

Step-by-step application of the methodology for calculating the emission reductions

All equations and parameters used as referenced in Section B.6 of the PDD

Key parameters used in the calculations							
Heat value emission factor (A)	Coal equivalent (standard coal) (B)	The standard coal consumption (C)	E_Steamy (A x B x C)	GWP_N ₂ O	N ₂ O_/AdOHy	E_Power y	%_on-line
(Kg-CO ₂ /MJ)	(MJ)	(kg-ce/kg-steam)	(t CO ₂ e/t-steam)	(tCO ₂ /tN ₂ O)	(t N ₂ O /t adipic acid)	(t CO ₂ e/Kwh)	(%)
0.0983	29.3	0.0935	0.27	310	0.27	1.1983E-03	10%

Calculation of the annual amount of anthropogenic baseline emissions (BE)						
As given in AM0021, BE _y =Q_ N ₂ O _y ×GWP_N ₂ O+Q_Steam_py×E_Steamy						
Year y	P_AdOHy (t)	N ₂ O_/AdOHy (t N ₂ O /t adipic acid)	Q_ N ₂ O _y (t)	Q_Steam_py (t)	E_Steamy (t CO ₂ e/t-steam)	BE _y (t CO ₂)
2008	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2009	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2010	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2011	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2012	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2013	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04
2014	140,000.00	0.27	37,800.00	31,152.00	0.27	11,726,411.04

Calculation of the annual amount of the emissions inside the boundary (PE)						
As given in AM0021, PE _y =Q_N ₂ O_by-pass _y × GWP_N ₂ O + ND_N ₂ O _y × GWP_N ₂ O						
Where,		Q_N ₂ O_by-pass _y = (Q_N ₂ O × (1-%_on-line))=(P_AdOH × N ₂ O_/AdOH × (1- %_on-line))				
		ND_N ₂ O _y = (Q_GE × N ₂ O_GE) _y				
		PE= (ND_N ₂ O + Q_N ₂ O_by-pass _y) × GWP_N ₂ O				
Year y	%_on-line (%)	Q_N ₂ O_by-pass _y (t)	Q_GEy(Nm ³)	N ₂ O_GEy (kg/Nm ³)	ND_N ₂ O _y (t)	PE _y (t CO ₂)
2008	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2009	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2010	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2011	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2012	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2013	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19
2014	90%	3780.00	159,064,000	0.01069	1,700.39	1,698,922.19

Calculation of the annual amount of the Leak (L) emissions			
As given in AM0021, L _y = Q_Powery × E_Powery			
Year y	Q_Powery (kWh)	E_Powery (t CO ₂ e/Kwh)	L _y (t CO ₂)
2008	8400000	1.1983E-03	10,065.72
2009	8400000	1.1983E-03	10,065.72
2010	8400000	1.1983E-03	10,065.72
2011	8400000	1.1983E-03	10,065.72
2012	8400000	1.1983E-03	10,065.72
2013	8400000	1.1983E-03	10,065.72
2014	8400000	1.1983E-03	10,065.72

Calculation of the emission reduction (ER _y) achieved by the project activity				
As given in AM0021, ER _y = BE _y - PE _y - L _y				
Year y	BE _y (t CO ₂)	PE _y (t CO ₂)	L _y (t CO ₂)	ER _y (t CO ₂)
2008	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2009	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2010	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2011	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2012	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2013	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
2014	11,726,411.04	1,698,922.19	10,065.72	10,017,423.13
Total	82,084,877.28	11,892,455.33	70,460.04	70,121,961.91