Energy demand for cooking

On an average, a household uses about 8 to 10 LPG cylinders or 170 scm of PNG or 1022 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 6.9 million households in Assam, of which nearly 85% 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 34 TWh has been estimated. This lever analyzes the cooking energy requirement under different scenarios of fuel usage and cook stove efficiencies.

Level 1

Level 1 assumes that 26% 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 will be 16 TWh by 2050.

Level 2

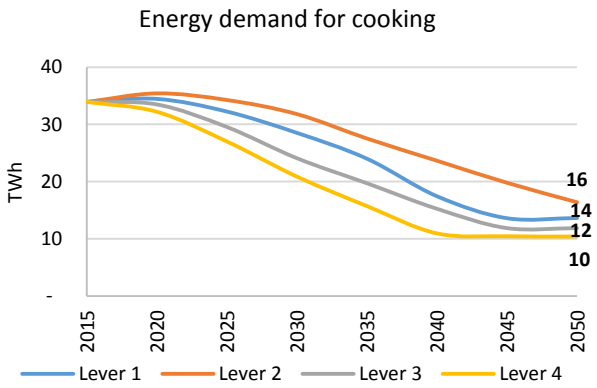
Level 2 assumes that due to effective implementation of rural LPG distribution programs, 28% of rural households use LPG and 24% of rural households use electricity. Establishment of a PNG network in some rural areas leads to 2.7% of rural households using PNG, while biomass will still remain a major source with 37% of households using biomass with improved cook stoves. In urban areas 37% will use PNG and almost half population will use LPG. Total energy needed for cooking will be 14 TWh by 2050.

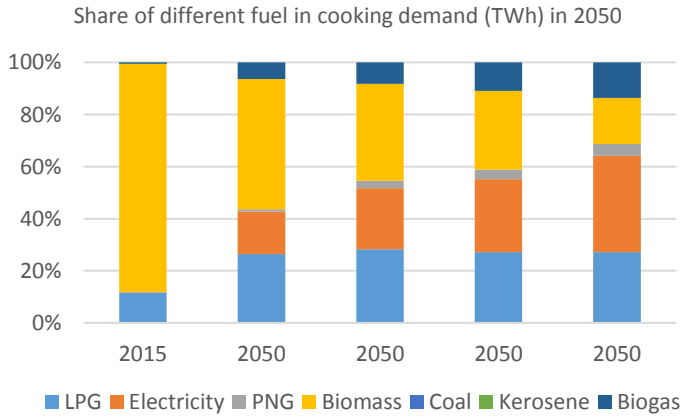
Level 3

Level 3 assumes that 28% of rural households are using electricity, 27% of the households using LPG and 11% using Biogas by 2050. 30% of households use biomass with improved cook stoves. In urban areas, increase in PNG network leads to 40.9% of urban households using PNG for cooking energy by 2050. LPG is used for cooking only in 41% of urban homes and 18% of the homes use electricity. Total energy needed for cooking will be 12 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 27% and 37% of households using them as primary fuel for cooking, respectively. Only 18% of rural households uses biomass for cooking. PNG penetration in urban India increases to 51% and LPG users falls to 30%. Remaining 19% of urban homes uses electricity for cooking. Total energy needed for cooking will be 10 TWh by 2050.





The graph above is for Rural Areas in Medium Growth Scenario