

Our Ref: SMPC/MM/2023-042

25 July 2023

To:

Director General
Department of Environmental Conservation
Ministry of Natural Resources and Environmental Conservation
Office Building No. (53)
Naypyitaw.

SUBJECT: MYINGYAN IPP – Submission of Environmental Management Plan and Greenhouse Gas Report for (January ~ June 2023)

Dear Sir,

1. On 23 April 2015, Sembcorp Utilities Pte. Ltd. ("**Sembcorp**"), a wholly owned subsidiary of Sembcorp Industries Limited, a company listed on the main board of the Singapore Exchange, was awarded a Notice of Award by the Myanmar Electric Power Enterprise ("**MEPE**"), a division under the Ministry of Electricity and Energy ("**MOEE**") (formerly known as Ministry of Electric Power) to develop and operate a 225-megawatt gas-fired power plant in central Myanmar under a 22-year power purchase agreement ("**Project**").
2. A Power Purchase Agreement (the "**PPA**") was signed on 29 March 2016 between the then MEPE and Sembcorp Myingyan Power Company Limited (the "**Company**"); the Company notes that Electric Power Generation Enterprise ("**EPGE**") has assumed all rights and contractual obligations of the then MEPE, including the PPA.
3. The Project is funded by multilateral development banks such as International Finance Corporation ("**IFC**") and Asian Development Bank ("**ADB**"), as well as several international commercial lenders and as such, an **Environmental and Social Impact Assessment ("ESIA")** was submitted in order to achieve **Environmental Compliance Certificate (ECC)**.
4. In accordance with Clause 4 of the Approval Letter on ESIA released from Ministry of Natural Resources and Environmental Conservation (MONREC) dated 17th March 2017, we are pleased to submit our Air Quality Monitoring Report and Environmental Quality Monitoring Report. In accordance with the Environmental Impact Assessment Procedure issued by MONREC Clause 108, this data is taken on a 6 - monthly interval and the attached report contains data for the first half of 2023.

5. Additionally, in accordance with Clause 109 of the Environmental Impact Assessment Procedure issued by (MONREC), the Company is pleased to submit its Environmental and Social Monitoring Plan (ESMP) checklists.
6. Should you have any queries, please do not hesitate to contact Mr. Yazar Myo Thein at yazar.myo@sembcorp.com. If you require any assistance from us, please do let us know. Thank you for your continued support on this matter.

Yours sincerely,



Yazar Myo Thein
Managing Director

Enclosures:

1. Air Quality Monitoring Report
2. Water Quality Monitoring Report
3. Soil Quality Monitoring Report
4. ESMP - Air Quality Management Checklist
5. ESMP - Emergency Preparedness Checklist
6. ESMP - Noise & Vibration Checklist
7. ESMP - OSH Management Checklist
8. ESMP - Surface Water Management Checklist
9. ESMP - Waste Management Checklist



Sembcorp Myingyan Power Co., Ltd.

Environmental Monitoring Report (Air Quality Monitoring)



Prepared

Ref: 05.03.2023 to 09.03.2023 (Air Quality Report)

31 March 2023



E Guard Environmental Services

Report Review Form

Report Title: Environmental Quality Monitoring Report in March 2023

For Sembcorp Myingyan Power Plant

Report Version:

Proponent:

Sembcorp Myingyan Power Plant

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Checked Date: 31/03/2023

Signature:



Approved by:



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1. INTRODUCTION

This report is environmental monitoring (only air and noise quality monitoring) for Sembcorp Myingyan Power Plant which is located beside of Myingyan – Nyaung-Oo Road, near the Sa Ka village in Mandalay Region.

2. METHODOLOGY

Baseline environmental parameters and sampling locations were defined according to the objectives for environmental monitoring purposes. Locations for sampling and analysis of ambient air quality of the project site were identified by Sembcorp Myingyan Power Co,ltd.

2.1 Ambient Air Quality

The emissions of dust particles and gases were measured for 24hrs continuously at the selected sites by using the Environmental Perimeter Air Station (EPAS), and EPAS provides direct readings in real time with data-logging capabilities. The monitoring results were compared with National Environmental Quality (Emission) Guideline (NEQG), World Health Organization (WHO) and American Conference of Governmental Industrial Hygienists (ACGIH) guidelines.

Table 2. 1 Ambient Air Quality Parameters

Ambient Air Quality (4 locations)	
Gas Emission	CO, CO ₂ , SO ₂ , NO ₂
Dust Emission	PM ₁₀ , PM _{2.5}

Table 2. 2 Air Quality Guideline Values

Parameters	Guidelines Value	Unit	Organization	Averaging Period
PM ₁₀	50	µg/m ³	NEQ	24hrs
PM _{2.5}	25	µg/m ³	NEQ	24hrs
CO	9	ppm	NAAQS	8hrs
CO ₂	5000	ppm	ACGIH	8hrs
SO ₂	20	µg/m ³	NEQ	24hrs
NO ₂	200	µg/m ³	NEQ	24hrs

Source: Myanmar National Environmental Quality (Emission) Guidelines, December 2015 & Air quality guidelines global update. 2005. World Health Organization.

2.2 Ambient Noise

Noise level LAeq (dBA) will be measured at the selected locations that can reflect the exposure of the nearest local community and sensitive locations. Duration and frequency were measured for 24hrs continuously at the selected site using the Noise Meter.

The monitoring procedures, data analysis and interpretation were carried out in accordance with the instrument's manufacture and National Environmental Quality (Emission) Guidelines, World Health Organization (WHO) and International Finance Corporation (IFC guidelines in order to be in line with Environmental Conservation Department, Ministry of Natural Resources and Environment Conservation (MONREC). "National Environmental Quality

(Emission) Guidelines" for Myanmar was also presented the value of noise level as LAeq (dBA).

Table 2. 3 Noise level monitoring

Noise monitoring (2 locations)	
Noise Emission	LAeq (dBA) (1hrs, 24 hrs.)

Equipment used to measure ambient air and noise measurement are shown below (Table 2. 4).

Table 2. 4 Equipment used to measure ambient air and noise measurement

<p>Davis Vantage Pro2 Wireless Weather Station</p> <p>Provides detailed current weather conditions and expanded forecasts - all at a glance!</p> <p>The Vantage Pro2 uses a frequency-hopping spread spectrum radio from 902 MHz to 928 MHz to transmit and receive data up to 1,000' (300m) line of sight. In addition, the weather station features a bubble level, improved anemometer base, redesigned wind cups, and factory-calibrated wind direction. The integrated sensor suite combines temperature and humidity sensors, rain collector with an aluminum-plated tipping bucket, and anemometer into one package for easy setup. Measure inside and outside temperature and humidity, heat index, barometric pressure, dew point, rainfall, wind direction and speed, and wind chill.</p>	
<p>Haz-Scanner EPAS</p> <p>PM₁₀, PM_{2.5}, NO₂, SO₂, CO, CO₂, Temperature, and Relative Humidity</p>	
<p>Digital Sound Level Meter</p> <p>Noise and Vibration</p>	

3. MONITORING LOCATIONS

Locations of sampling sites were identified by Sembcorp Myingyan Power Co,ltd. Air quality was monitored at the four selected locations that are Sa Ka Village (ASR4), Hnan Ywa Village (ASR3), Gyoke Pin Village (ASR 5) and Nyaung Kan Village (ASR 14).

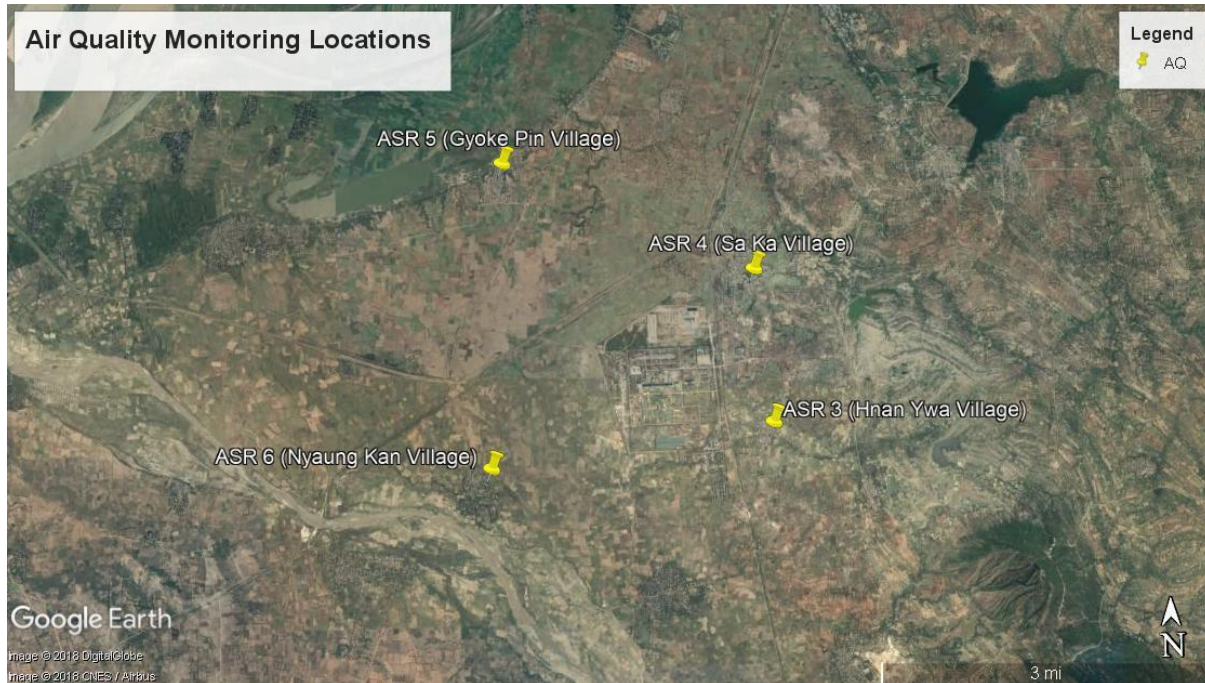


Figure 3. 1 Location of Monitoring Points

Table 3. 1 Location of Monitoring Points

Locations No.	Points	Coordinate	Locations
Ambient Air Quality and Noise Monitoring Locations			
1	ASR4	Lat- 21°23'48.591", Long- 95°23'0.849"	Sa Ka Village
2	ASR3	Lat- 21°22'17.565", Long- 95°23'18.116"	Hnan Village
3	ASR5	Lat- 21°24'21.888", Long- 95°21'7.381"	Gyoke Pin Village
4	ASR14	Lat- 21°21'44.570", Long- 95°20'55.035"	Nyaung Kan Village

4. ENVIRONMENTAL QUALITY MONITORING RESULTS

4.1 Ambient Air Quality Monitoring Results

24 hours air quality monitoring were done at each selected location from 05 March 2023 to 09 March 2023. The measured results are compared with national emission guidelines. Based on the results of air quality monitoring, all of the parameters are within the guidelines.

Table 4. 1 Observed Ambient Air Quality Results from Selected Points

Parameters	Observed Value				Guidelines Value	Unit	Averaging Period
	ASR4	ASR3	ASR5	ASR14			
PM ₁₀	7.48	7.23	5.16	4.29	50	µg/m ³	24hrs
PM _{2.5}	4.14	3.78	2.65	2.30	25	µg/m ³	24hrs
CO	0.00011	0.00025	0.00006	0.00008	9	ppm	8hrs
CO ₂	345.50	347.24	424.04	491.51	5000	ppm	8hrs
SO ₂	0.18	0.22	0.15	0.13	20	µg/m ³	24hrs
NO ₂	13.16	15.85	10.81	5.92	200	µg/m ³	1hrs

