Energy demand for cooking

Level 1

Level 1 assumes that 36% of rural households would switch to LPG by 2050. In urban areas transition would be from LPG to PNG, and 34% of urban households will use PNG, while 52% of them would still use LPG. Further with increase in reliability of electricity supply, 14% and 16% of urban and rural households respectively use electricity for cooking. Total energy needed for cooking is estimated to be 49 TWh by 2050.

Level 2

Level 2 assumes that due to effective implementation of rural LPG distribution programs, 38% of rural households use LPG and 24% of rural households use electricity. Establishment of a PNG network in some rural areas could lead to 2.7% of rural households using PNG, while biomass could still remain a major source with 28% of households using biomass with improved cook stoves. In urban areas 37% are assumed to use PNG and almost half population on LPG. Total energy needed for cooking is estimated at 43 TWh by 2050.

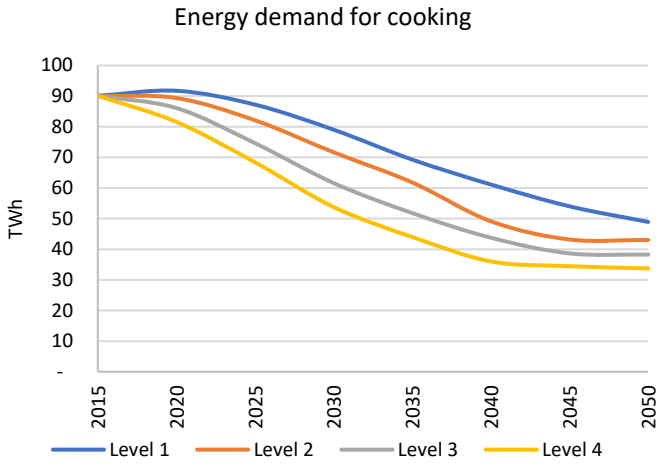
On an average, a household uses about 8 to 10 LPG cylinders or 170 scm of PNG or 1,022 kWh of electricity annually for cooking. This combined with stove efficiencies, roughly translates to an average use of 7 MJ/day or 1.94 kWh/day. For present analysis, it is assumed that average energy required for cooking is constant over time. There is no distinction made for commercial and residential cooking energy demand, as cooking energy estimated is to satisfy the requirement of the same population. There are around 25.8 million households in Maharashtra, of which nearly 52.3% are in rural areas. Considering the actual fuel used by urban and rural population, conversion efficiency and efficiency of the fuel used for cooking, a total energy requirement of around 90 TWh has been estimated for the baseline year of 2015. This lever analyzes the cooking energy requirement under different scenarios of fuel usage and cook stove efficiencies.

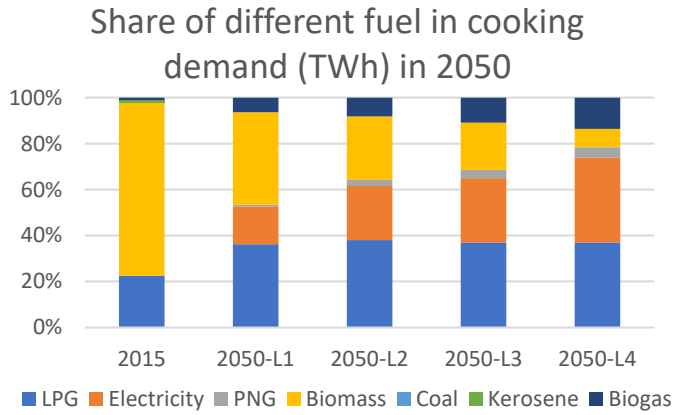
Level 3

Level 3 assumes that 28% of rural households are using electricity, 37% of the households using LPG and 11% using Biogas by 2050. 20% of households use biomass with improved cook stoves. In urban areas, increase in PNG network is assumed to lead to 41% of urban households using PNG for cooking energy by 2050. LPG is expected to be used for cooking only in 41% of urban homes and 18% of the homes are expected to use electricity. Total energy needed for cooking is estimated to be 38 TWh by 2050.

Level 4

In Level 4, it is assumed that LPG and electricity will be major source of cooking fuel in rural areas by 2050, with 37% and 37% of households using them as primary fuel for cooking, respectively. Only 8% of rural households are expected to use biomass for cooking. PNG penetration in urban India is expected to increase to 51% and LPG users expected to fall to 30%. Remaining 19% of urban homes are expected to use electricity for cooking. Total energy needed for cooking is estimated to be 34 TWh by 2050.





The graph above is for Rural Areas in Medium Growth Scenario