

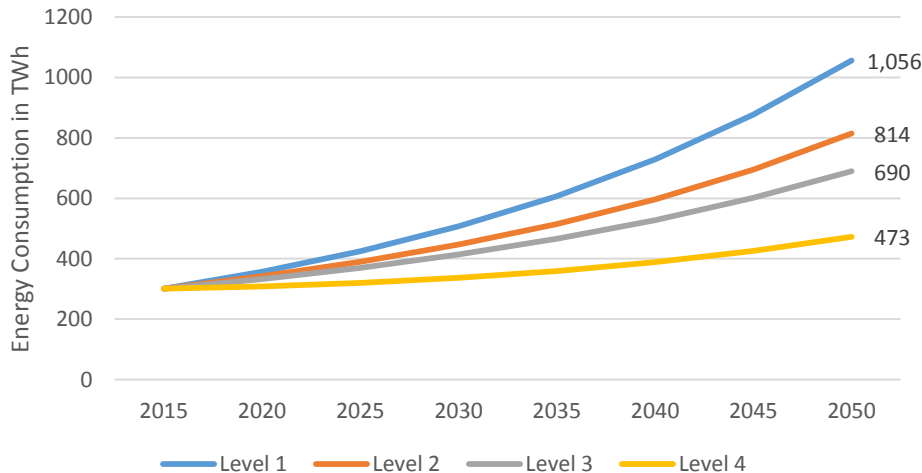
# Industry: Energy intensity

## Level 1

Level 1 assumes that Industries will follow the PAT compliance and improve their efficiency level by 5-15% by the end of 2050. PAT industries are assumed to improve their efficiency level marginally from the baseline of 2015. For Others sub group, the energy intensity reduction is assumed to be with a CAGR of 3-4%.

## Level 2

Level 2 assumes implementation of energy efficiency and renewable energy related project in industries. The implementation would be additional to PAT activities and each industry could adopt new financially viable technologies that are available and improve efficiency level by 20-30%. It is assumed that this could drive the non PAT industries to accelerate the EE project implementation. For "Others" sub group, this level assumes improvement in the energy intensity with a CAGR of 4-5%.



For demand analysis for industries, the industrial sector in the state of Karnataka is divided among participants in Perform-Achieve-Trade (PAT) industries and non-PAT industries (Others). The PAT industries are the large energy intensive industries which are covered under PAT scheme of Bureau of Energy Efficiency. Out of 11 PAT sectors, this tool considers only 7 sectors namely cement, iron & steel, pulp & paper, textile, aluminium, refinery and fertilizer. The industries which are not covered in PAT sectors are considered in "Others" sub-group. Others sub-group also consider all the Micro Small and Medium Enterprises and non PAT industries. This subgroup contributes to 40% of industrial production in Karnataka. The energy consumption and performance profile of PAT Designated Consumers (DCs) in Karnataka is compared with the overall PAT DCs for each sector. Different levels are defined for each sector separately considering the present efficiency level of each sectors.

## Level 3

Level 3 assumes the implementation of best available technology in each sector. Due to large scale implementation, the costs of technologies are expected to be reduced which makes them viable for other industries to implement the projects. This could lead to efficiency level of the industries to improve by 30-40%. Others sub group is assumed to improve its energy intensity level with a CAGR of 5-6%.

## Level 4

Level 4 is the most optimistic scenario which assumes maximum possible improvement in the energy efficiency level and there is no financial barrier for implementation of the EE and RE related projects. This could lead to efficiency level of the industries to improve by 40-60%. The Others sub group is assumed to improve with a CAGR of 6-7%.