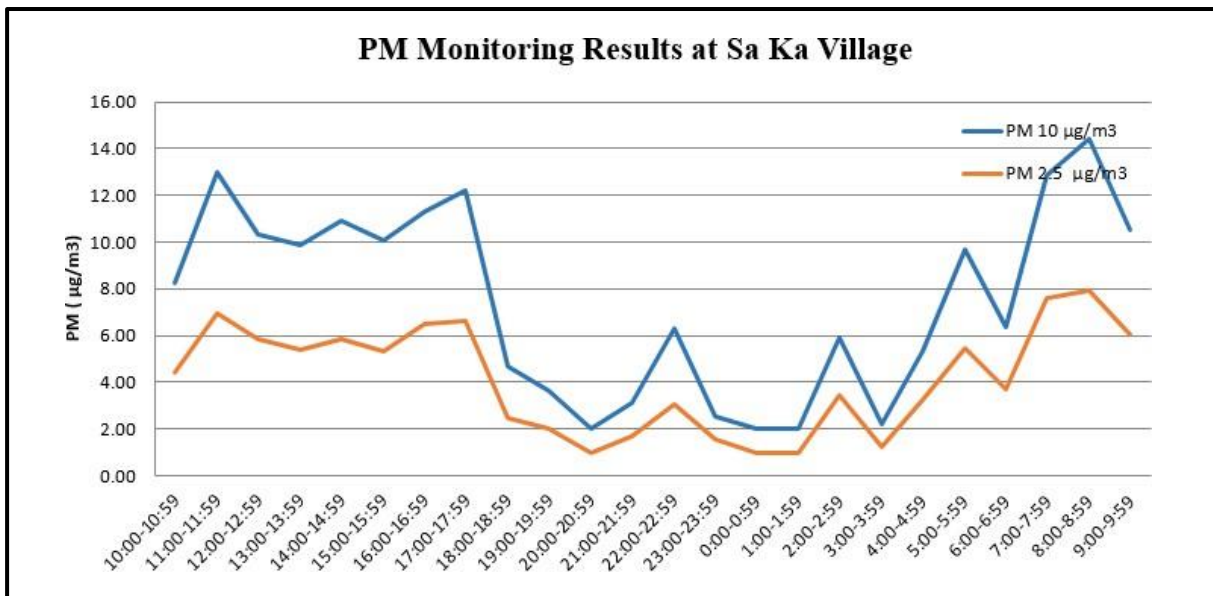


Figure 4. 1 PM Monitoring Results at Sa Ka Village

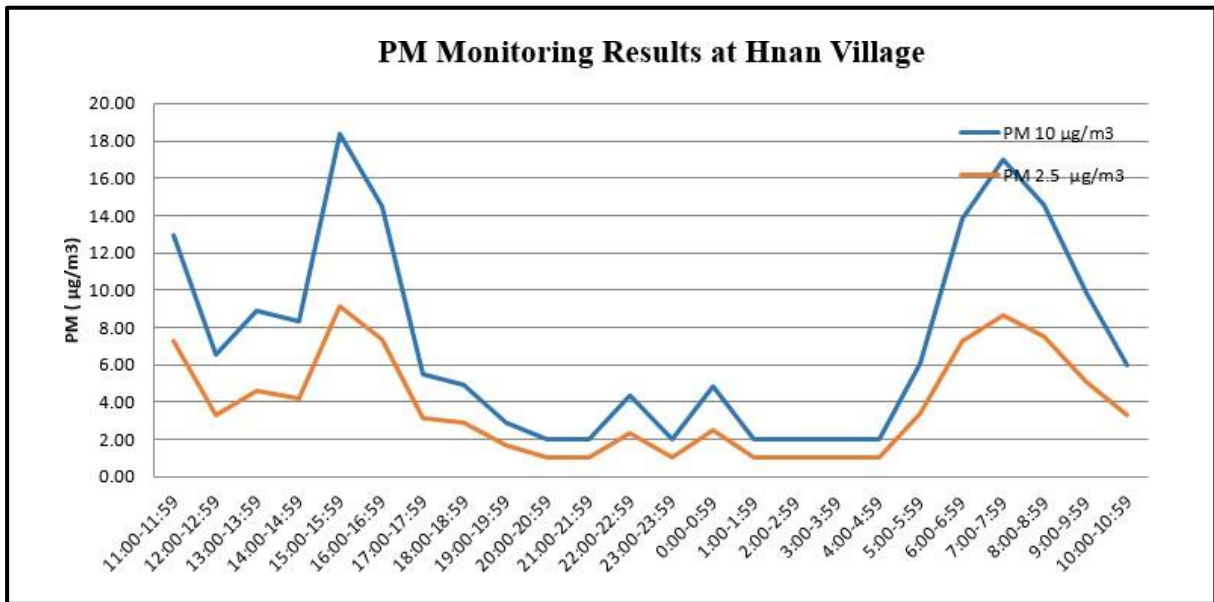


Figure 4. 2 PM Monitoring Results at Hnan Ywa Village

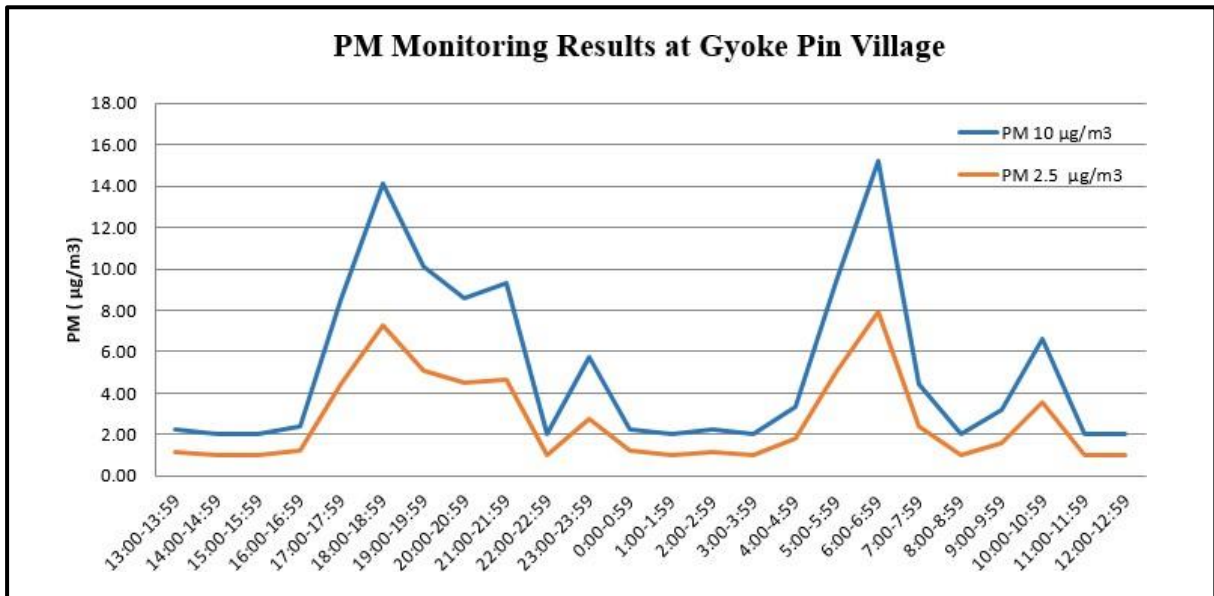


Figure 4. 3 PM Monitoring Results at Gyoke Pin Village

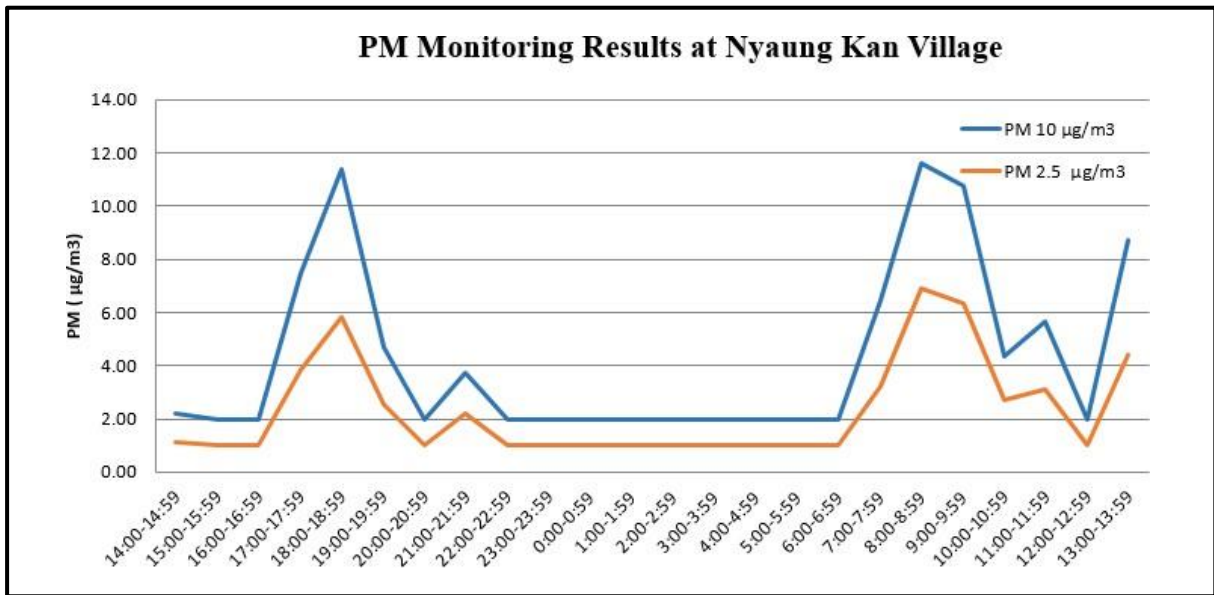


Figure 4. 4 PM Monitoring Results at Nyaung Kan Village

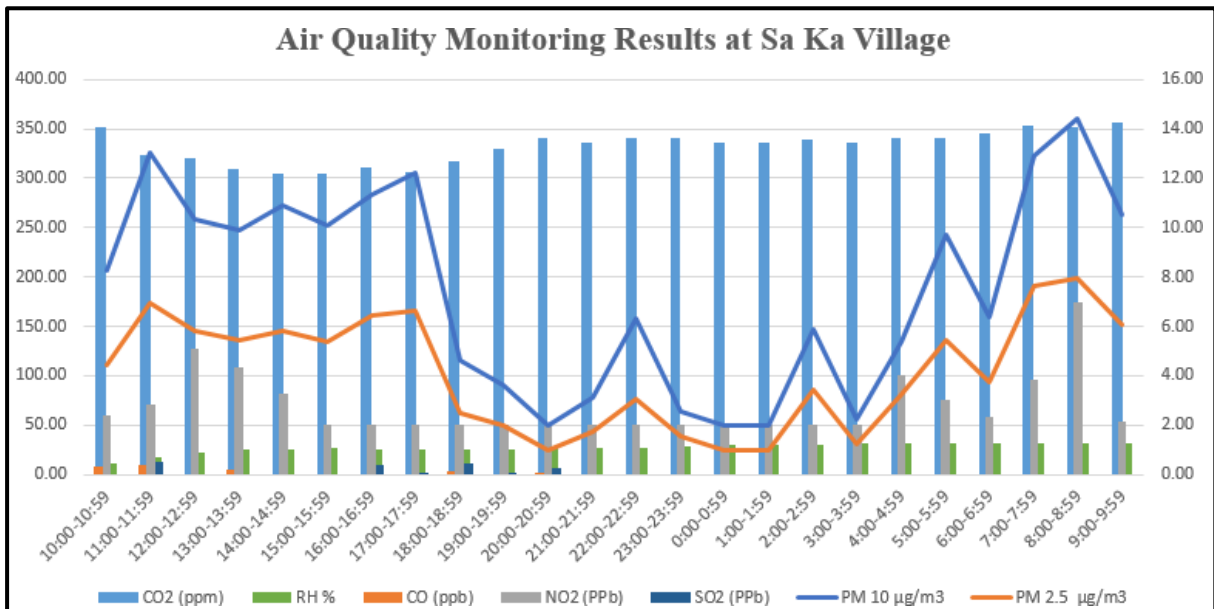


Figure 4. 5 Fluctuation of Air Pollutants during dial cycle (Sa Ka Village)

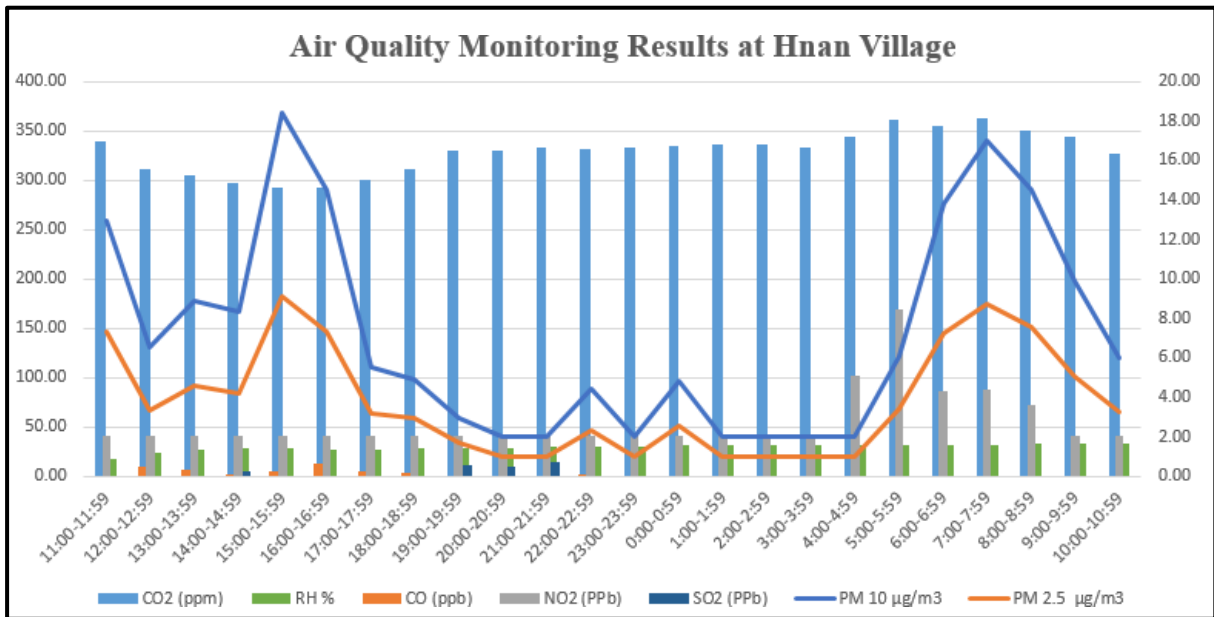


Figure 4. 6 Fluctuation of Air Pollutants during dial cycle (Hnan Ywa Village)

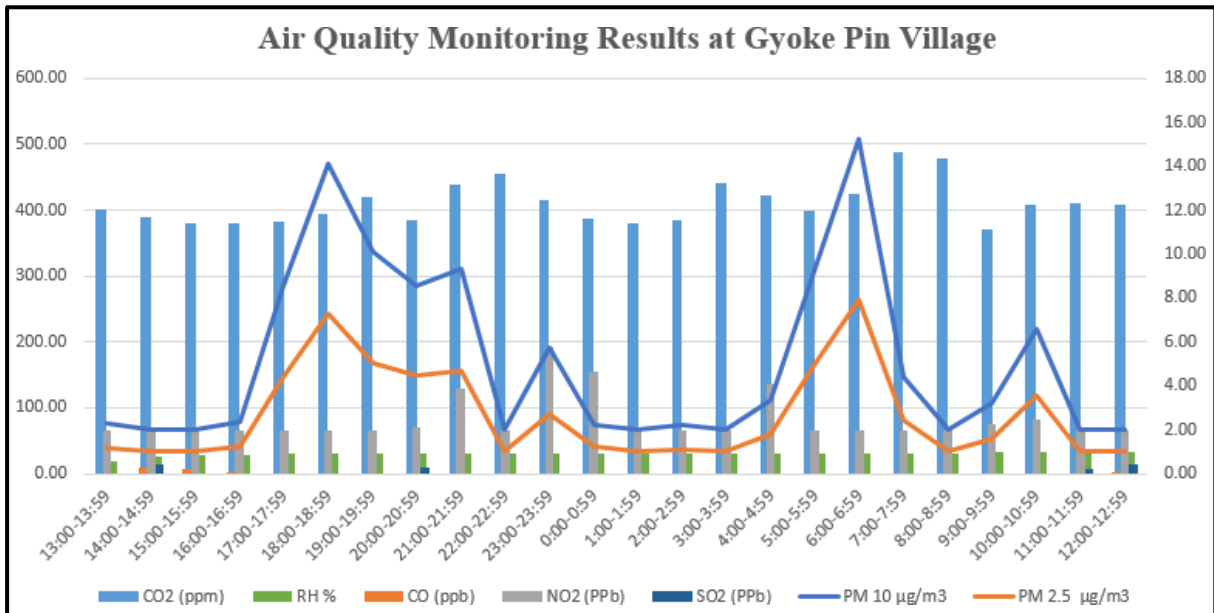


Figure 4. 7 Fluctuation of Air Pollutants during dial cycle (Gyoke Pin Village)

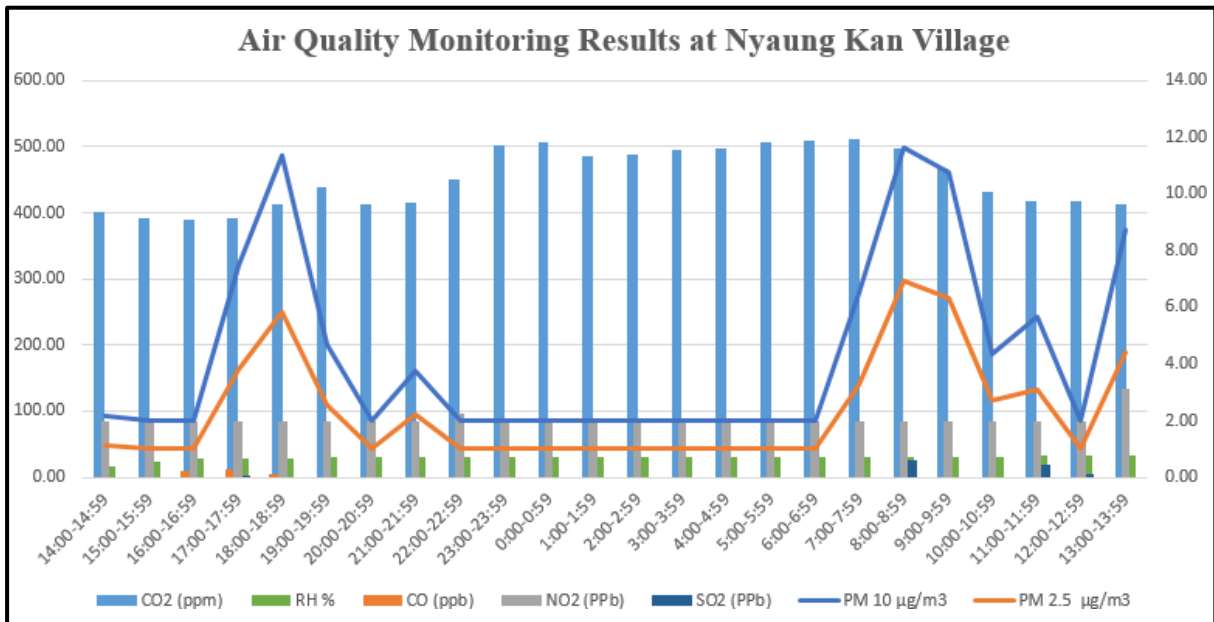


Figure 4. 8 Fluctuation of Air Pollutants during dial cycle (Nyaung Kan Village)

Detail results with one-hour interval of pollutants are shown in **Table 4. 2** to **Table 4. 5**. All results are under the Myanmar National Environmental Quality (emission) Guidelines. So, Sembcorp Myingyan Power Plant is acceptable for environment.

Table 4. 2 Air Monitoring Results (Sa Ka Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
05.03.2023	10:00-10:59	Average	351.30	0.30	2.37	8.23	4.42	11.45	0.00
05.03.2023	11:00-11:59	Average	324.02	0.35	2.83	13.02	6.97	17.10	0.52
05.03.2023	12:00-12:59	Average	320.22	0.00	5.12	10.32	5.82	21.90	0.00
05.03.2023	13:00-13:59	Average	310.07	0.22	4.33	9.87	5.42	24.58	0.00
05.03.2023	14:00-14:59	Average	304.30	0.00	3.27	10.90	5.83	26.00	0.00
05.03.2023	15:00-15:59	Average	305.32	0.00	2.00	10.05	5.35	26.08	0.00
05.03.2023	16:00-16:59	Average	310.77	0.00	2.00	11.32	6.47	25.65	0.37
05.03.2023	17:00-17:59	Average	306.22	0.00	2.00	12.18	6.62	25.32	0.07
05.03.2023	18:00-18:59	Average	317.18	0.15	2.00	4.65	2.50	25.00	0.42
05.03.2023	19:00-19:59	Average	328.98	0.00	2.00	3.63	1.98	25.75	0.03
05.03.2023	20:00-20:59	Average	340.15	0.08	2.00	2.00	1.00	26.52	0.23
05.03.2023	21:00-21:59	Average	336.37	0.00	2.00	3.13	1.72	27.00	0.00
05.03.2023	22:00-22:59	Average	341.27	0.00	2.00	6.32	3.07	27.13	0.00
05.03.2023	23:00-23:59	Average	340.45	0.00	2.00	2.57	1.57	28.32	0.00
06.03.2023	0:00-0:59	Average	335.43	0.00	2.00	2.00	1.00	29.25	0.00
06.03.2023	1:00-1:59	Average	335.98	0.00	2.00	2.00	1.00	30.00	0.00
06.03.2023	2:00-2:59	Average	339.77	0.00	2.00	5.88	3.42	30.70	0.00
06.03.2023	3:00-3:59	Average	335.90	0.00	2.00	2.23	1.23	31.00	0.00
06.03.2023	4:00-4:59	Average	340.03	0.00	4.03	5.35	3.23	31.13	0.00
06.03.2023	5:00-5:59	Average	341.28	0.00	3.02	9.68	5.43	31.00	0.00
06.03.2023	6:00-6:59	Average	344.77	0.00	2.35	6.37	3.72	31.00	0.00
06.03.2023	7:00-7:59	Average	353.25	0.00	3.85	12.88	7.62	31.00	0.00
06.03.2023	8:00-8:59	Average	352.22	0.00	7.00	14.43	7.92	31.68	0.00
06.03.2023	9:00-9:59	Average	356.82	0.00	2.15	10.52	6.03	32.00	0.00
Average			332.17	0.05	2.76	7.48	4.14	26.94	0.07
1 hour Minimum			304.30	0.00	2.00	2.00	1.00	11.45	0.00
1 hour Maximum			356.82	0.35	7.00	14.43	7.92	32.00	0.52

Table 4. 3 Air Monitoring Results (Hnan Ywa Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
06.03.2023	11:00-11:59	Average	339.13	0.00	2.00	12.93	7.28	16.58	0.00
06.03.2023	12:00-12:59	Average	310.92	0.47	2.00	6.52	3.33	23.68	0.00
06.03.2023	13:00-13:59	Average	305.07	0.28	2.00	8.87	4.57	27.22	0.00
06.03.2023	14:00-14:59	Average	296.68	0.05	2.00	8.33	4.17	28.00	0.27
06.03.2023	15:00-15:59	Average	292.48	0.23	2.00	18.38	9.12	27.75	0.00
06.03.2023	16:00-16:59	Average	292.52	0.62	2.00	14.52	7.32	27.28	0.00
06.03.2023	17:00-17:59	Average	300.78	0.25	2.00	5.52	3.15	27.22	0.00
06.03.2023	18:00-18:59	Average	311.75	0.13	2.00	4.92	2.92	28.00	0.00
06.03.2023	19:00-19:59	Average	330.38	0.00	2.00	2.93	1.72	28.73	0.55
06.03.2023	20:00-20:59	Average	330.57	0.00	2.00	2.00	1.00	29.00	0.50
06.03.2023	21:00-21:59	Average	332.75	0.00	2.00	2.00	1.00	29.68	0.70
06.03.2023	22:00-22:59	Average	331.73	0.12	2.00	4.38	2.32	30.00	0.00
06.03.2023	23:00-23:59	Average	333.68	0.00	2.00	2.00	1.00	30.00	0.00
07.03.2023	0:00-0:59	Average	334.18	0.00	2.00	4.82	2.53	30.98	0.00
07.03.2023	1:00-1:59	Average	335.52	0.00	2.00	2.00	1.00	31.12	0.00
07.03.2023	2:00-2:59	Average	335.83	0.00	2.00	2.00	1.00	32.00	0.00
07.03.2023	3:00-3:59	Average	333.65	0.00	2.02	2.00	1.00	32.00	0.00
07.03.2023	4:00-4:59	Average	343.88	0.00	5.08	2.00	1.00	32.00	0.00
07.03.2023	5:00-5:59	Average	361.80	0.00	8.43	6.08	3.38	31.75	0.00
07.03.2023	6:00-6:59	Average	355.07	0.00	4.30	13.83	7.23	31.00	0.00
07.03.2023	7:00-7:59	Average	362.80	0.00	4.38	17.02	8.68	31.12	0.00
07.03.2023	8:00-8:59	Average	349.78	0.00	3.63	14.53	7.53	32.35	0.00
07.03.2023	9:00-9:59	Average	343.97	0.00	2.00	9.88	5.08	33.00	0.00
07.03.2023	10:00-10:59	Average	327.00	0.00	2.00	5.97	3.27	33.00	0.00
Average			328.83	0.09	2.66	7.23	3.78	29.31	0.08
1 hour Minimum			292.48	0.00	2.00	2.00	1.00	16.58	0.00
1 hour Maximum			362.80	0.62	8.43	18.38	9.12	33.00	0.70

