

Commercial: Efficiency of Lighting and Appliances

Level 1

Level 1 assumes that there is no significant improvement in efficiency. This could be because of increasing life cycle cost, lack of required policy and decrease in prices of electricity which remains a major obstacle to penetration of best available technologies.

Level 2

Level 2 assumes considerable improvement in penetration of efficient appliances. By 2050, 30% of demand is met by the best available technologies, remaining 50% and 20% of demand is met by medium efficiency and low efficiency appliances, respectively. The penetration of high efficiency appliances is limited, which could be due to high capital cost and low awareness, especially in rural areas.

As per tariff order of Assam, commercial sector in the state accounted for nearly 15% of the total electricity consumption of which nearly 36% is in the organized sector in buildings having connected with contract demand of 25 kVA or more. Energy consumption in commercial buildings depends on a combination of type of appliances used and building envelope. This lever presents change in energy consumption of commercial buildings under scenarios of penetration of energy efficient appliances. Change in energy requirement due to building envelop optimization has been dealt separately.

Level 3

Level 3 assumes that penetration of high efficient appliances improves significantly. This could be due to policy measures like mandatory use of best available technology in new buildings, tax rebates, etc. In 2050, 50% of energy demand is met through high efficiency appliances, and balance 40% and 10% is met through medium efficiency and low efficiency appliances, respectively.

Level 4

Level 4 is an optimistic scenario which assumes that low efficiency appliances will completely be eliminated by 2050. This may be supported by government initiatives like tax rebates, mandatory use of high efficiency technology, and decrease in prices of best available technology. In 2050, 80% of energy demand will be by high efficient appliances and remaining 20% by medium efficiency appliances.

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