Service Sector Cooling: Air Conditioning

Energy consumption for air-conditioning would increase due to improvements in the nation's economy (GDP 7.0%), 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 commercial service buildings. It is estimated that electricity demand for space cooling will increased significantly by 2050. Total electricity consumed for service sector cooling is 7.64TWh in 2010.

Level 1

Level 1 assumes an increase in energy demand for service sector cooling in line with current trend i.e. an increase in economic activities and a high percentage contribution of service sector to the economy by 2050. The cooling energy demand for service sector is estimated to be 98.33TWh considering less energy efficiency by 2050.

Level 2

Level 2 assumes a decrease in cooling energy demand for service sector due to improved efficiency by about 10%. The cooling energy demand for service sector is estimated to be 78.67TWh by 2050.

Level 3

Level 3 assumes a 20% improvement in energy efficiency and decrease in contribution of the service sector to the economy. The cooling energy demand for service sector is expected to reduce to about 59TWh.

Level 4

Level 4 assumes a decrease in cooling energy demand for service sector to about 40TWh. The decrease will be due to high improvement in energy efficiency, energy building code and low contribution of the service sector to the economy.

Service sector cooling