Table 4. 4 Air Monitoring Results (Gyoke Pin Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
07.03.2023	13:00-13:59	Average	400.27	0.00	2.00	2.27	1.13	19.10	0.00
07.03.2023	14:00-14:59	Average	388.55	0.27	2.00	2.00	1.00	25.85	0.42
07.03.2023	15:00-15:59	Average	380.53	0.18	2.00	2.00	1.00	28.27	0.00
07.03.2023	16:00-16:59	Average	381.22	0.05	2.00	2.38	1.22	29.00	0.00
07.03.2023	17:00-17:59	Average	383.47	0.00	2.00	8.55	4.43	29.90	0.00
07.03.2023	18:00-18:59	Average	394.05	0.00	2.00	14.13	7.27	30.00	0.00
07.03.2023	19:00-19:59	Average	418.92	0.00	2.00	10.08	5.07	30.00	0.00
07.03.2023	20:00-20:59	Average	384.57	0.00	2.10	8.58	4.48	30.05	0.28
07.03.2023	21:00-21:59	Average	439.63	0.00	3.87	9.35	4.67	30.57	0.00
07.03.2023	22:00-22:59	Average	454.40	0.00	2.00	2.00	1.00	30.70	0.00
07.03.2023	23:00-23:59	Average	414.87	0.00	5.75	5.73	2.73	30.13	0.00
08.03.2023	0:00-0:59	Average	386.20	0.00	4.67	2.22	1.22	30.00	0.00
08.03.2023	1:00-1:59	Average	378.97	0.00	2.00	2.00	1.00	30.00	0.00
08.03.2023	2:00-2:59	Average	385.43	0.00	2.00	2.23	1.12	30.00	0.00
08.03.2023	3:00-3:59	Average	441.15	0.00	2.00	2.00	1.00	30.00	0.00
08.03.2023	4:00-4:59	Average	423.13	0.00	4.08	3.37	1.78	30.00	0.00
08.03.2023	5:00-5:59	Average	399.20	0.00	2.00	9.38	5.02	30.00	0.00
08.03.2023	6:00-6:59	Average	425.27	0.00	2.00	15.25	7.92	30.00	0.00
08.03.2023	7:00-7:59	Average	488.73	0.00	2.00	4.40	2.42	30.38	0.00
08.03.2023	8:00-8:59	Average	479.35	0.00	2.00	2.00	1.00	31.55	0.00
08.03.2023	9:00-9:59	Average	371.70	0.00	2.28	3.22	1.62	32.00	0.00
08.03.2023	10:00-10:59	Average	409.35	0.00	2.48	6.62	3.55	32.93	0.00
08.03.2023	11:00-11:59	Average	409.62	0.00	2.00	2.00	1.00	32.87	0.20
08.03.2023	12:00-12:59	Average	409.10	0.03	2.00	2.00	1.00	32.15	0.45
Average			410.32	0.02	2.47	5.16	2.65	29.81	0.06
1 hour Minimum			371.70	0.00	2.00	2.00	1.00	19.10	0.00
1 hour Maximum			488.73	0.27	5.75	15.25	7.92	32.93	0.45

Table 4. 5 Air Monitoring Results (Nyaung Kan Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
08.03.2023	14:00-14:59	Average	400.17	0.00	2.00	2.18	1.10	17.00	0.00
08.03.2023	15:00-15:59	Average	390.98	0.00	2.00	2.00	1.00	23.87	0.00
08.03.2023	16:00-16:59	Average	390.40	0.22	2.00	2.00	1.00	27.43	0.00
08.03.2023	17:00-17:59	Average	392.87	0.28	2.00	7.48	3.82	28.93	0.07
08.03.2023	18:00-18:59	Average	412.50	0.13	2.00	11.37	5.85	29.18	0.00
08.03.2023	19:00-19:59	Average	439.07	0.00	2.00	4.67	2.57	30.00	0.00
08.03.2023	20:00-20:59	Average	413.38	0.00	2.00	2.00	1.00	30.00	0.00
08.03.2023	21:00-21:59	Average	415.80	0.00	2.00	3.75	2.22	30.00	0.00
08.03.2023	22:00-22:59	Average	449.52	0.00	2.27	2.00	1.00	30.55	0.00
08.03.2023	23:00-23:59	Average	502.03	0.00	2.00	2.00	1.00	31.00	0.00
09.03.2023	0:00-0:59	Average	507.25	0.00	2.00	2.00	1.00	30.72	0.00
09.03.2023	1:00-1:59	Average	486.43	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	2:00-2:59	Average	488.32	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	3:00-3:59	Average	494.07	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	4:00-4:59	Average	497.68	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	5:00-5:59	Average	506.82	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	6:00-6:59	Average	509.47	0.00	2.00	2.00	1.00	30.00	0.00
09.03.2023	7:00-7:59	Average	511.72	0.00	2.00	6.47	3.23	30.00	0.00
09.03.2023	8:00-8:59	Average	497.67	0.00	2.00	11.63	6.90	30.00	0.58
09.03.2023	9:00-9:59	Average	467.30	0.00	2.00	10.73	6.35	30.20	0.00
09.03.2023	10:00-10:59	Average	430.83	0.00	2.00	4.37	2.73	31.15	0.00
09.03.2023	11:00-11:59	Average	418.12	0.00	2.00	5.68	3.12	32.43	0.42
09.03.2023	12:00-12:59	Average	417.40	0.00	2.00	2.00	1.00	32.82	0.13
09.03.2023	13:00-13:59	Average	412.37	0.00	3.15	8.72	4.42	33.00	0.00
Average			452.17	0.03	2.06	4.29	2.30	29.51	0.05
1 hour Minimum			390.40	0.00	2.00	2.00	1.00	17.00	0.00
1 hour Maximum			511.72	0.28	3.15	11.63	6.90	33.00	0.58

4.2 Wind Speed and Direction

The following figure describes the wind speed and wind direction of the proposed project site on, 05 March 2023 to 09 March 2023 respectively. According to the data, the wind direction is following **Figure 4.9 to Figure 4.16.**

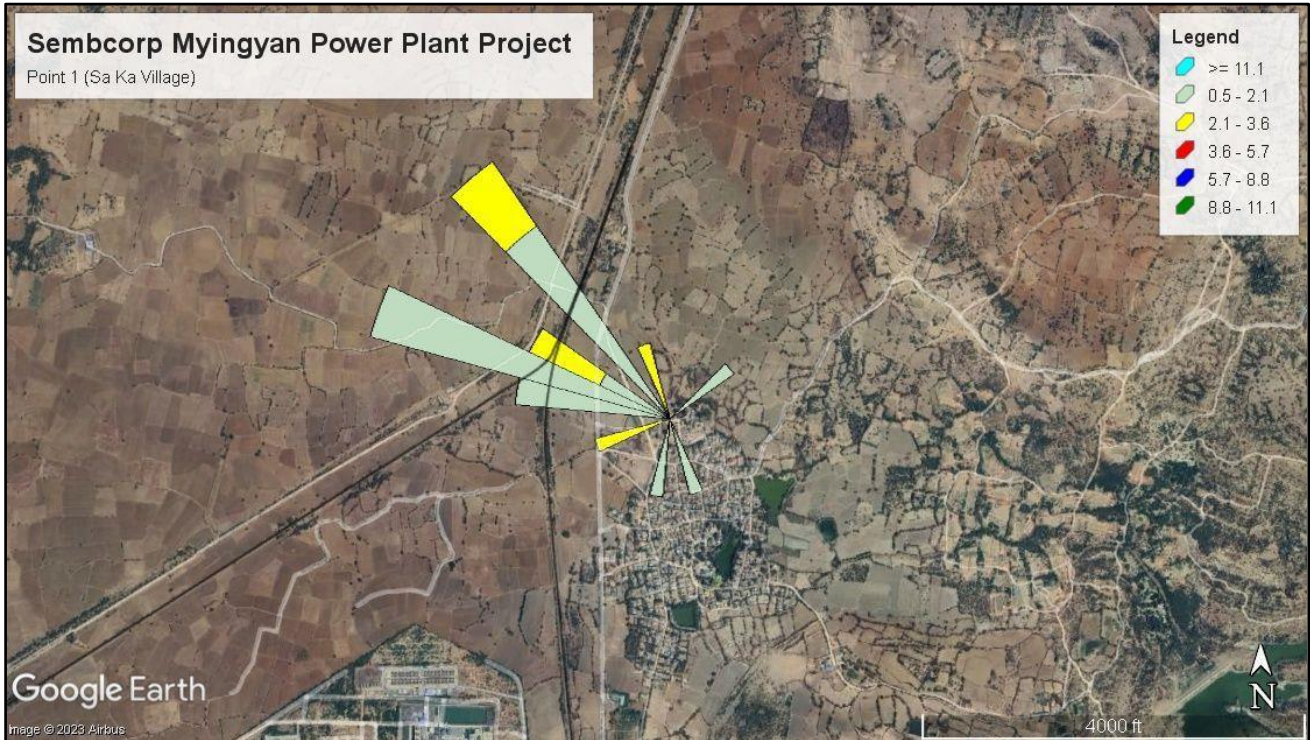


Figure 4.9 Wind Speed and Wind Direction (Blowing From) at Sa Ka Village (ASR4)

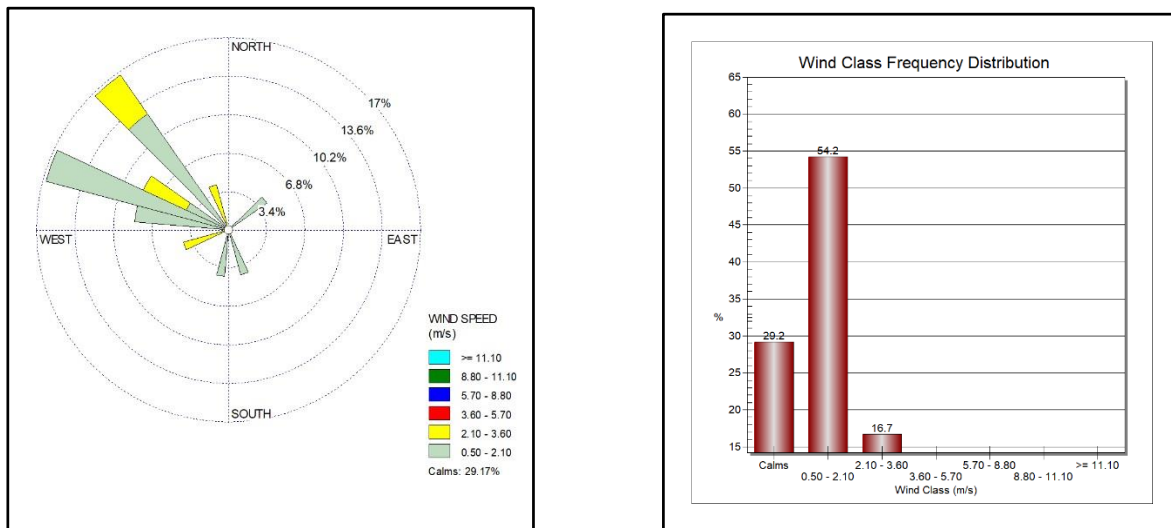


Figure 4.10 Wind Class Frequency Distribution at Sa Ka Village (ASR4)



Figure 4. 11 Wind Speed and Wind Direction (Blowing From) at Hnan Ywa Village (ASR3)

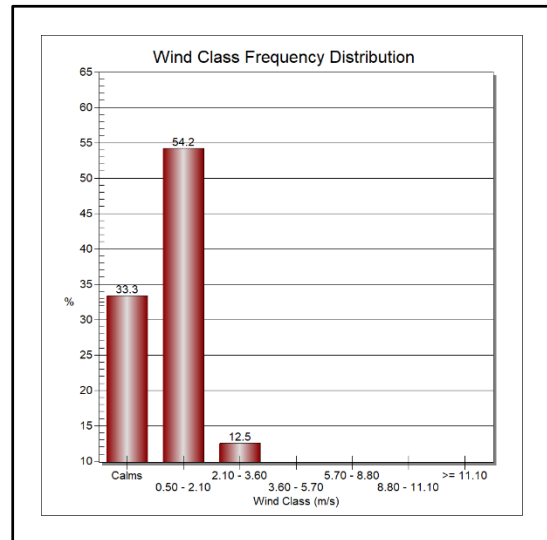
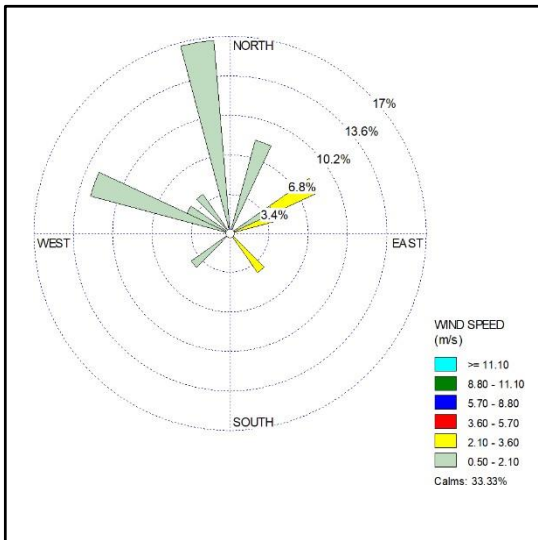


Figure 4. 12 Wind Class Frequency Distribution at Hnan Ywa Village (ASR3)



Figure 4. 13 Wind Speed and Wind Direction (Blowing From) at Gyoke Pin Village (ASR5)

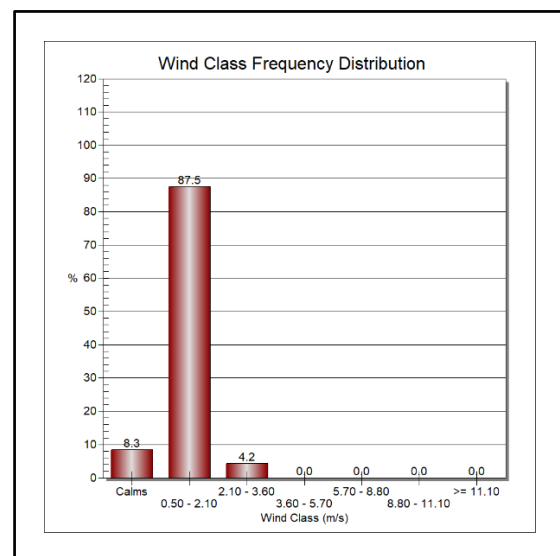
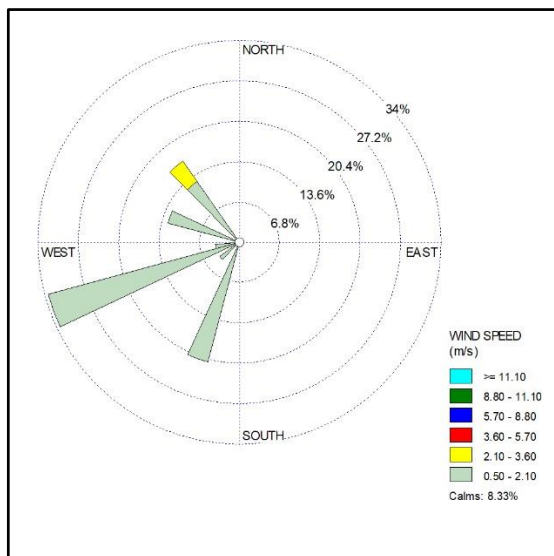


Figure 4. 14 Wind Class Frequency Distribution at Gyoke Pin Village (ASR5)

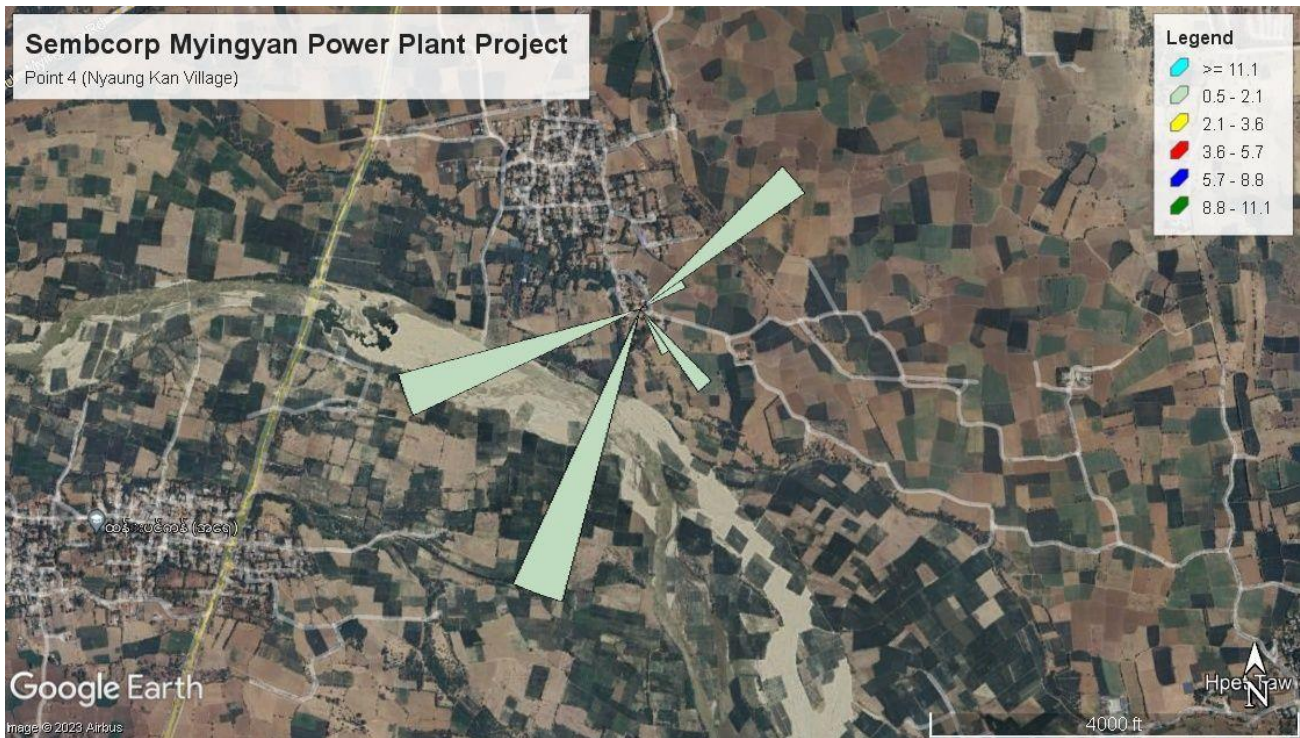


Figure 4. 15 Wind Speed and Wind Direction (Blowing From) at Nyaung Kan Village (ASR14)

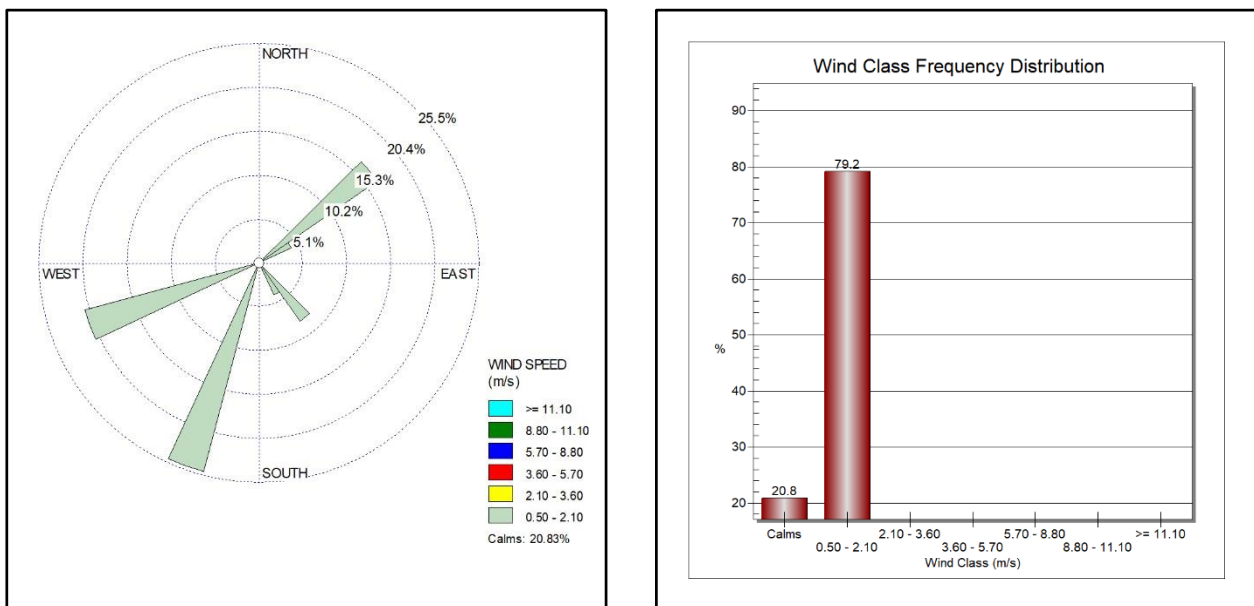


Figure 4. 16 Wind Class Frequency Distribution at Nyaung Kan Village (ASR14)

4.3 Ambient Noise

Ambient noise level for the proposed project was measured with Digital Sound Level Meter at the project site. The noise level measurement is conducted at Sembcorp Myingyan Power points: these points are nearly sembcorp myingyan power plant and air monitoring point at Sa Ka village on 05 March 2023 to 07 March 2023. Measuring period is 24 hours continuously. The observed values are described in **Table 4. 6 to Table 4. 9** and the following figures are noise level measurement at the proposed project.

