

C3.5 DPS P3 12 AIRBORNE EMISSIONS GENERATED

Airborne Expected Emissions from New Plant.

All airborne emissions are emitted by exhaust systems through the chimneys.

- SO₂ emissions (g/kWh): Phase 3 plant (0.73g/kWh)
- NO_x emissions (g/kWh): Phase 3 plant (0.96g/kWh)
- Dust emissions (g/kWh): Phase 3 plant (0.33g/kWh)
- New plant CO₂ emission factor is 0.576kg/kWh
- New plant Ammonia emissions is 5ppm

Annual Emissions					
	SO ₂ Tonnes	NO _x Tonnes	CO ₂ Tonnes	Dust Tonnes	Ammonia Tonnes
Expected (with new plant 2 shift)	6179	4467	1,755,135	814	14
Expected (with new plant at base load)	6270	3727	1,742,290	875	20

Flue Gas Abatement Measures

The flue gas abatement measures installed on the proposed plant are summarised below.

NO_x reduction

The concentration of oxides of nitrogen in the flue gas is reduced by the Selective Catalytic Reduction NO_x reduction system (SCR/DeNO_x). The NO_x reduction is achieved using an ammonia rich reactant and a catalyst. The reducing agent, which is an aqueous urea solution of 40% concentration, is injected, atomized, and distributed directly into the exhaust gas upstream of the SCR reactor. In the reactor, the highly active all-ceramic catalysts convert NO_x almost completely into nitrogen (N₂) and water vapour (H₂O) by the ammonia (NH₃) released by decomposition of urea. The ceramic catalysts are initially placed in three layers in the reactor and as catalytic activity is reduced, a fourth layer will secure the emission limits and a very high and cost-effective utilisation of the catalysts.

SO_x and particle reduction

Particulate reduction and SO_x reduction is performed by:

- A reactor for injection of reactant where the contact between SO_x and reactant will occur; and

- A bag filter, where ash, particulates, and product will be removed from the exhaust gas. The final reaction and absorption of SO_x will occur on the filter bag surface.

Reactant is injected into the reactor prior to the actual bag filter. From the reactor, the exhaust gas with the reactant passes to the bag filter. A cleaning cycle releases filter-ash to the bottom of the bag filter where a rotating device discharges the ash through a hole. The filter ash is collected in a collection tank and pneumatically transferred to a 3-day storage silo prior to disposal.