

APPENDIX - III

Sheet 1



CALCULATION OF BASELINE EMISSION FACTORS AND EMISSION REDUCTIONS OF 7.7 MW RICE HUSK BASED COGENERATION POWER PROJECT: VANDANA VIDHYUT LIMITED						
Scenario 1: Baseline calculations using Combined Margin Approach						
Year of offer	2000-01		2001-02		2002-03	
Installed capacity	BASE YEAR					
Sector	Cap.Addn.	Instl. Cap.	Cap.Addn.	Instl. Cap.	Cap.Addn.	Instl. Cap.
Coal Based, MW (CSEB)				1240		
Coal Based, MW (Central)				414		
CPP, MW				95		
Gas Based, MW (Central/state)				61		
Hydro, MW (CSEB)				120		
Hydro, MW (Central)				0.00		
Micro / Small Hydro				0.2		
Nuclear, MW(central)				23		
Renewable - Rice husk, MW				6		
Total, MW				1959		
Generation Mix						
Sector	mU	%	mU	%	mU	%
Thermal Coal based(CSEB)			7756.00	58.03		
Thermal Coal based(Central)			4085.93	30.57		
Gas Based (Central)			348.38	2.61		
Hydro (CSEB)			392.00	2.93		
Nuclear (Central)			186.67	1.40		
CPP			560.00	4.19		
Renewable - rice husk			35.64	0.27		
Total generation			13364.62	100.00		
Net generation excluding Hydro, Nuclear, CPP & RE plants			12190.31	91.21		
% of generation by coal out of total gen.excl. Hydro, Nuclear, CPP & RE plants				97.14		
% of generation by gas out of total gen.excl. Hydro, Nuclear, CPP & RE plants				2.86		
Baseline Emissions (kgCO ₂ /kWh)						
Operating Margin						
Emission factor for coal			1.085			
Emission factor for Gas			0.418			
Net emission factor for thermal (Coal)				1.054		
Net emission factor for thermal (Gas)				0.012		
Net Operating margin factor				1.066		
Built Margin Factor						
Considering 20% of Gross Generation						
Sector						
Thermal Coal based(CSEB)			0	0.00		
Thermal Coal based(Central)			2346.45628	81.43		
Gas Based (Central)			348.3790985	12.09		
Hydro (CSEB)			0	0.00		
Nuclear (Central)			186.6659091	6.48		
CPP			0	0.00		
Renewable - rice husk			0	0.00		
Total generation			2881.501288	100.00		
% of generation by coal out of total gen.				81.43		
% of generation by gas out of total gen.				12.09		
Built Margin						
Emission factor for coal			1.085			
Emission factor for Gas			0.418			
Net emission factor for thermal (Coal)				0.88		
Net emission factor for thermal (Gas)				0.05		
Net Built Margin factor				0.93		
Combined Margin Factor (Avg of OM & BM)				1.000		
Baseline Emissions Factor (kgCO₂/kWh)				1.000		1.000
On-Site Project Emission Reductions						

Net no. of units exported to grid, millions excl. T&D loss						45.41
No. of units replaced in the grid, millions						45.41
Emission factor considered, kg CO ₂ /kWh						1.000
Baseline Emissions [in tonnes of CO ₂ /annum]						45410
Project Emissions [in tonnes of CO ₂ /annum]						14351
Emission Reductions [in tonnes of CO ₂ /annum]						31059
Commitment period					2002-2012	
No. of years of delivery of ERUs					10	
Total baseline emissions in 10 years						310592

	Year	2002-03	Total in 10 Years Crediting Period (ton of CO ₂)
Baseline emissions		45410	454102
Project emissions		14351	143510
Net Emission Reduction Units		31059	310592