Table 4. 6 Observed Values of Noise Level Measurement at near Sembcorp Myingyan Power Plant

No.	Date	Time	Observed Mean Value (Source)	Weight	Day/Night	Average
1	06.03.2023	7:00:13-7:59:13	55.15	A	Day	55.16
2	06.03.2023	8:00:13-8:59:13	58.15	A	Day	
3	06.03.2023	9:00:13-9:59:13	62.06	A	Day	
4	05.03.2023	10:00:13-10:59:13	52.60	A	Day	
5	05.03.2023	11:00:13-11:59:13	51.83	A	Day	
6	05.03.2023	12:00:13-12:59:13	52.10	A	Day	
7	05.03.2023	13:00:13-13:59:13	49.99	A	Day	
8	05.03.2023	14:00:13-14:59:13	51.48	A	Day	
9	05.03.2023	15:00:13-15:59:13	48.36	A	Day	
10	05.03.2023	16:00:13-16:59:13	52.53	A	Day	
11	05.03.2023	17:00:13-17:59:13	56.28	A	Day	
12	05.03.2023	18:00:13-18:59:13	63.47	A	Day	
13	05.03.2023	19:00:13-19:59:13	57.31	A	Day	
14	05.03.2023	20:00:13-20:59:13	56.05	A	Day	
15	05.03.2023	21:00:13-21:59:13	60.03	A	Day	58.62
16	05.03.2023	22:00:13-22:59:13	59.27	A	Night	
17	05.03.2023	23:00:13-23:59:13	58.32	A	Night	
18	06.03.2023	0:00:13-0:59:13	55.89	A	Night	
19	06.03.2023	1:00:13-1:59:13	55.89	A	Night	
20	06.03.2023	2:00:13-2:59:13	56.96	A	Night	
21	06.03.2023	3:00:13-3:59:13	58.70	A	Night	
22	06.03.2023	4:00:13-4:59:13	61.75	A	Night	
23	06.03.2023	5:00:13-5:59:13	61.24	A	Night	
24	06.03.2023	6:00:13-6:59:13	59.54	A	Night	
Average			56.46			

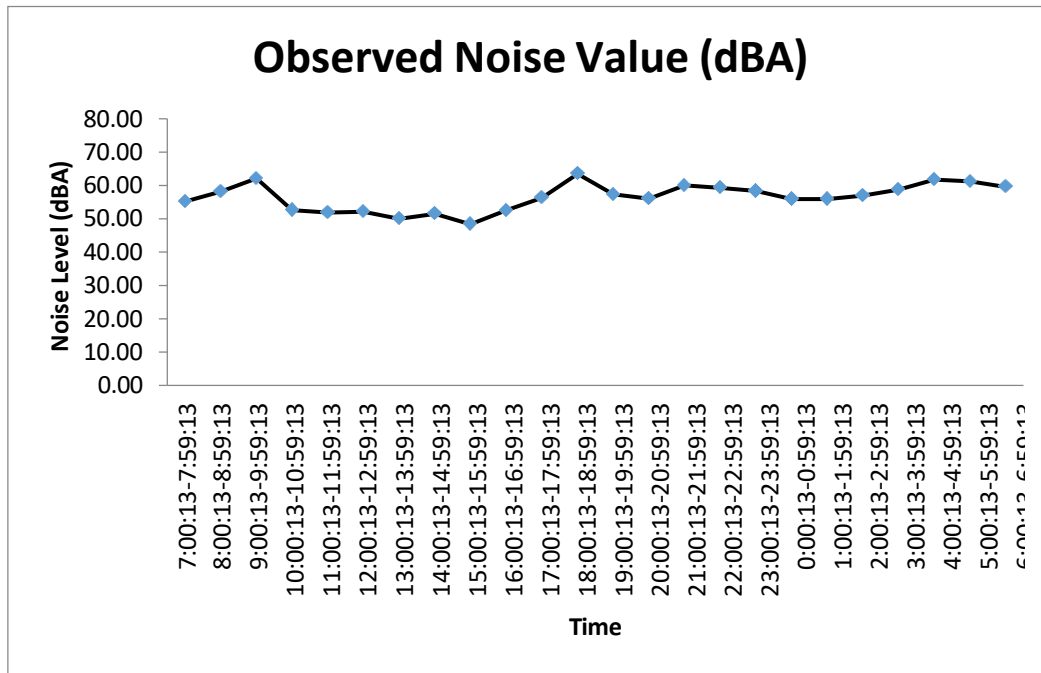


Figure 4. 17 Noise Level at near Sembcorp Myingyan Power Plant

Table 4. 7 Observed Values of Noise Level Measurement at Sa Ka Village

No.	Date	Time	Observed Mean Value (Source)	Weight	Day/Night	Average
1	07.03.2023	7:00:13-7:59:13	41.07	A	Day	49.77
2	07.03.2023	8:00:13-8:59:13	41.88	A	Day	
3	07.03.2023	9:00:13-9:59:13	47.14	A	Day	
4	07.03.2023	10:00:13-10:59:13	46.35	A	Day	
5	06.03.2023	11:00:13-11:59:13	54.00	A	Day	
6	06.03.2023	12:00:13-12:59:13	54.37	A	Day	
7	06.03.2023	13:00:13-13:59:13	59.90	A	Day	
8	06.03.2023	14:00:13-14:59:13	57.29	A	Day	
9	06.03.2023	15:00:13-15:59:13	56.66	A	Day	
10	06.03.2023	16:00:13-16:59:13	53.88	A	Day	
11	06.03.2023	17:00:13-17:59:13	59.04	A	Day	
12	06.03.2023	18:00:13-18:59:13	42.81	A	Day	
13	06.03.2023	19:00:13-19:59:13	45.62	A	Day	
14	06.03.2023	20:00:13-20:59:13	41.20	A	Day	
15	06.03.2023	21:00:13-21:59:13	45.32	A	Day	
16	06.03.2023	22:00:13-22:59:13	46.18	A	Night	40.80
17	06.03.2023	23:00:13-23:59:13	40.24	A	Night	
18	07.03.2023	0:00:13-0:59:13	39.58	A	Night	
19	07.03.2023	1:00:13-1:59:13	38.32	A	Night	
20	07.03.2023	2:00:13-2:59:13	41.77	A	Night	

21	07.03.2023	3:00:13-3:59:13	40.52	A	Night
22	07.03.2023	4:00:13-4:59:13	40.10	A	Night
23	07.03.2023	5:00:13-5:59:13	40.45	A	Night
24	07.03.2023	6:00:13-6:59:13	40.08	A	Night
Average			46.41		

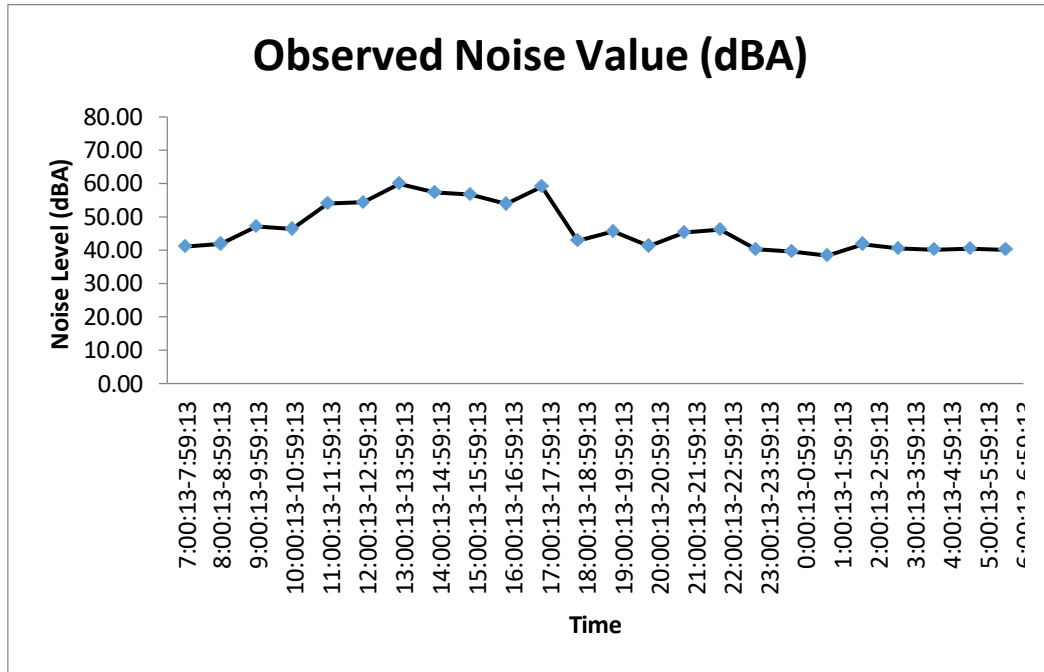


Figure 4. 18 Noise Level at Sa Ka Village

Table 4. 8 Observed Ambient Noise level Results from Myingyan Power Plant

Point	Sembcorp Myingyan Power Plant	
	Day Time	Night Time
Sembcorp Myingyan Power Plant	55.16	58.62
Guideline Values	70	70

Table 4. 9 Observed Ambient Noise level Results from Sa Ka Village

Point	Sembcorp Myingyan Power Plant	
	Day Time	Night Time
Sa Ka Village	49.77	40.80
Guideline Values	55	45

The observed values are compared with the National Environmental Quality (Emission) Guidelines as shown in **Table 4. 10** which indicates the separate level for residential and industrial points.

Table 4. 10 National Environmental Quality (Emission) Guidelines Values for Noise Level

Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public Holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public Holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

The observed noise values of the proposed project for daytime at Sembcorp myingyan power plant and Sa Ka village are 55.16 dB (A) and 49.77 dB (A). The observed noise values of the proposed project for night time at Sembcorp myingyan power plant and Sa Ka village are 58.62 dB (A) and 40.80 dB (A). The proposed project is located adjacent to the residential and commercial area. The observed values of daytime and nighttime at sembcorp myingyan power plant are under the National Environmental Quality (Emission) Guidelines.

APPENDIX A

Description of Haz-scanner (EPAS)

HAZ-SCANNER

Wireless Environmental Perimeter Air Station **EPAS**

- Direct reading
- Build your own station with up to 14 simultaneous air measurements including U.S. EPA criteria pollutants
 - Standard configuration measures 5 parameters including PM10 or TSP particulates, NO_x, CO, temperature, and relative humidity
 - Add one or all optional interchangeable sensors with upgradeable software and/or EPAS-specific meters (up to 9 sensors/meters total) as listed on the reverse side. Choose from additional sensors for toxic gas (including methane), hydrocarbons, VOCs, and biological/chemical agents and EPAS-specific meters for solar radiance/UV or IR, barometric pressure, sound/noise, atomic radiation, ELF radiation, rain, and wind speed/direction
 - Available analog input port for alternative meter
 - Interchangeable size-selective impactors are available for PM1.0, PM2.5, or PM4.0 (close approximation of respirable)
 - Can monitor up to 2 PM sizes simultaneously
- Real-time readings, datalogging capabilities
 - Optional wireless data transmission up to 5 miles
 - Optional Ethernet internet connection for 24/7 data reporting
- Easily portable and deployable
- Battery operated
- Network up to 8 EPAS to one central PC or Mac
- Easy-to-use graph and reporting software compatible with PC and Mac

The portable HAZ-SCANNER™ EPAS wireless environmental perimeter air station is easily deployed as an ambient air quality monitor to scan, measure, and document critical EPA criteria pollutants including nitrogen dioxide, carbon monoxide, sulfur dioxide, ozone, carbon dioxide, particulates, VOCs, and more. The EPAS is the only instrument on the market with sensors offering simultaneous monitoring of two different sizes of PM. The EPAS provides direct readings in real time with datalogging capabilities. The graph and reporting software is compatible with PC and Mac. Contact an SKC product specialist to build your EPAS including up to 14 simultaneous critical air measurements in one battery-operated instrument.

HAZ-SCANNER Wireless EPAS Applications

- Ambient air quality monitoring
- Hazardous incident response
- Waste site remediation monitoring
- Military/homeland security
- Perimeter monitoring
- Near roadway monitoring

Go to www.skcin.com/prod/Haz-Scanner.asp for more information.



Measure up to 14 critical air parameters simultaneously with HAZ-SCANNER EPAS.



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HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station



HAZ-SCANNER EPAS shown with optional solar panels

Performance Profile

The HAZ-SCANNER EPAS is optimized for ambient air applications; custom calibration for specific ranges or applications is available upon request.

Display	LCD real time
Operation	2-key splash-proof membrane switch
Power	12-V Absorption Glass Mat (AGM) rechargeable battery, 100-240 V AC, or optional solar panel
Display Measurements	Max, Min, TWA, STBL
Recording Time	1 sec to 21 weeks
Sampling Rate	1 sec, 1 min, 10 min, 1 hr, adjustable
Data Storage	256, 512 data points
Sampling Pump	1.0 to 3.0 L/min
Digital Output	RS-232 (PC), RS-422 (Max)
Software	PC or Mac
Enclosure (weather-proof case)	8 x 14 x 18 in (15.2 x 25.6 x 25.4 cm)
Weight	12 lbs (5.4 kg)
Operating Temperature	23 to 122 F (-5 to 50 C)
Storage Temperature	-40 to 140 F (-40 to 60 C)
Humidity	95% non-condensing (use mist heater)
Wireless Radio Modes	900 MHz (U.S.), 900 MHz (Europe) up to 5 miles - line of sight (optional)
Auxiliary Analog Input	0 to 2.5 VDC (1 channel for alternative meter)

Configure an EPAS for Up to 14 Simultaneous Measurements

The standard HAZ-SCANNER EPAS includes the monitor (calibrated for ambient air applications) with sensors/meters for PM10 or TSP, VOCs, temperature, humidity, and wind speed/direction in a NEMA 4 enclosure, acid gas scrubber, internal battery, universal 110-240 V AC battery charger, software, cables, and CD with instructions.

Configure the monitor with additional sensors/meters — up to 4 optional interchangeable sensors with upgradable software and/or up to 4 EPAS-specific meters (listed below). See page 3 for specifications. *Specify sensors and meters when ordering.*

- PM10, 2.5, or 4.0
- Ammonia (EC)
- Carbon Dioxide (NDIR)
- Carbon Monoxide (EC)
- Chlorine (EC)
- Ethylene Oxide (EL)
- Hydrocarbon (methane-specific, EC)
- Hydrocarbons (EC)
- Hydrogen Chloride (EL)
- Hydrogen Cyanide (EC)
- Hydrogen Sulfide (EC)
- Nitric Oxide (EC)
- Nitrogen Dioxide
- Oxygen
- Ozone
- Phosphine (EL)
- Sulfur Dioxide
- Rain
- Solar Radiance
- Sound and Noise
- Atomic Radiation
- ELF Radiation
- Barometric Pressure
- Dew Point Temperature
- Wet Bulb Temperature

Contact SKC to build an EPAS with available sensors/meters/calibration for your application!

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcin.com/warranty.asp>.



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HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station

HAZ-SCANNER EPAS Sensor/Meter Specifications

Parameter	Sensor*	Measurement/ Concentration Range	Accuracy	Minimum Resolution	Display Resolution	Additional Information
Particulates	90° infrared light scattering	0 to 5000 µg/m ³	Greater of $\pm 10\%$ of reading or 2% full scale	10 µg/m ³	1 µg/m ³	Measures particle sizes: 10 µm or TSP (standard) or 1, 2.5, or 4 µm (optional) in the 0.1 to 100 µm size range
VOCs	PID (10.6 eV)	0 to 50,000 ppb (0 to 50 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Minimum detection level is 0.01 ppm. Standard sensor
Toxic Gas: NH ₃ - Ammonia	Gas-sensing semiconductor (GSS) technology	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: CO ₂ - Carbon Dioxide	NDIR	0 to 5000 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	50 ppm	1 ppm	Optional sensor
Toxic Gas: CO - Carbon Monoxide	Electrochemical	0 to 10,000 ppb (0 to 10 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	20 ppb	1 ppb	Optional sensor
Toxic Gas: Cl ₂ - Chlorine	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: (C ₂ H ₄ O) - Ethylene Oxide	Electrochemical	0 to 1500 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	8 ppm	1 ppm	Optional sensor
Toxic Gas: Hydrocarbon, CH ₄ - Methane-specific	NDIR	0 to 1% Vol., 0 to 10,000 ppm, 0 to 20% LEL	Greater of $\pm 10\%$ of reading or 2% full scale	± 50 ppm or 0.1% LEL	50 ppm/ 0.1% LEL	Optional sensor
Toxic Gas: (Non-methane) Hydrocarbons (HC)	NDIR	Calibrated for 0 to 20% LEL of selected gas	Greater of $\pm 10\%$ of reading or 2% full scale	± 50 ppm/ 0.1% LEL	50 ppm/ 0.1% LEL	Optional sensor - specify gas type when ordering: ethane, propane, butane, hexane, ethane, ethylene, or ethylene oxide
Toxic Gas: HCl - Hydrogen Chloride	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: HCN - Hydrogen Cyanide	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: H ₂ S - Hydrogen Sulfide	Electrochemical	0 to 25 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.15 ppm	0.1 ppm	Optional sensor
Toxic Gas: NO - Nitric Oxide	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: NO ₂ - Nitrogen Dioxide	Electrochemical	0 to 5000 ppb (0 to 5 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Optional sensor
Toxic Gas: O ₂ - Oxygen	Electrochemical	0 to 80% Vol	Greater of $\pm 10\%$ of reading or 2% full scale	0.6%	0.1%	Optional sensor
Toxic Gas: O ₃ - Ozone	Gas-sensing semiconductor (GSS) technology	0 to 150 ppb (0 to 0.15 ppm), 0 to 500 ppb (0 to 0.5 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	1 ppb	1 ppb	Optional sensor
Toxic Gas: PH ₃ - Phosphine	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: SO ₂ - Sulfur Dioxide	Electrochemical	0 to 5000 ppb (0 to 5 ppm) for ambient applications	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Optional sensor

* Not approved for intrinsically safe applications; do not use in explosive gas environments.

