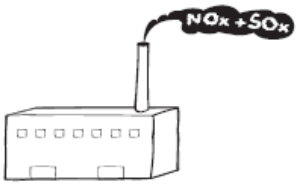

TRADE-OFFS AND CO-BENEFITS ACCOMPANYING NOx CONTROL

Technology Options for NOx Reductions

Systematic reviews of technology options for controlling NOx emissions from boilers in the forest products industry have been carried out by governments in Europe and Canada, as well as a regional body in the United States. Taken together, they suggest the following approaches for NOx emissions reduction:

- controlling emissions from recovery boilers by ensuring proper mixing and apportionment of combustion air, (a very site-specific application of staged combustion practices);
- control of lime kiln emissions by controlling firing conditions and by appropriate design of new or modified installations;
- controlling power boiler emissions by controlling firing conditions and use of low-NOx burners on pulverized coal/stoker boilers or oil/wood units;
- use of SNCR on base-loaded boilers, but not boilers with high load swings; and
- use of methane deNOx in stoker type boilers (involves natural gas injection and flue gas recirculation).

These recommendations embrace the notion of practicing prudent combustion practices and the selective application of post-combustion controls. The reviews undertaken by governments do not specifically endorse general application of the most aggressive post-combustion controls: selective catalytic reduction, selective non-catalytic reduction, and flue gas desulfurization.

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