDY, 2012). Seven sub-sectors - aluminium, cement, chlor-alkali, fertilizer, iron and steel, pulp and paper, and textiles are the largest energy consumers, accounting for around 60% (TERI calculations) of total energy use in the industry sector. These are analysed at individual sub-sector levels. The remaining sub-sectors are categorised as "Others". The present analysis offers scenarios of likely reduction in energy demand by effecting efficiency measures in industry. The Perform-Achieve-Trade (PAT) scheme of Bureau of Energy Efficiency (BEE) wherein the energy savings could be traded, and non-compliants penalised, is assumed to be the major driver in this analysis. As the specific energy consumption (SEC) norms are gradually tightened by BEE, and PAT penetrates to more units - Designated consumers (DCs), the energy consumption is likely to fall. The energy required by industry as feedstock has not been analysed in this exercise

Level 1

This is the 'Least effort' scenario which assumes no new government policies, other than the one PAT cycle (2011-15). The PAT cycle results in improvement in efficiency of DCs across the 7 PAT sub-sectors. The targets are applicable to only the subset of the units in the PAT sub-sectors. However, the efficiency of the DCs (SECs) undergoes a further reduction/revision by the same percentage (as they did during 2011-15) but only by the end of the terminal year (2047). The remaining units in the sub-sector are not subject to PAT targets. The efficiency of these units improves at 5% (of the efficiency improvement for the PAT DCs.). The "Others" undergo reduction in energy intensity by a CAGR of ~5%.

Level 2

This is the 'Determined effort' scenario, which includes a gradual enhancement of coverage of PAT (Table 1). The PAT DCs would achieve the best efficiency possible in every sub sector. The units not covered under PAT also improve their efficiency, which is 10% of the PAT target. The "Others" undergo a reduction in intensity to the tune of ~5.5% CAGR

Level 3

Building on Level 2, this 'Aggressive effort' scenario further increases the PAT coverage under the seven sub-sectors. The units not covered under PAT increase their efficiency across processes at a rate of 20% of the efficiency improvement under PAT. The "others" undergo an efficiency improvement to the tune of ~6% CAGR.

Level 4

Level 4 represents the 'Heroic effort' scenario, which indicates the maximum possible improvement that can be achieved in the industry sector. This level further increases penetration under PAT. Further, this level assumes that the units not covered under the PAT scheme undergo an efficiency increase of 50% of the PAT increase. The "others" improve their intensity a little over 6% CAGR.

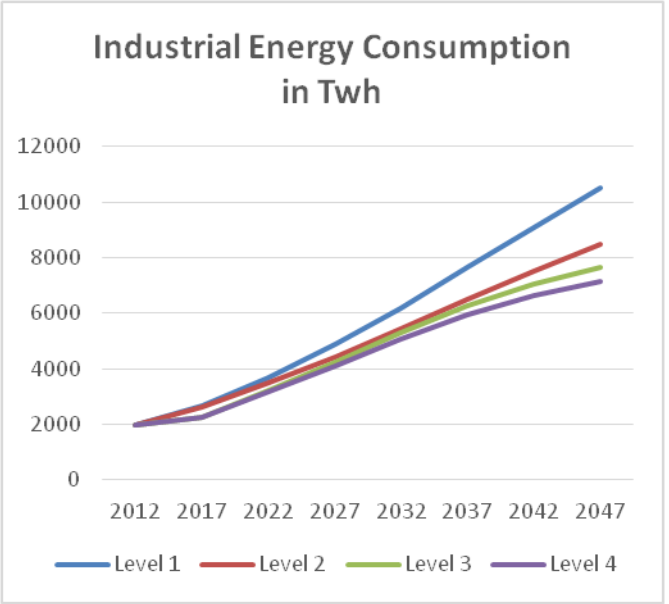

Table 1

PAT penetration across levels

		PAT penetration (%) in 2047			
	2012	Level 1	Level 2	Level 3	Level 4
Cement	72	19	72	79	83
Fertilizer	75	66	75	79	84
Aluminum	69	19	70	79	83
Iron and Steel	56	11	60	64	69
Pulp and Paper	29	6	30	39	48
Textile	93	50	65	68	69
Chlor Alkali	89	50	89	93	94

Note: In cases where the penetration of PAT industries appears to decrease from the base year, the DC's in the PAT sub-sectors complete one PAT cycle and there is no further addition of DC's in that sector.

Note: Please see detailed documentation for references.