Specifications continued on next page 



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HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station

HAZ-SCANNER EPAS Sensor/Meter Specifications (con't)

Parameter	Sensor*	Measurement/ Concentration Range	Accuracy	Minimum Resolution	Display Resolution	Additional Information
Rain Fall/ Precipitation	Rain gauge (heated, tipping bucket)	0 to 5 inches daily	± 1% at 2 in/hr	0.01 in	0.01 in/tip	Optional meter
Temperature	NTC thermister	-4 to 140 F (-20 to 60 C)	Greater of ± 0% degree F or C of reading	1 degree F or C	1 degree F or C	Standard sensor
Relative Humidity (RH)	Thin-film capacitive	0 to 100% RH	± 2% RH	1% RH	1% RH	Standard sensor
Solar Radiance Intensity	Photodiode	1110 watts/ square meter (W/m ²)	+ 5% of full scale (reference Eppley PSP at 1000 W/m ²)	1 W/m ²	1 W/m ²	Optional meter
Sound and Noise	Type 2 SLM	30 to 130 decibels (dB)	± 1.5 dB	0.1 dB	1 dB	Optional meter
Atomic Radiation	Geiger counter	1 to 19,999 counts per minute (cpm) or 0.001 to 100 milliRad/hr	± 10% Typical, ± 15% Max.	1 cpm or .001 mR/hr	1 cpm or .001 mR/hr	Optional meter
ELF Radiation	Sensor with single- axis probe	1 to 200 gauss (G)	± 10% or 5% FS	1 G	1 G	Optional meter
Wind Speed/ Direction	3-cup anemometer/ continuous rotation potentiometric wind direction vane	0 to 125 mph/ 5 to 355°	± 1 mph or ± 3% ± 3°	1 mph/1°	1 mph/1°	Standard sensor
Barometric Pressure	Piezo resistive	28.25 to 30.75 in Hg	± 0.09 in Hg	0.01 in Hg	0.01 in Hg	Optional sensor
Dew Point Temperature	Software calcula- tion from RH and temperature	3.2 to 122 F (-15 to 50 C)	± 3 F	1 F	1 F	Optional meter - software calculated
Wet Bulb Temperature	Capaculated therm- istor with wick	3.2 to 122 F (-15 to 50 C)	± 3 F	1 F	1 F	Optional meter - one meter

* Not approved for intrinsically safe applications; do not use in explosive gas environments.

Calibration Certificate for Haz-scanner



SYSTEM HEALTH CHECK REPORT

Information

Instrument----- Hazscanner
Model----- EPAS
Serial number----- 915081
Unit Sensor----- CO, NO2, CO2, SO2
PM10, PM2.5
Customer----- Eguard
Date----- 2022 August 12th

Check List

Physical Check----- OK
Supply Voltage Check----- OK
PM 10 Air Flow Check----- OK
PM2.5 Air Flow Check----- OK
Internal Backup Battery Voltage Check----- OK
NO2 Sensor Health Check----- Moderate
CO2,SO2,CO Sensor Health Check----- Still Good
Lithium Battery Voltage Check----- Not OK
Data Logging Check----- OK
Data Downloading Check----- OK

Recommend

Need to replace Lithium battery.
Need to replace new acid gas scrubber (every 6 months).
Need to replace internal filters (every 6 months).
Need to perform factory calibration or in-field calibration (every 12 months).

Performed by


Phoe Saw Htoo
Technical Service Engineer
NANOVA CO.,LTD

Approved by

Myo Oo
Technical Service Manager
NANOVA CO.,LTD

Yangon 22-A, Shan Yeiktar Street, Sanchaung Township, Tel: +95 (1) 230 4901, 230 4902
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Email contact@nanovapteltd.com Website: www.nanova-scientific.com
helpline 09 421 360000 , 09 451 360000

Calibration Certificate for Sound Level Meter



SCIENCE WORKSHOP

CALIBRATION CERTIFICATE

Submitted by : e guard Environmental Services
 No.(145-A2-3), Thiri Mingalar Street, Ward No.(4), 8th Mile,
 Mayangone Township, Yangon 11062, Myanmar.

Location : U Soe Min (Director)

Instrument : Digital Sound Level Meter (BENETECH, GM 1356)
 Sr.No. GG: 2439142 (30dB – 130dB)

Instrument Reference No.: eg – DSLM – 06

Test Equipment : Dual Trace Oscilloscope, Signal Generator and Digital Multimeter
 (7534-02, Yokogawa Japan)

Ambient Temperature : 24°C

Permissible Error : ± 1 % dB


Calibration Date : 21st January 2023 Next due date 21st January 2024

We certified that this instrument has been calibrated to JAPAN standard under the condition stated above.

- Method of Calibration**
 Measure and compare the Frequency Linearity and Sound Level with above instrument and test instrument same source, the effect which the hall has on sound at the same time so that people can hear.
- Result Calibration**

Measurement:	Instrument	Test Equipment	Correction
Frequency	31.5 Hz	31.5 Hz	-
	150 Hz	150 Hz	-
	500 Hz	500 Hz	-
	1 KHz	1 KHz	-
	6 KHz	6 KHz	-
Level	30 dB	30 dB	-
	60 dB	60 dB	-
	90 dB	90 dB	-
	100 dB	100 dB	-
	120 dB	120 dB	-
	130 dB	130 dB	-

This instrument is suitable for use and comply with standard given by manufacture.

Calibrated by: 

Ba Thwin Sein
 Senior Skilled Technician
 SCIENCE EQUIPMENT (Lab) SERVICE



SCIENCE WORKSHOP

CALIBRATION CERTIFICATE

Submitted by : e guard Environmental Services
 No.(145-A2-3), Thiri Mingalar Street, Ward No.(4), 8th Mile,
 Mayangone Township, Yangon 11062, Myanmar.

Location : U Soe Min (Director)

Instrument : Digital Sound Level Meter (BENETECH, GM 1356)
 Sr No. GG: 1273181 (30dB – 130dB)

Instrument Reference No.: eg – DSLM – 07

Test Equipment : Dual Trace Oscilloscope, Signal Generator and Digital Multimeter
 (7534-02, Yokogawa Japan)

Ambient Temperature : 24°C

Permissible Error : + 1 % dB

Calibration Date : 21st January 2023 Next due date 21st January 2024

We certified that this instrument has been calibrated to JAPAN standard under the condition stated above .

1. Method of Calibration

Measure and compare the Frequency Linearity and Sound Level with above instrument and test instrument same source, the effect which the hall has on sound at the same time so that people can hear.

2. Result Calibration

Measurement	Instrument	Test Equipment	Correction
Frequency	31.5 Hz	31.5 Hz	-
	150 Hz	150 Hz	-
	500 Hz	500 Hz	-
	1 KHz	1 KHz	-
	6 KHz	6 KHz	-
Level	30 dB	30 dB	-
	60 dB	60 dB	-
	90 dB	90 dB	-
	100 dB	100 dB	-
	120 dB	120 dB	-
	130 dB	130 dB	-

This instrument is suitable for use and comply with standard given by manufacture.

Calibrated by: 
 Ba Then Sein
 Senior Skilled Technician
 SCIENCE EQUIPMENT (Lab) SERVICE

APPENDIX B

Field Photos

Air Monitoring Point at Sa Ka Village

(ASR4)

Lat- 21°23'48.591", Long- 95°23'0.849"

05.03.2023 to 06.03.2023



Air Monitoring Point at Hnan Ywa Village

(ASR3)

Lat- 21°22'17.565", Long- 95°23'18.116"

06.03.2023 to 07.03.2023



Air Monitoring Point at Gyoke Pin Village

(ASR5)

Lat- 21°24'21.888", Long- 95°21'07.381"

07.03.2023 to 08.03.2023



Air Monitoring Point at Nyaung Kan Village

(ASR14)

Lat- 21°21'58.048", Long- 95°20'51.346"

08.03.2023 to 09.03.2023





Sembcorp Myingyan Power Co., Ltd.

Environmental Monitoring Report

(Air Quality Monitoring)



Prepared

Ref: 05.06.2023 to 09.06.2023 (Air Quality Report)

03 July 2023



E Guard Environmental Services

Report Review Form

Report Title: Environmental Quality Monitoring Report in June 2023

For Sembcorp Myingyan Power Plant

Report Version:

Proponent:

Sembcorp Myingyan Power Plant

Prepared by;

E Guard Environmental Services Co., Ltd.

No. (145- A2- 3), Thiri Mingalar Street,

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Prepared by: U Aung Moe Oo

Position: Assistant Consultant

Submitted Date: 03/07/2023

Signature:




Checked by: U Aung Myint Myat

Position: Consultant

Checked Date: 03/07/2023

Signature:



Approved by:



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1. INTRODUCTION

This report is environmental monitoring (only air and noise quality monitoring) for Sembcorp Myingyan Power Plant which is located beside of Myingyan – Nyaung-Oo Road, near the Sa Ka village in Mandalay Region.

2. METHODOLOGY

Baseline environmental parameters and sampling locations were defined according to the objectives for environmental monitoring purposes. Locations for sampling and analysis of ambient air quality of the project site were identified by Sembcorp Myingyan Power Co,ltd.

2.1 Ambient Air Quality

The emissions of dust particles and gases were measured for 24hrs continuously at the selected sites by using the Environmental Perimeter Air Station (EPAS), and EPAS provides direct readings in real time with data-logging capabilities. The monitoring results were compared with National Environmental Quality (Emission) Guideline (NEQG), World Health Organization (WHO) and American Conference of Governmental Industrial Hygienists (ACGIH) guidelines.

Table 2. 1 Ambient Air Quality Parameters

Ambient Air Quality (4 locations)	
Gas Emission	CO, CO ₂ , SO ₂ , NO ₂
Dust Emission	PM ₁₀ , PM _{2.5}

Table 2. 2 Air Quality Guideline Values

Parameters	Guidelines Value	Unit	Organization	Averaging Period
PM ₁₀	50	µg/m ³	NEQG	24hrs
PM _{2.5}	25	µg/m ³	NEQG	24hrs
CO	9	ppm	NAAQS	8hrs
CO ₂	5000	ppm	ACGIH	8hrs
SO ₂	20	µg/m ³	NEQG	24hrs
NO ₂	200	µg/m ³	NEQG	1hrs

Source: Myanmar National Environmental Quality (Emission) Guidelines, December 2015, National Air Quality Standards (US-EPA) & American Conference of Governmental Industrial Hygienists.

2.2 Ambient Noise

Noise level LAeq (dBA) will be measured at the selected locations that can reflect the exposure of the nearest local community and sensitive locations. Duration and frequency were measured for 24hrs continuously at the selected site using the Digital Sound Level Meter.

The monitoring procedures, data analysis and interpretation were carried out in accordance with the instrument's manufacture and National Environmental Quality (Emission) Guidelines, World Health Organization (WHO) and International Finance Corporation (IFC guidelines in order to be in line with Environmental Conservation Department, Ministry of Natural Resources and Environment Conservation (MONREC). "National Environmental Quality

(Emission) Guidelines" for Myanmar was also presented the value of noise level as LAeq (dBA).

Table 2. 3 Noise level monitoring

Noise monitoring (2 locations)	
Noise Emission	LAeq (dBA) (1hrs, 24 hrs.)

Equipment used to measure ambient air and noise measurement are shown below (**Table 2. 4**).

Table 2. 4 Equipment used to measure ambient air and noise measurement

<p>Davis Vantage Pro2 Wireless Weather Station</p> <p>Provides detailed current weather conditions and expanded forecasts - all at a glance!</p> <p>The Vantage Pro2 uses a frequency-hopping spread spectrum radio from 902 MHz to 928 MHz to transmit and receive data up to 1,000' (300m) line of sight. In addition, the weather station features a bubble level, improved anemometer base, redesigned wind cups, and factory-calibrated wind direction. The integrated sensor suite combines temperature and humidity sensors, rain collector with an aluminum-plated tipping bucket, and anemometer into one package for easy setup. Measure inside and outside temperature and humidity, heat index, barometric pressure, dew point, rainfall, wind direction and speed, and wind chill.</p>	
<p>Haz-Scanner EPAS</p> <p>PM₁₀, PM_{2.5}, NO₂, SO₂, CO, CO₂, Temperature, and Relative Humidity</p>	
<p>Digital Sound Level Meter</p> <p>Noise and Vibration</p>	

3. MONITORING LOCATIONS

Locations of sampling sites were identified by Sembcorp Myingyan Power Co, Ltd. Air quality was monitored at the four selected locations that are Sa Ka Village (ASR4), Hnan Ywa Village (ASR3), Gyoke Pin Village (ASR 5) and Nyaung Kan Village (ASR 14).

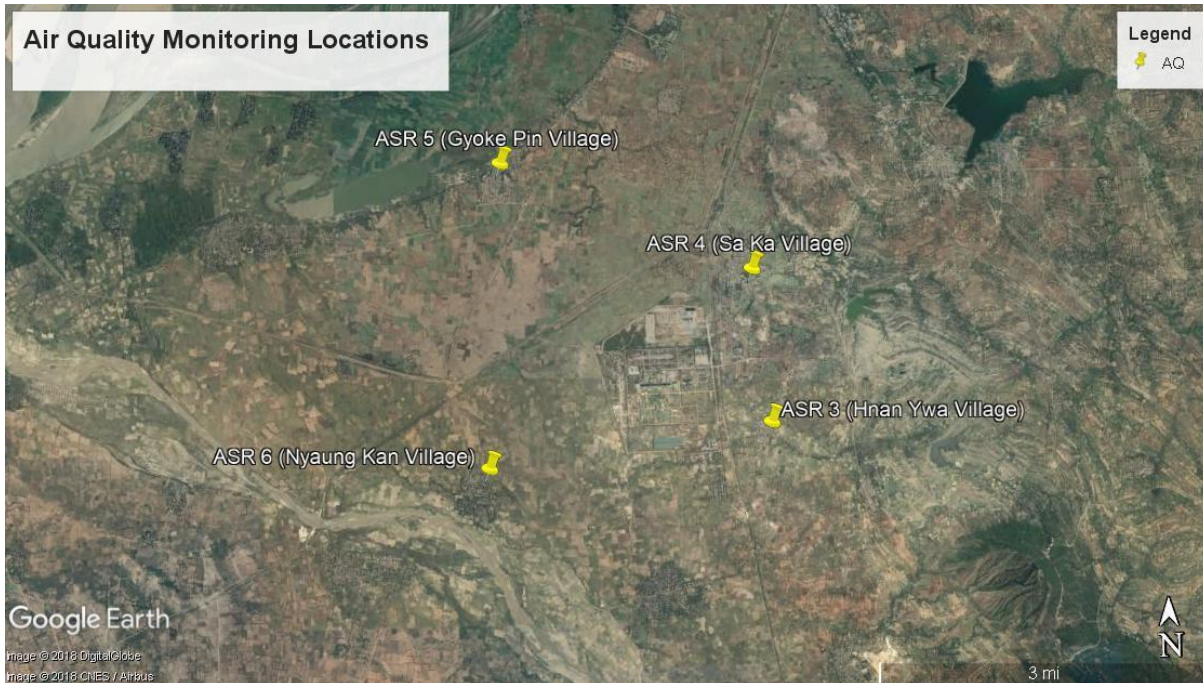


Figure 3. 1 Location of Monitoring Points

Table 3. 1 Location of Monitoring Points

Locations No.	Points	Coordinate	Locations
Ambient Air Quality and Noise Monitoring Locations			
1	ASR4	Lat- 21°23'48.591", Long- 95°23'0.849"	Sa Ka Village
2	ASR3	Lat- 21°22'17.565", Long- 95°23'18.116"	Hnan Village
3	ASR5	Lat- 21°24'21.888", Long- 95°21'7.381"	Gyoke Pin Village
4	ASR14	Lat- 21°21'44.570", Long- 95°20'55.035"	Nyaung Kan Village

4. ENVIRONMENTAL QUALITY MONITORING RESULTS

4.1 Ambient Air Quality Monitoring Results

24 hours air quality monitoring were done at each selected location from 05 June 2023 to 09 June 2023. The measured results are compared with national environmental quality emission guidelines. Based on the results of air quality monitoring, all of the parameters are within the guidelines.

Table 4. 1 Observed Ambient Air Quality Results from Selected Points

Parameters	Observed Value				Guidelines Value	Unit	Averaging Period
	ASR4	ASR3	ASR5	ASR14			
PM ₁₀	6.95	7.17	4.69	7.31	50	µg/m ³	24hrs
PM _{2.5}	3.62	5.58	2.46	5.68	25	µg/m ³	24hrs
CO	0.0004	0.0006	0.0007	0.0006	9	ppm	8hrs
CO ₂	458.41	432.97	470.98	462.18	5000	ppm	8hrs
SO ₂	0.54	0.74	0.65	0.73	20	µg/m ³	24hrs
NO ₂	12.63	15.64	15.29	14.19	200	µg/m ³	1hrs

