Residential Cooling: Air Conditioning

Energy consumption for air-conditioning would increase due to improvements in the nation's economy (GDP 7.0%), population growth (3.2%), urbanization and lifestyle. The use of air conditioners for space cooling is fuelled 100% by electricity and is more used within the urban settlement in Nigeria for residential buildings. It is estimated that electricity consumption for space cooling will increased significantly by 2050. Total electricity consumed for residential cooling is 37.59TWh in 2010.

Level 1

Level 1 assumes an increase in energy consumption for residential cooling in line with current trend i.e. an increase in energy demand per household and 100% ownership of air-conditioner in the urban settlement and 20% in the rural settlement. The cooling energy demand per household is estimated to be 5,000kWh by 2050.

Level 2

Level 2 assumes a decrease in cooling energy demand per household of 4,000kWh with 75% ownership of air conditioners in the urban settlement and 15% rural settlement.

Level 3

Level 3 assumes a decrease in cooling energy demand per household of 3,000kWh with 50% ownership of air conditioners in the urban settlement and 10% rural settlement.

Level 4

Level 4 assumes a decrease in cooling energy demand per household of 2,000kWh with 25% ownership of air conditioners in the urban settlement and 5% rural settlement.

Residential Cooling Systems