c) Oil desulphurization

d) Flue gas desulphurization

NO_x Reduction

a) Flue gas recirculation (FGR) (gas-fired units)

b) Low excess air

c) Staged combustion

B.1.2.2 Available Technologies (see definition in B.1.2)

SO_2 Reduction

a) Magnesium oxide scrubbing remains to be demonstrated on a full-scale power station with an acceptable degree of reliability. Anticipated costs are likely to be higher than limestone, though experience is extremely limited.

b) Lime/limestone scrubbing with chemical promoters, e.g., adipic acid.

Nitrogen Oxide Reduction

a) Low-NO_x burners

b) Flue gas treatment (FGT)

Performance of NO_x Reduction Techniques

FGR is used now for superheat control and has some beneficial effects on NO_x reduction. Generally, it is evidently not a favored technique. Its costs are indeterminate. Low excess air may be applicable and costs nothing, but operators may resist it because of safety problems with pulverized coal. Staged combustion is available but possibly may cause corrosion problems.

Low-NO_x burners are available at \$1-10/kW, depending on size and ease of replacement of existing burners.

B.1.2.3 Emerging Technologies

SO_2 Reduction

a) Fluidized-bed combustion

b) Fuel gasification

c) Gasification with combined cycle operation

d) Pressurized fluidized-bed combustion

e) Coal liquefaction, direct (SRCI and SRCII) and indirect (e.g., SASOL)

f) Limestone injection with multi-stage burner, (LIMB process)