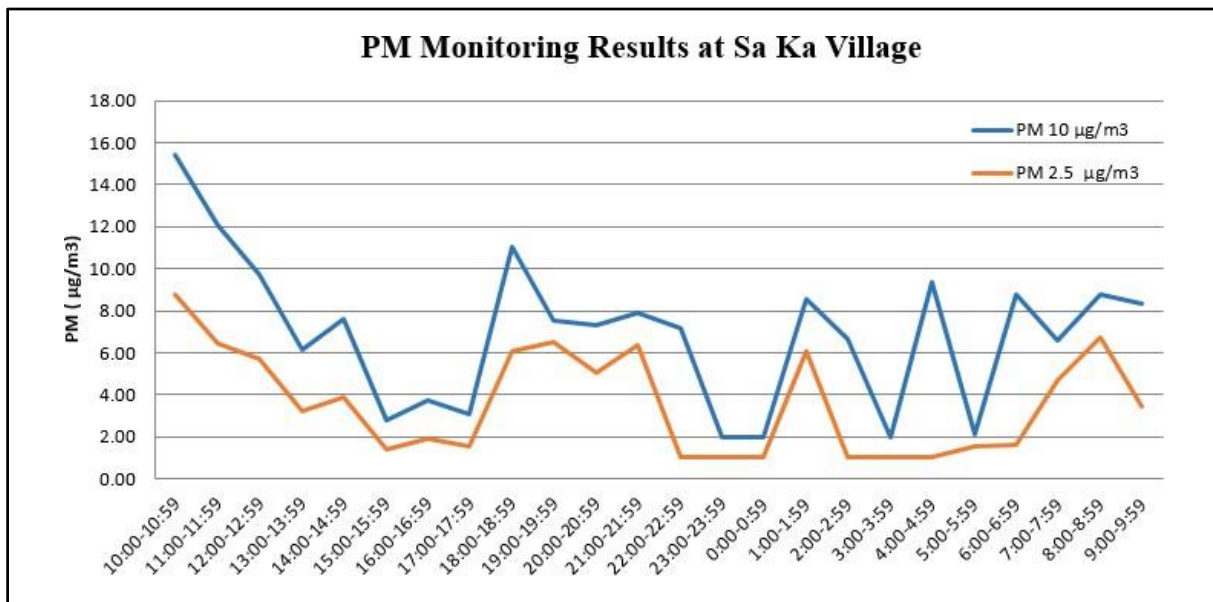


Figure 4. 1 PM Monitoring Results at Sa Ka Village

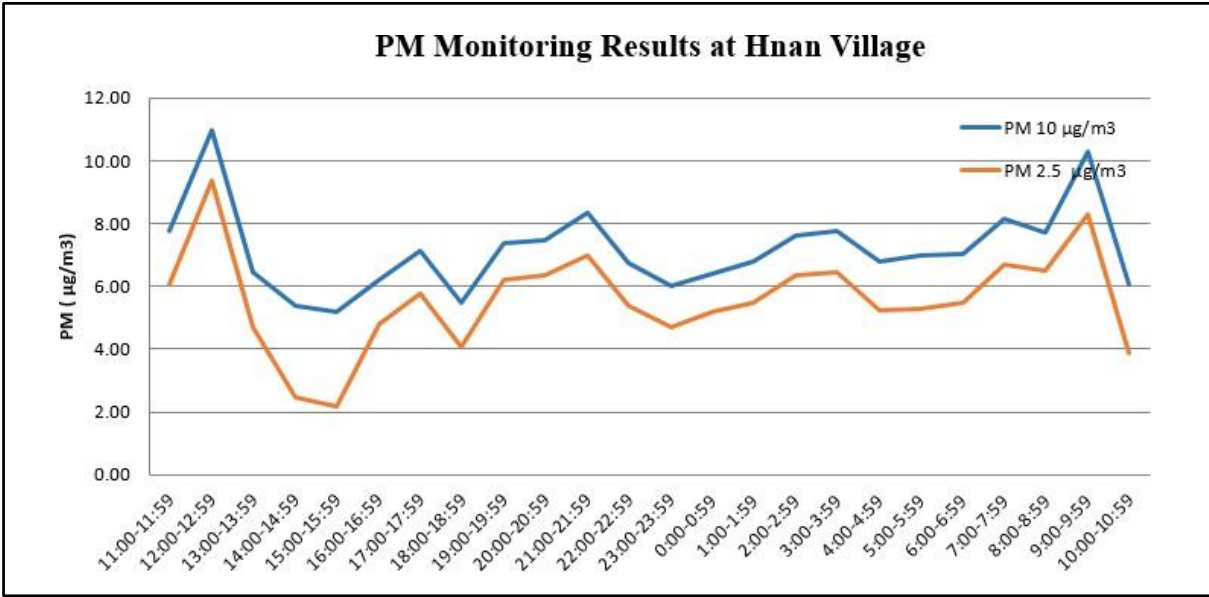


Figure 4. 2 PM Monitoring Results at Hnan Ywa Village

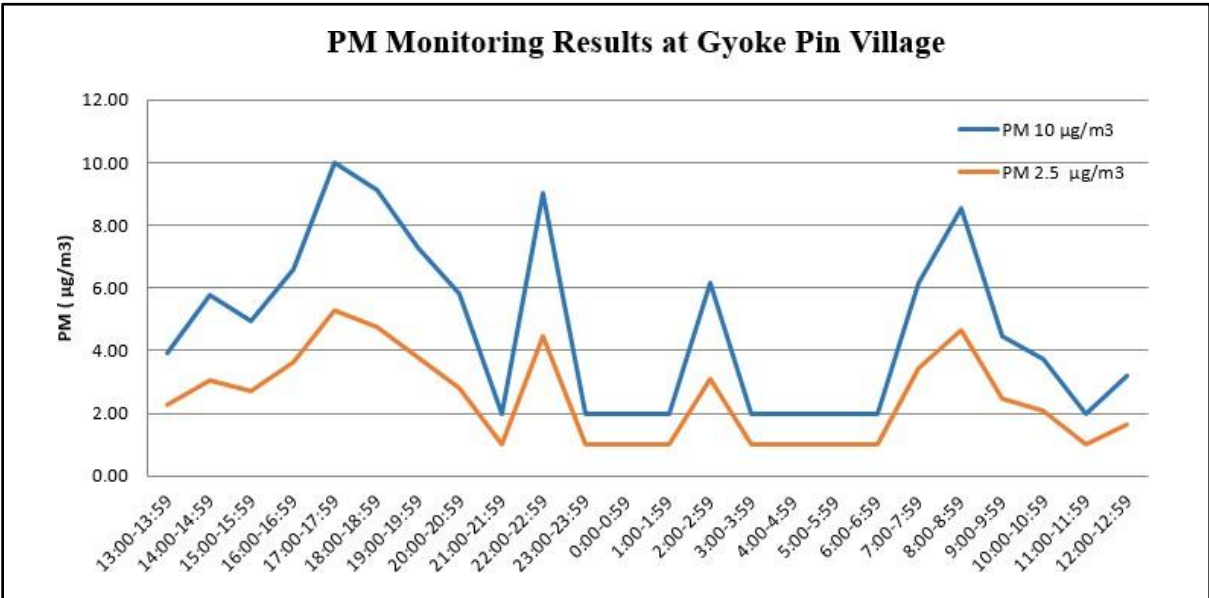


Figure 4. 3 PM Monitoring Results at Gyoke Pin Village

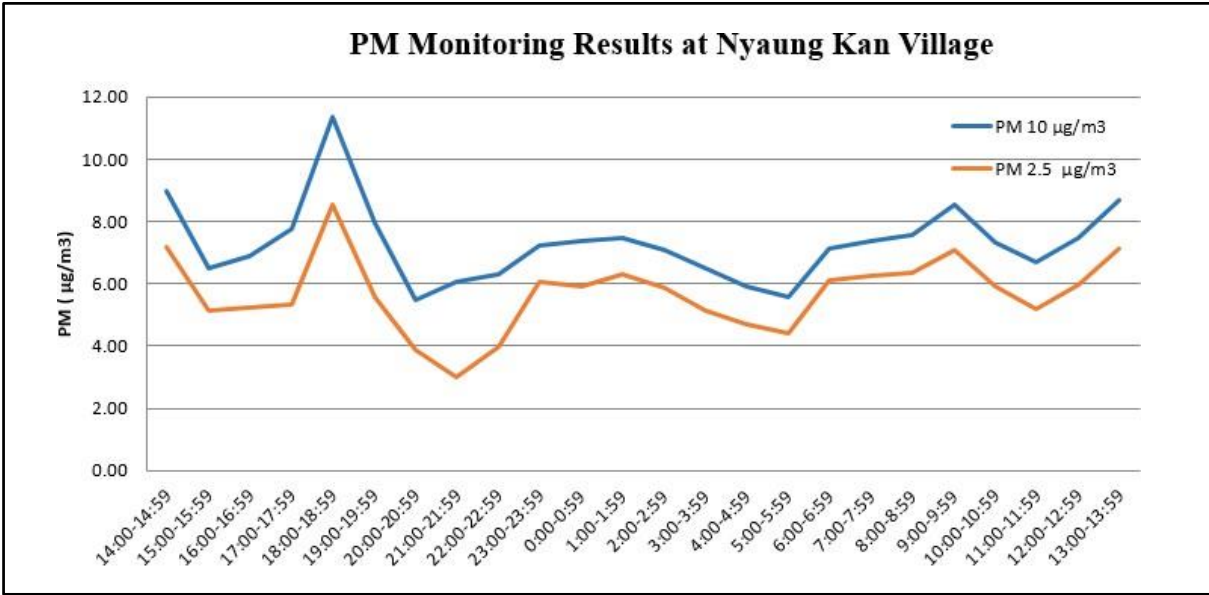


Figure 4. 4 PM Monitoring Results at Nyaung Kan Village

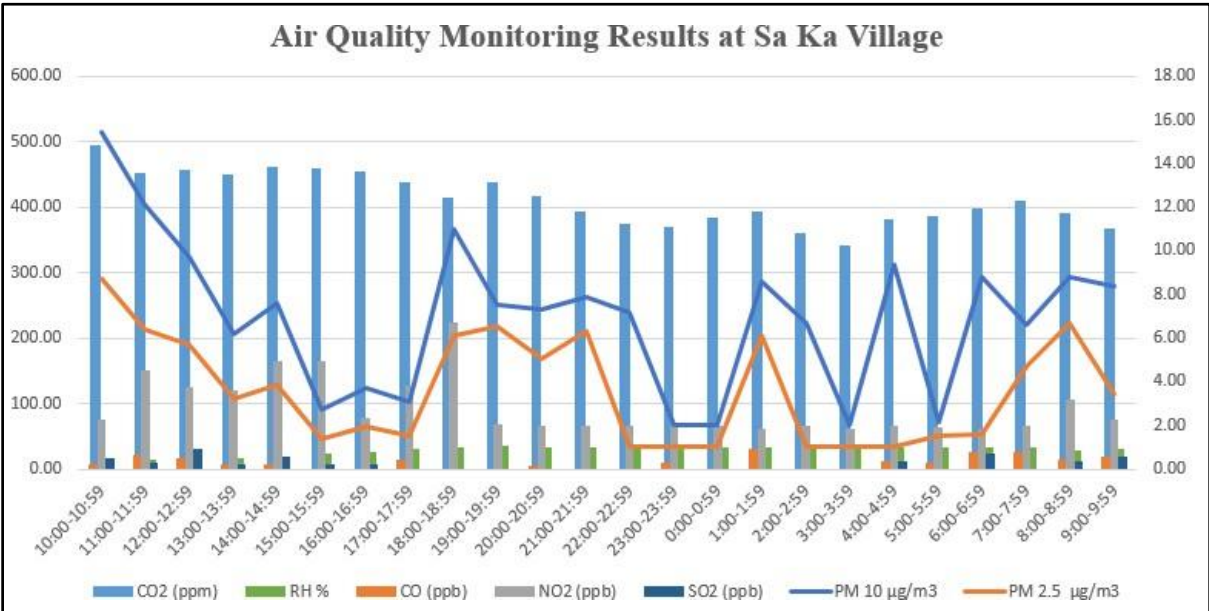


Figure 4. 5 Fluctuation of Air Pollutants during dial cycle (Sa Ka Village)

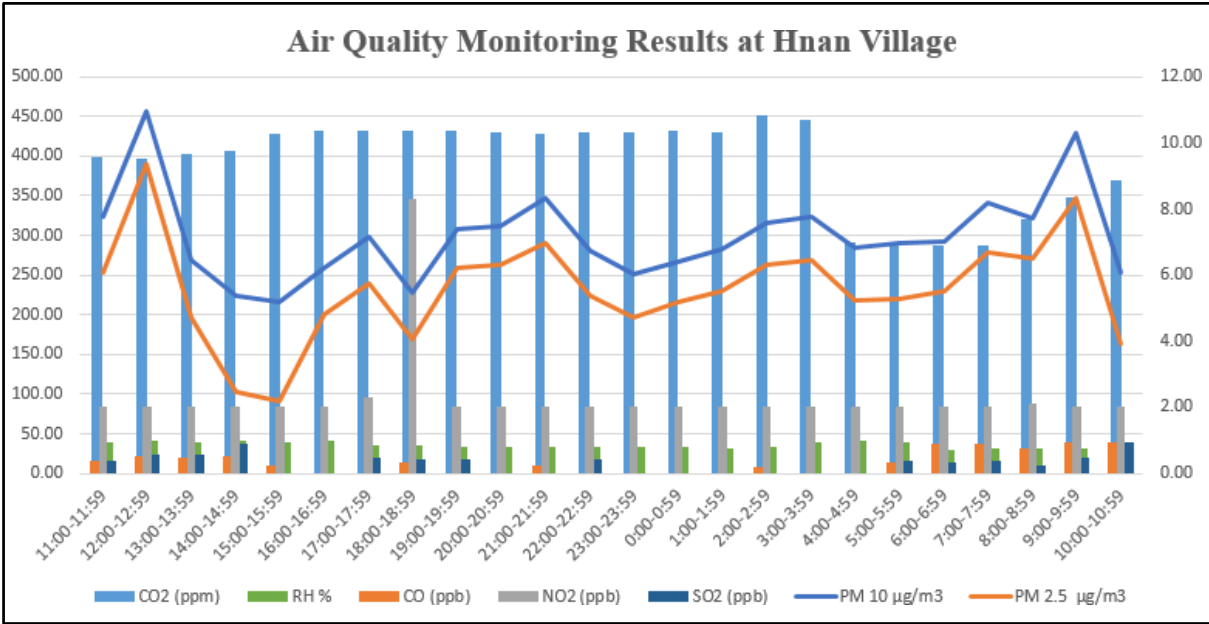


Figure 4. 6 Fluctuation of Air Pollutants during dial cycle (Hnan Ywa Village)

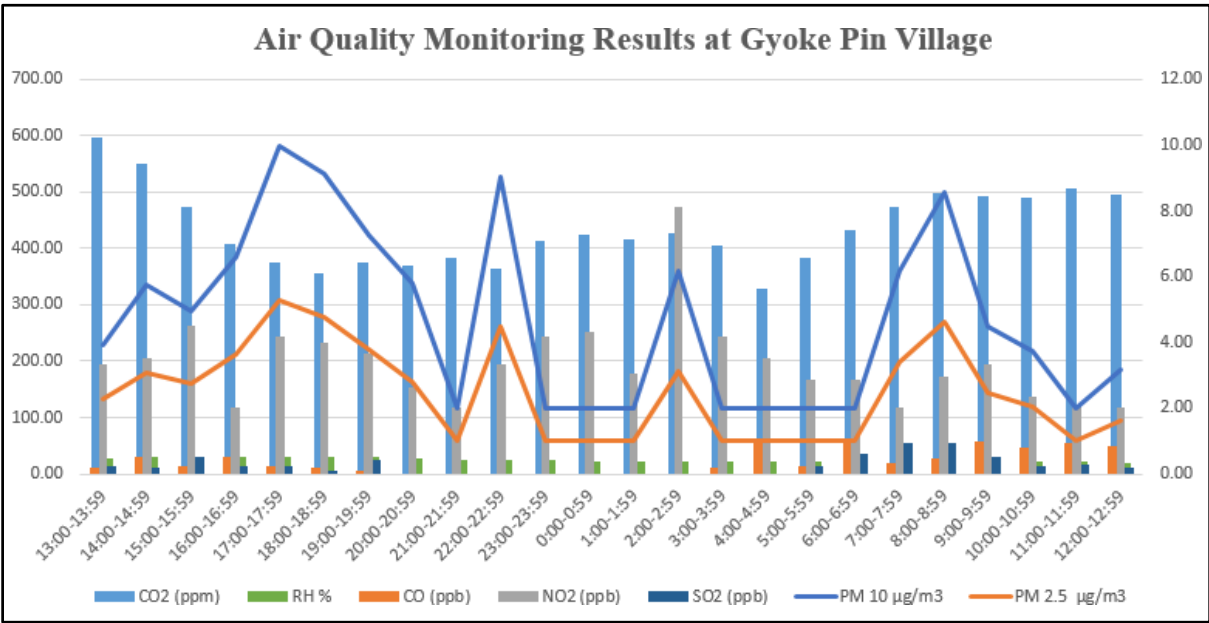


Figure 4. 7 Fluctuation of Air Pollutants during dial cycle (Gyoke Pin Village)

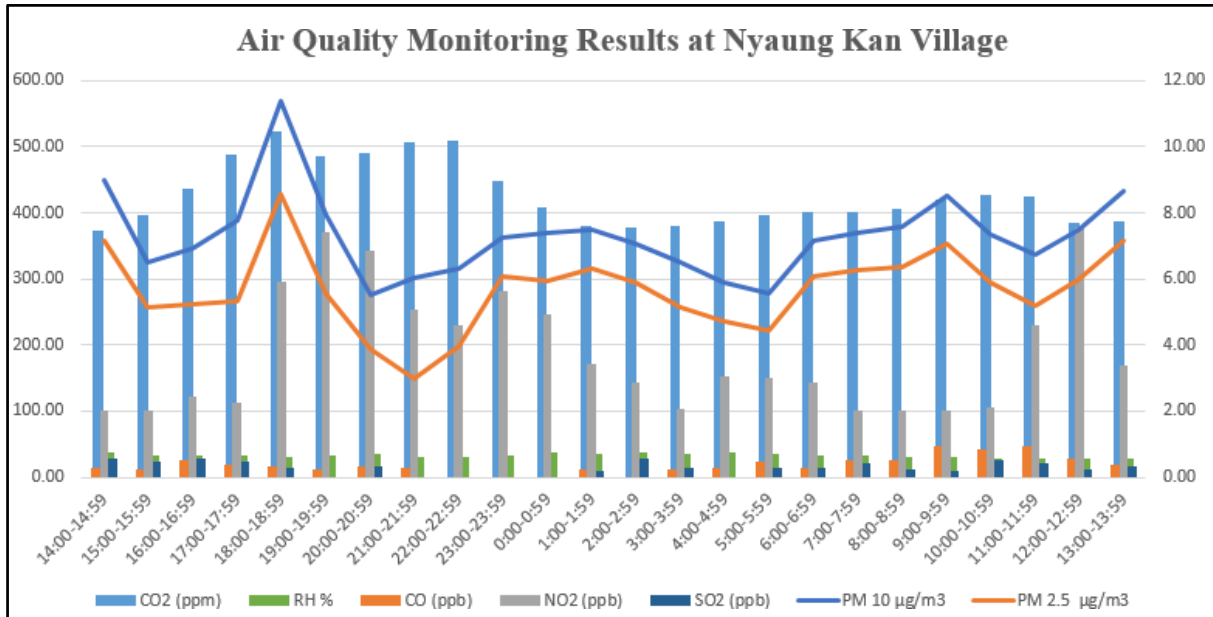


Figure 4. 8 Fluctuation of Air Pollutants during dial cycle (Nyaung Kan Village)

Detail results with one-hour interval of pollutants are shown in **Table 4. 2** to **Table 4. 5**. All results are under the Myanmar National Environmental Quality (emission) Guidelines. So, Sembcorp Myingyan Power Plant is acceptable for environment.

Table 4. 2 Air Monitoring Results (Sa Ka Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
05.06.2023	10:00-10:59	Average	494.30	0.25	2.27	15.45	8.75	11.58	0.49
05.06.2023	11:00-11:59	Average	452.12	0.62	4.53	12.08	6.42	13.32	0.29
05.06.2023	12:00-12:59	Average	457.30	0.50	3.78	9.73	5.67	15.47	0.96
05.06.2023	13:00-13:59	Average	448.92	0.20	3.63	6.17	3.25	15.57	0.25
05.06.2023	14:00-14:59	Average	460.78	0.20	4.97	7.62	3.85	19.75	0.55
05.06.2023	15:00-15:59	Average	459.73	0.00	4.98	2.75	1.40	23.58	0.23
05.06.2023	16:00-16:59	Average	454.93	0.00	2.35	3.73	1.93	26.67	0.24
05.06.2023	17:00-17:59	Average	439.18	0.46	3.83	3.05	1.52	30.00	0.00
05.06.2023	18:00-18:59	Average	415.67	0.00	6.72	11.00	6.08	32.48	0.00
05.06.2023	19:00-19:59	Average	438.88	0.00	2.04	7.53	6.53	34.88	0.00
05.06.2023	20:00-20:59	Average	415.93	0.16	2.00	7.32	5.03	32.82	0.00
05.06.2023	21:00-21:59	Average	392.80	0.00	2.00	7.88	6.35	33.65	0.00
05.06.2023	22:00-22:59	Average	375.52	0.00	2.00	7.17	1.00	34.00	0.00
05.06.2023	23:00-23:59	Average	370.85	0.27	1.97	2.00	1.00	34.98	0.00
06.06.2023	0:00-0:59	Average	384.75	0.00	1.98	2.00	1.00	33.00	0.00
06.06.2023	1:00-1:59	Average	394.03	0.89	1.85	8.58	6.08	32.97	0.00
06.06.2023	2:00-2:59	Average	359.50	0.00	2.00	6.68	1.00	33.02	0.00
06.06.2023	3:00-3:59	Average	342.25	0.00	1.85	2.00	1.00	33.00	0.00
06.06.2023	4:00-4:59	Average	382.18	0.34	1.95	9.38	1.00	31.97	0.37
06.06.2023	5:00-5:59	Average	386.55	0.29	1.92	2.13	1.52	32.85	0.00
06.06.2023	6:00-6:59	Average	397.40	0.79	1.87	8.80	1.58	32.00	0.71
06.06.2023	7:00-7:59	Average	409.92	0.78	2.00	6.58	4.70	32.02	0.00
06.06.2023	8:00-8:59	Average	391.33	0.44	3.15	8.80	6.70	29.05	0.33
06.06.2023	9:00-9:59	Average	366.47	0.55	2.27	8.37	3.42	31.75	0.57
Average			412.14	0.28	2.83	6.95	3.62	28.35	0.21
1 hour Minimum			342.25	0.00	1.85	2.00	1.00	11.58	0.00
1 hour Maximum			494.30	0.89	6.72	15.45	8.75	34.98	0.96

