## TRACTOR ENERGY DEMAND TRAJECTORIES

The number of tractors in the country was about 5.3 million in 2011 and has been growing at 6 percent annually. This trend is expected to continue as only 19 percent of the potential market has been exploited. Total annual demand for diesel from tractors is estimated to be about 6 million tonnes (MT) in 2011.

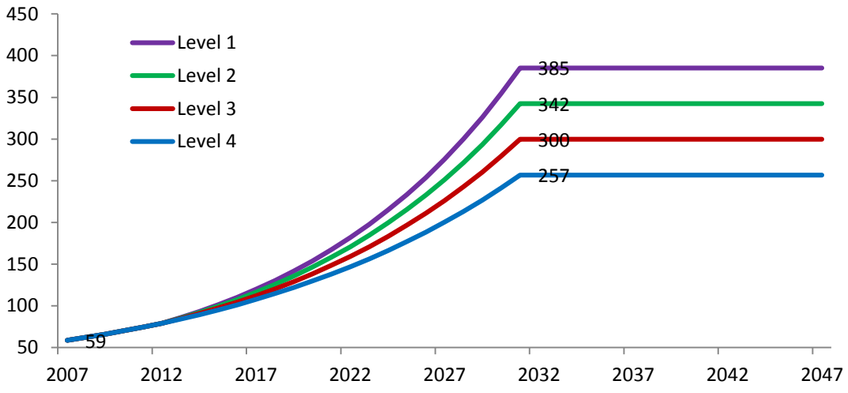


Figure 1: Energy Demand from Tractors (TWh)

### LEVEL 1

There is no improvement in fuel efficiency of tractors, and demand side incentives to improve efficiency are absent. Tractors continue to use 4.5 lph. The demand for diesel reaches saturation at 32 Million tonnes (385 TWh) by 2031.

### LEVEL 2

Fuel efficiency improves, reducing fuel requirement for an hour of operation to 89 percent of the present value. The improvement in specific fuel consumption (SFCs) is autonomous and by 2031, tractors use 4 lph of diesel. The demand for diesel reaches saturation at 28 Mt (342 TWh).

### LEVEL 3

In Level 3, fuel efficiency further improves, with only 3.5 litres needed to run for an hour, a 22 percent improvement from Level 1. The ceiling for maximum SFCs is tightened by Bureau of Indian Standards (BIS). The demand for diesel grows to 25 Mt (300 TWh) by 2031 and stabilizes thereafter.

### LEVEL 4

Level 4 assumes that fuel efficiency of tractors improves significantly, resulting in fuel savings of 33 percent. BIS restricts the penetration inefficient tractors with fuel consumption above specified SFC norms. Deregulation of diesel prices for agriculture sector also pushes up the sale of fuel efficient tractors. Demand for diesel in this level reaches saturation at 21 Mt (257 TWh).