Table 4. 3 Air Monitoring Results (Hnan Ywa Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
06.06.2023	11:00-11:59	Average	398.63	0.37	2.00	7.75	6.08	40.08	0.38
06.06.2023	12:00-12:59	Average	397.13	0.50	2.00	10.95	9.35	40.22	0.57
06.06.2023	13:00-13:59	Average	401.75	0.47	2.00	6.45	4.70	40.03	0.55
06.06.2023	14:00-14:59	Average	407.38	0.54	2.00	5.37	2.45	40.25	0.91
06.06.2023	15:00-15:59	Average	427.12	0.24	2.00	5.20	2.17	40.00	0.00
06.06.2023	16:00-16:59	Average	432.00	0.00	2.00	6.20	4.82	40.25	0.00
06.06.2023	17:00-17:59	Average	432.00	0.00	2.30	7.15	5.75	35.00	0.47
06.06.2023	18:00-18:59	Average	432.00	0.34	8.32	5.48	4.07	35.20	0.40
06.06.2023	19:00-19:59	Average	432.00	0.00	2.00	7.37	6.20	32.50	0.44
06.06.2023	20:00-20:59	Average	430.22	0.00	2.00	7.48	6.33	32.50	0.00
06.06.2023	21:00-21:59	Average	428.60	0.26	2.00	8.35	6.97	32.50	0.00
06.06.2023	22:00-22:59	Average	429.08	0.00	2.00	6.75	5.37	32.50	0.41
06.06.2023	23:00-23:59	Average	430.50	0.00	2.00	6.02	4.70	32.90	0.00
07.06.2023	0:00-0:59	Average	432.00	0.00	2.00	6.38	5.17	32.50	0.00
07.06.2023	1:00-1:59	Average	429.22	0.00	2.00	6.78	5.50	32.00	0.00
07.06.2023	2:00-2:59	Average	452.12	0.19	2.00	7.60	6.33	32.50	0.00
07.06.2023	3:00-3:59	Average	445.75	0.00	2.00	7.75	6.43	40.00	0.00
07.06.2023	4:00-4:59	Average	290.43	0.00	2.00	6.82	5.25	40.25	0.00
07.06.2023	5:00-5:59	Average	286.82	0.34	2.00	6.97	5.27	40.00	0.36
07.06.2023	6:00-6:59	Average	287.80	0.89	2.00	7.02	5.50	30.20	0.34
07.06.2023	7:00-7:59	Average	287.35	0.90	2.00	8.17	6.68	30.60	0.36
07.06.2023	8:00-8:59	Average	319.93	0.74	2.10	7.73	6.52	31.20	0.25
07.06.2023	9:00-9:59	Average	348.60	0.94	2.00	10.28	8.32	30.90	0.45
07.06.2023	10:00-10:59	Average	369.93	0.96	2.00	6.08	3.90	30.10	0.92
Average			392.85	0.32	2.28	7.17	5.58	35.17	0.28
1 hour Minimum			286.82	0.00	2.00	5.20	2.17	30.10	0.00
1 hour Maximum			452.12	0.96	8.32	10.95	9.35	40.25	0.92

Table 4. 4 Air Monitoring Results (Gyoke Pin Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
07.06.2023	13:00-13:59	Average	596.73	0.21	3.35	3.92	2.27	28.77	0.25
07.06.2023	14:00-14:59	Average	550.28	0.53	3.52	5.77	3.07	29.00	0.21
07.06.2023	15:00-15:59	Average	474.65	0.24	4.50	4.97	2.73	29.58	0.50
07.06.2023	16:00-16:59	Average	407.83	0.51	2.00	6.60	3.62	30.00	0.23
07.06.2023	17:00-17:59	Average	374.17	0.25	4.18	9.98	5.27	30.68	0.24
07.06.2023	18:00-18:59	Average	356.38	0.20	4.00	9.12	4.75	30.17	0.12
07.06.2023	19:00-19:59	Average	373.90	0.10	3.65	7.27	3.80	28.93	0.42
07.06.2023	20:00-20:59	Average	370.22	0.00	2.63	5.82	2.80	27.38	0.00
07.06.2023	21:00-21:59	Average	382.58	0.00	2.03	2.00	1.00	26.17	0.00
07.06.2023	22:00-22:59	Average	363.57	0.00	3.33	9.02	4.48	24.37	0.00
07.06.2023	23:00-23:59	Average	414.43	0.00	4.20	2.00	1.00	24.00	0.00
08.06.2023	0:00-0:59	Average	423.63	0.00	4.33	2.00	1.00	23.17	0.00
08.06.2023	1:00-1:59	Average	416.37	0.00	3.03	2.00	1.00	23.00	0.00
08.06.2023	2:00-2:59	Average	427.08	0.00	8.13	6.15	3.12	23.00	0.00
08.06.2023	3:00-3:59	Average	405.75	0.21	4.17	2.00	1.00	22.23	0.00
08.06.2023	4:00-4:59	Average	327.77	0.95	3.52	2.00	1.00	22.00	0.00
08.06.2023	5:00-5:59	Average	382.07	0.25	2.88	2.00	1.00	22.00	0.25
08.06.2023	6:00-6:59	Average	431.98	0.92	2.85	2.00	1.00	22.00	0.60
08.06.2023	7:00-7:59	Average	472.28	0.32	2.00	6.15	3.42	21.83	0.96
08.06.2023	8:00-8:59	Average	497.43	0.45	2.95	8.55	4.63	21.00	0.95
08.06.2023	9:00-9:59	Average	493.20	0.98	3.32	4.47	2.48	21.00	0.53
08.06.2023	10:00-10:59	Average	491.22	0.79	2.33	3.72	2.07	21.00	0.24
08.06.2023	11:00-11:59	Average	504.95	0.95	2.08	2.00	1.00	20.78	0.29
08.06.2023	12:00-12:59	Average	494.72	0.84	2.02	3.18	1.63	20.00	0.20
Average			434.72	0.36	3.38	4.69	2.46	24.67	0.25
1 hour Minimum			327.77	0.00	2.00	2.00	1.00	20.00	0.00
1 hour Maximum			596.73	0.98	8.13	9.98	5.27	30.68	0.96

Table 4. 5 Air Monitoring Results (Nyaung Kan Village)

Date	Time		CO ₂ (ppm)	CO (ppb)	NO ₂ (ppb)	PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	RH %	SO ₂ (ppb)
08.06.2023	14:00-14:59	Average	373.33	0.27	2.00	9.00	7.17	38.32	0.56
08.06.2023	15:00-15:59	Average	396.15	0.23	2.00	6.48	5.15	33.83	0.47
08.06.2023	16:00-16:59	Average	436.87	0.54	2.43	6.90	5.22	32.12	0.57
08.06.2023	17:00-17:59	Average	487.07	0.37	2.23	7.77	5.32	31.90	0.48
08.06.2023	18:00-18:59	Average	523.40	0.33	5.93	11.37	8.55	30.37	0.26
08.06.2023	19:00-19:59	Average	485.15	0.23	7.42	7.97	5.57	32.12	0.00
08.06.2023	20:00-20:59	Average	489.78	0.35	6.85	5.50	3.88	35.43	0.32
08.06.2023	21:00-21:59	Average	505.65	0.28	5.07	6.05	3.00	30.97	0.00
08.06.2023	22:00-22:59	Average	508.52	0.00	4.58	6.30	3.98	31.80	0.00
08.06.2023	23:00-23:59	Average	448.37	0.00	5.62	7.25	6.07	32.82	0.00
09.06.2023	0:00-0:59	Average	407.07	0.00	4.93	7.38	5.92	37.48	0.00
09.06.2023	1:00-1:59	Average	380.37	0.22	3.42	7.48	6.32	35.52	0.21
09.06.2023	2:00-2:59	Average	378.20	0.00	2.88	7.08	5.87	38.67	0.56
09.06.2023	3:00-3:59	Average	380.23	0.25	2.07	6.50	5.13	35.92	0.30
09.06.2023	4:00-4:59	Average	386.95	0.27	3.05	5.90	4.70	38.45	0.00
09.06.2023	5:00-5:59	Average	396.77	0.49	3.00	5.58	4.42	35.28	0.28
09.06.2023	6:00-6:59	Average	400.67	0.29	2.88	7.15	6.10	33.03	0.29
09.06.2023	7:00-7:59	Average	401.55	0.54	2.00	7.38	6.27	33.13	0.42
09.06.2023	8:00-8:59	Average	406.75	0.53	2.00	7.57	6.37	30.63	0.23
09.06.2023	9:00-9:59	Average	418.90	0.93	2.00	8.53	7.08	29.78	0.21
09.06.2023	10:00-10:59	Average	428.12	0.85	2.10	7.35	5.90	29.30	0.53
09.06.2023	11:00-11:59	Average	424.50	0.94	4.58	6.72	5.20	28.53	0.41
09.06.2023	12:00-12:59	Average	384.70	0.55	7.55	7.47	5.98	29.08	0.22
09.06.2023	13:00-13:59	Average	387.60	0.38	3.40	8.67	7.13	28.98	0.35
Average			426.53	0.37	3.75	7.31	5.68	33.06	0.28
1 hour Minimum			373.33	0.00	2.00	5.50	3.00	28.53	0.00
1 hour Maximum			523.40	0.94	7.55	11.37	8.55	38.67	0.57

4.2 Wind Speed and Direction

The following figure describes the wind speed and wind direction of the proposed project site on, 05 June 2023 to 09 June 2023 respectively. According to the data, the wind direction is following **Figure 4. 9** to **Figure 4. 16**.

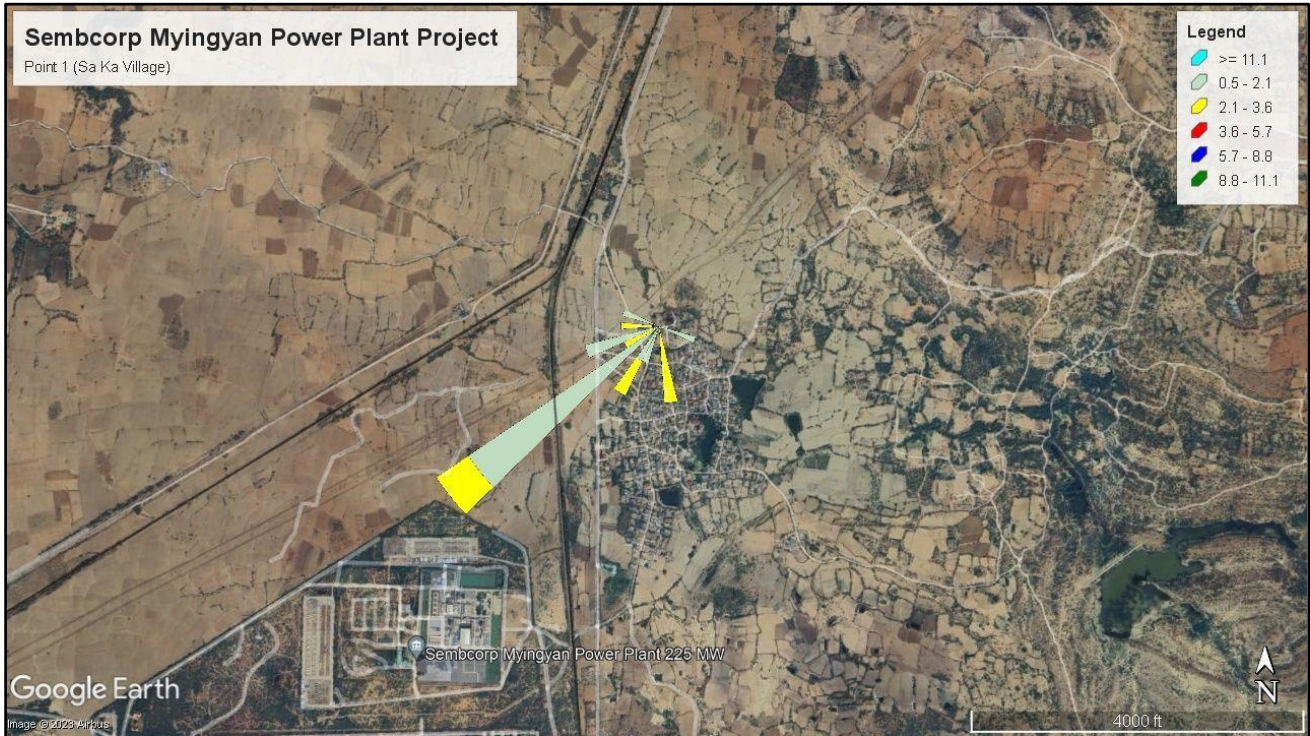


Figure 4. 9 Wind Speed and Wind Direction (Blowing From) at Sa Ka Village (ASR4)

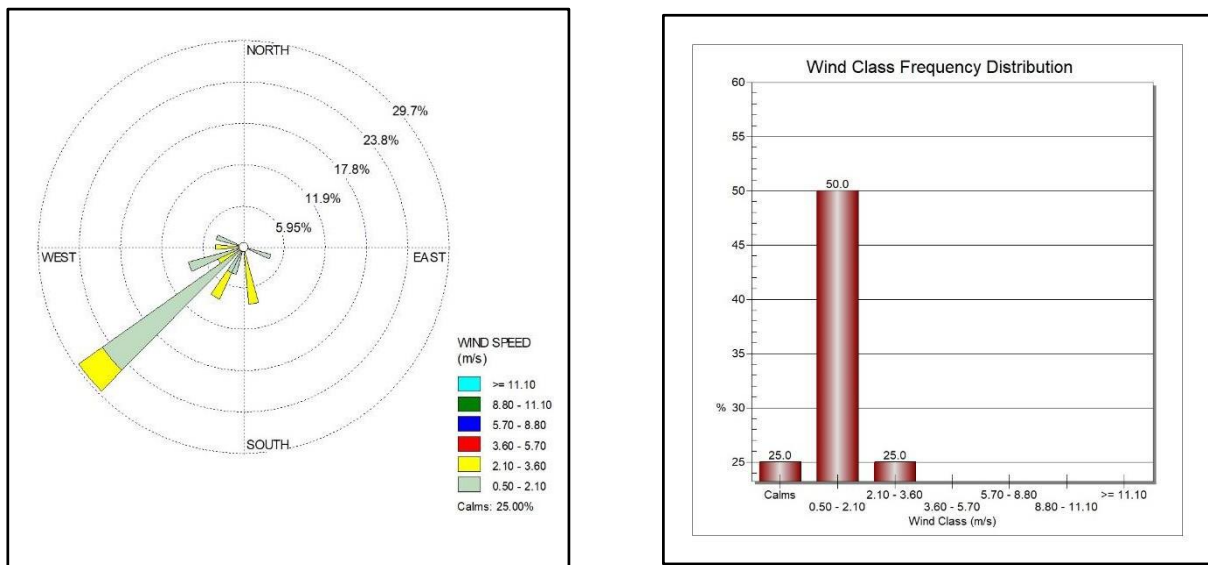


Figure 4. 10 Wind Class Frequency Distribution at Sa Ka Village (ASR4)

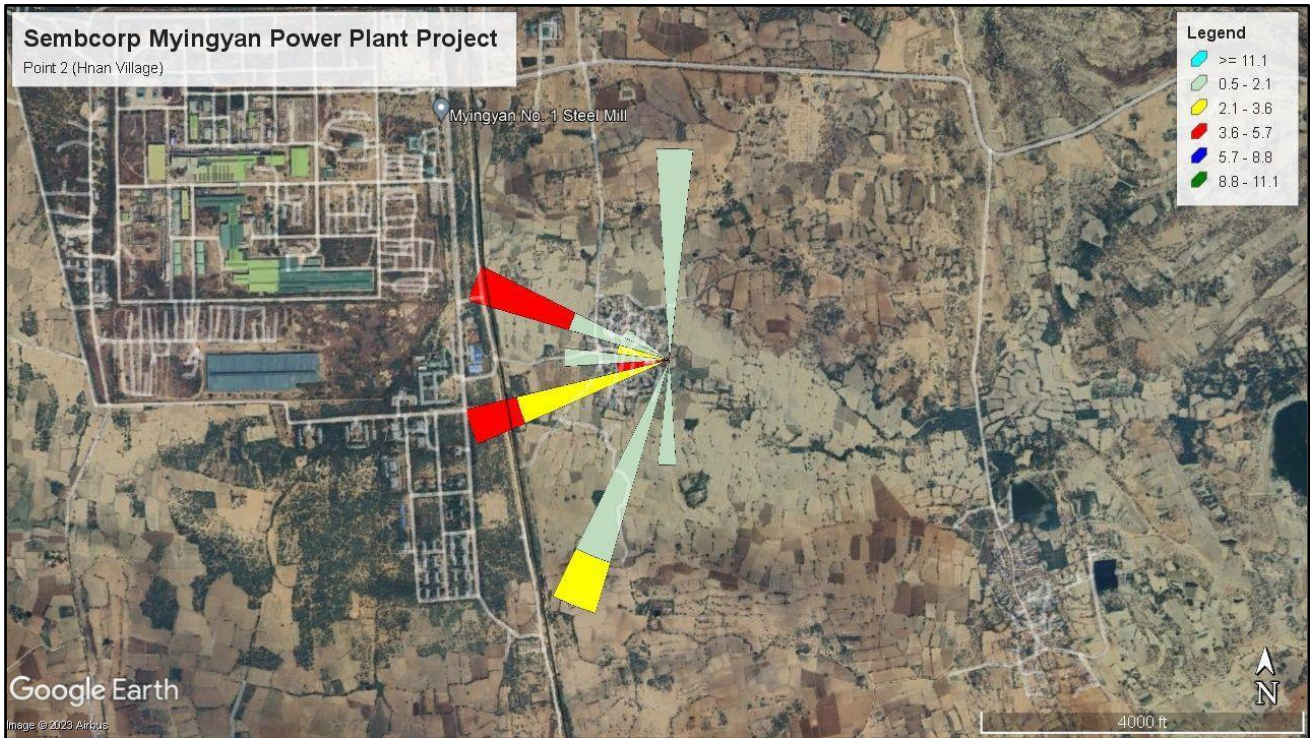


Figure 4. 11 Wind Speed and Wind Direction (Blowing From) at Hnan Ywa Village (ASR3)

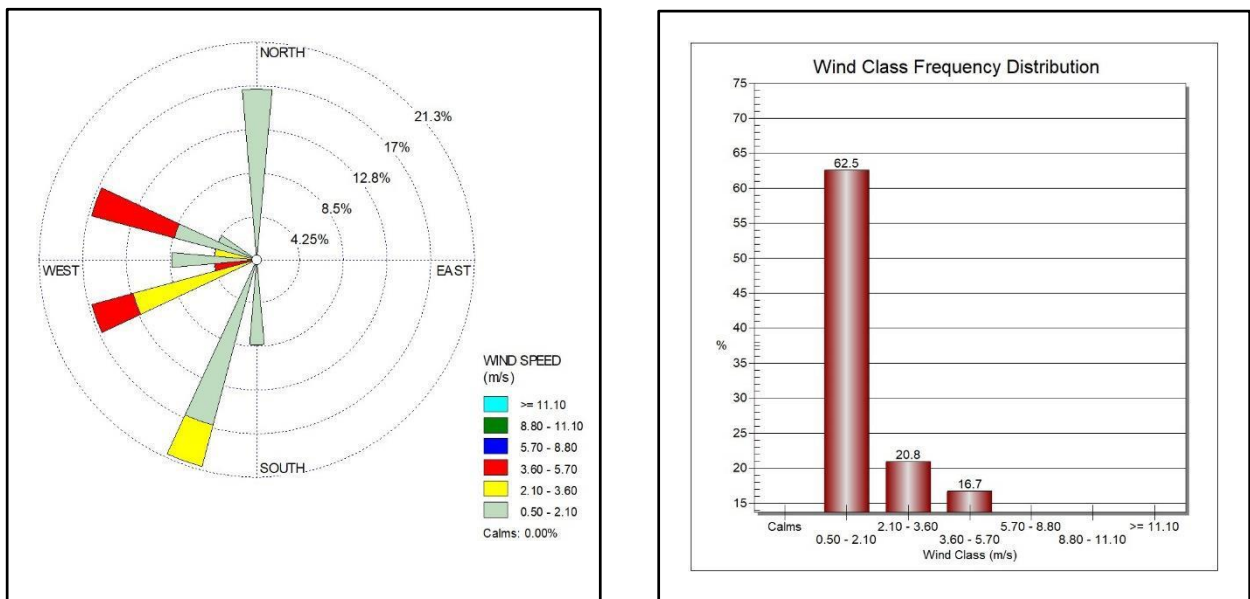


Figure 4. 12 Wind Class Frequency Distribution at Hnan Ywa Village (ASR3)

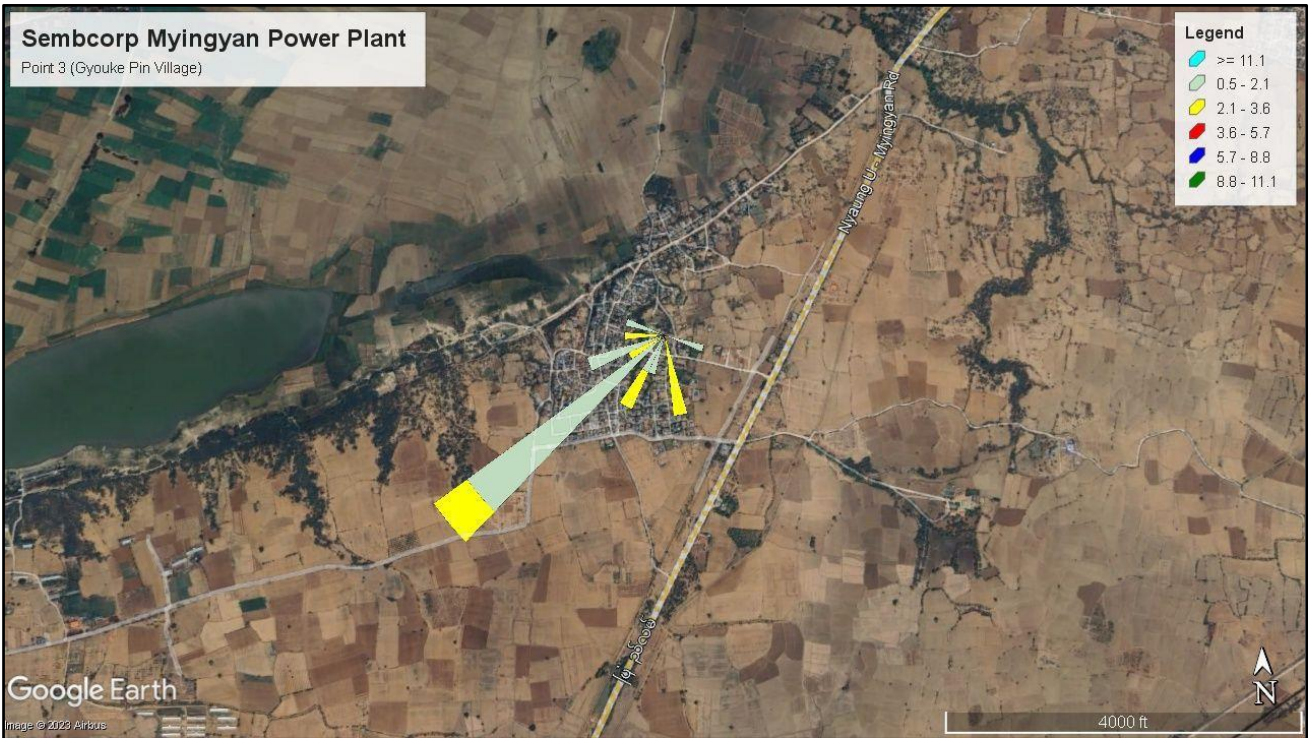


Figure 4. 13 Wind Speed and Wind Direction (Blowing From) at Gyouke Pin Village (ASR5)

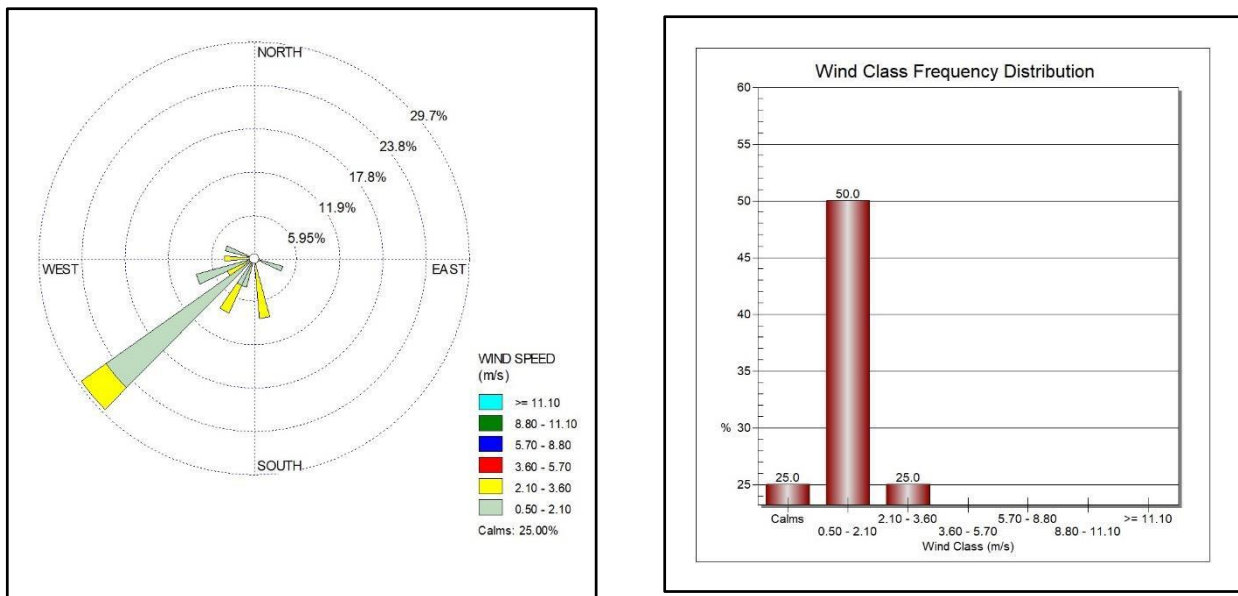


Figure 4. 14 Wind Class Frequency Distribution at Gyouke Pin Village (ASR5)

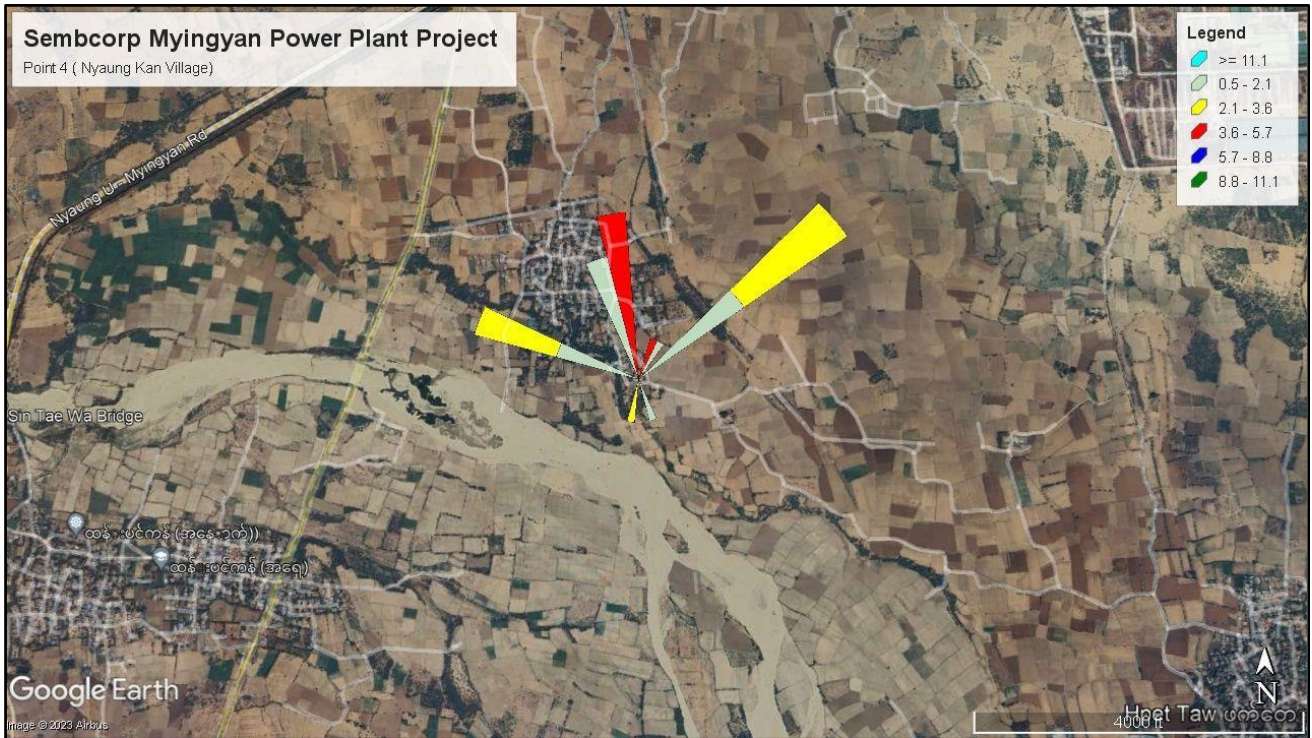


Figure 4. 15 Wind Speed and Wind Direction (Blowing From) at Nyaung Kan Village (ASR14)

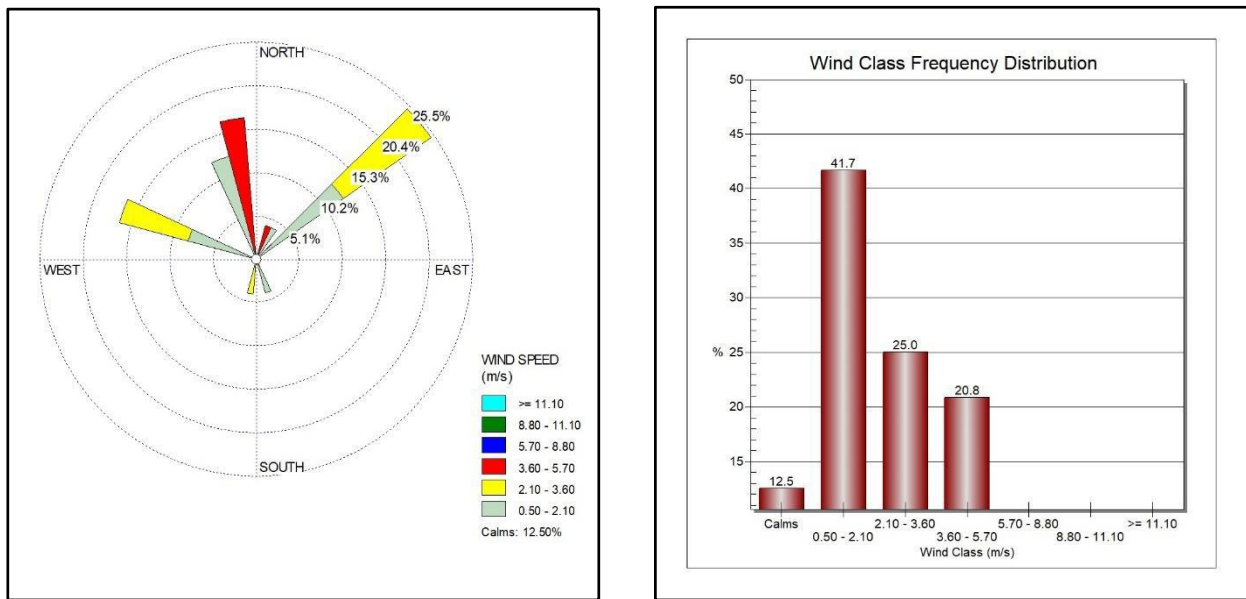


Figure 4. 16 Wind Class Frequency Distribution at Nyaung Kan Village (ASR14)

4.3 Ambient Noise

Ambient noise level for the proposed project was measured with Digital Sound Level Meter at the project site. The noise level measurement is conducted at Sembcorp Myingyan Power points: these points are nearly Sembcorp myingyan power plant and air monitoring point at Sa Ka village on 05 June 2023 to 07 June 2023. Measuring period is 24 hours continuously. The observed values are described in **Table 4. 6 to Table 4. 9** and the following figures are noise level measurement at the proposed project.

Table 4. 6 Observed Values of Noise Level Measurement at near Sembcorp Myingyan Power Plant

No.	Date	Time	Observed Mean Value (Source)	Weight	Day/Night	Average
1	07.06.2023	7:00:13-7:59:13	51.31	A	Day	52.80
2	07.06.2023	8:00:13-8:59:13	53.48	A	Day	
3	07.06.2023	9:00:13-9:59:13	51.58	A	Day	
4	07.06.2023	10:00:13-10:59:13	49.94	A	Day	
5	06.06.2023	11:00:13-11:59:13	58.03	A	Day	
6	06.06.2023	12:00:13-12:59:13	59.58	A	Day	
7	06.06.2023	13:00:13-13:59:13	56.40	A	Day	
8	06.06.2023	14:00:13-14:59:13	57.34	A	Day	
9	06.06.2023	15:00:13-15:59:13	60.02	A	Day	
10	06.06.2023	16:00:13-16:59:13	53.08	A	Day	
11	06.06.2023	17:00:13-17:59:13	52.21	A	Day	
12	06.06.2023	18:00:13-18:59:13	47.61	A	Day	
13	06.06.2023	19:00:13-19:59:13	47.89	A	Day	
14	06.06.2023	20:00:13-20:59:13	46.66	A	Day	
15	06.06.2023	21:00:13-21:59:13	46.92	A	Day	
16	06.06.2023	22:00:13-22:59:13	48.02	A	Night	53.81
17	06.06.2023	23:00:13-23:59:13	48.98	A	Night	
18	07.06.2023	0:00:13-0:59:13	51.40	A	Night	
19	07.06.2023	1:00:13-1:59:13	50.77	A	Night	
20	07.06.2023	2:00:13-2:59:13	57.48	A	Night	
21	07.06.2023	3:00:13-3:59:13	54.71	A	Night	
22	07.06.2023	4:00:13-4:59:13	61.24	A	Night	
23	07.06.2023	5:00:13-5:59:13	54.56	A	Night	
24	07.06.2023	6:00:13-6:59:13	57.10	A	Night	
Average			53.18			

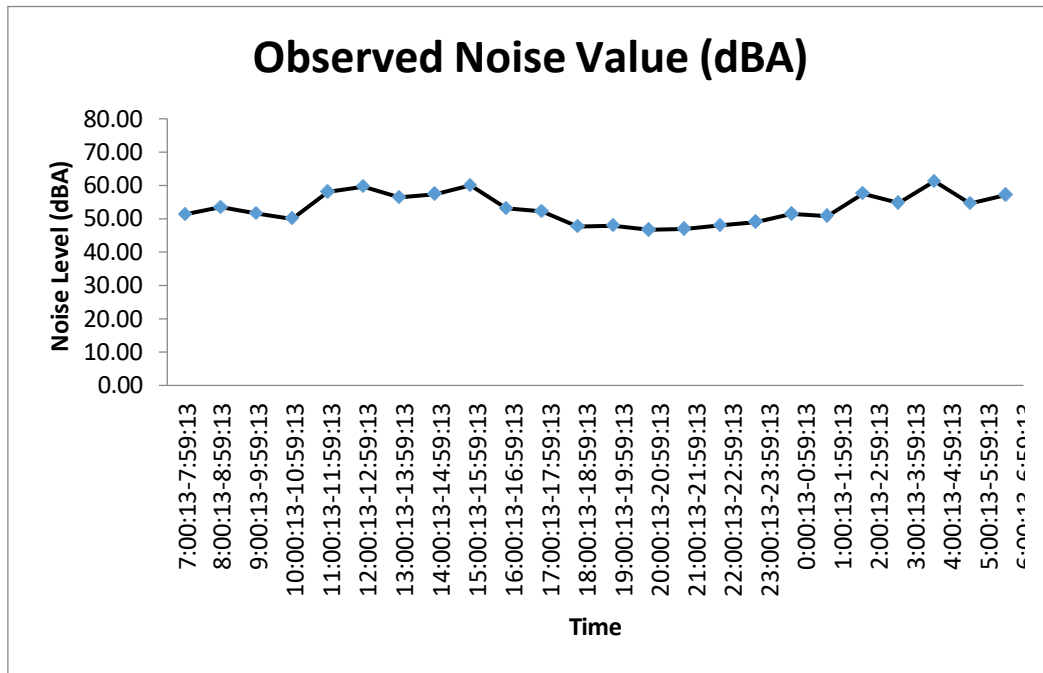


Figure 4. 17 Noise Level at near Sembcorp Myingyan Power Plant

Table 4. 7 Observed Values of Noise Level Measurement at Sa Ka Village

No.	Date	Time	Observed Mean Value (Source)	Weight	Day/Night	Average
1	06.06.2023	7:00:13-7:59:13	50.91	A	Day	52.21
2	06.06.2023	8:00:13-8:59:13	51.58	A	Day	
3	06.06.2023	9:00:13-9:59:13	51.52	A	Day	
4	05.06.2023	10:00:13-10:59:13	50.03	A	Day	
5	05.06.2023	11:00:13-11:59:13	54.11	A	Day	
6	05.06.2023	12:00:13-12:59:13	51.48	A	Day	
7	05.06.2023	13:00:13-13:59:13	55.70	A	Day	
8	05.06.2023	14:00:13-14:59:13	51.54	A	Day	
9	05.06.2023	15:00:13-15:59:13	50.85	A	Day	
10	05.06.2023	16:00:13-16:59:13	51.79	A	Day	
11	05.06.2023	17:00:13-17:59:13	51.22	A	Day	
12	05.06.2023	18:00:13-18:59:13	58.46	A	Day	
13	05.06.2023	19:00:13-19:59:13	58.36	A	Day	
14	05.06.2023	20:00:13-20:59:13	46.87	A	Day	
15	05.06.2023	21:00:13-21:59:13	48.70	A	Day	
16	05.06.2023	22:00:13-22:59:13	46.13	A	Night	48.68
17	05.06.2023	23:00:13-23:59:13	45.95	A	Night	
18	06.06.2023	0:00:13-0:59:13	47.24	A	Night	
19	06.06.2023	1:00:13-1:59:13	45.86	A	Night	
20	06.06.2023	2:00:13-2:59:13	45.22	A	Night	

21	06.06.2023	3:00:13-3:59:13	52.57	A	Night
22	06.06.2023	4:00:13-4:59:13	52.45	A	Night
23	06.06.2023	5:00:13-5:59:13	51.23	A	Night
24	06.06.2023	6:00:13-6:59:13	51.47	A	Night
Average			50.88		

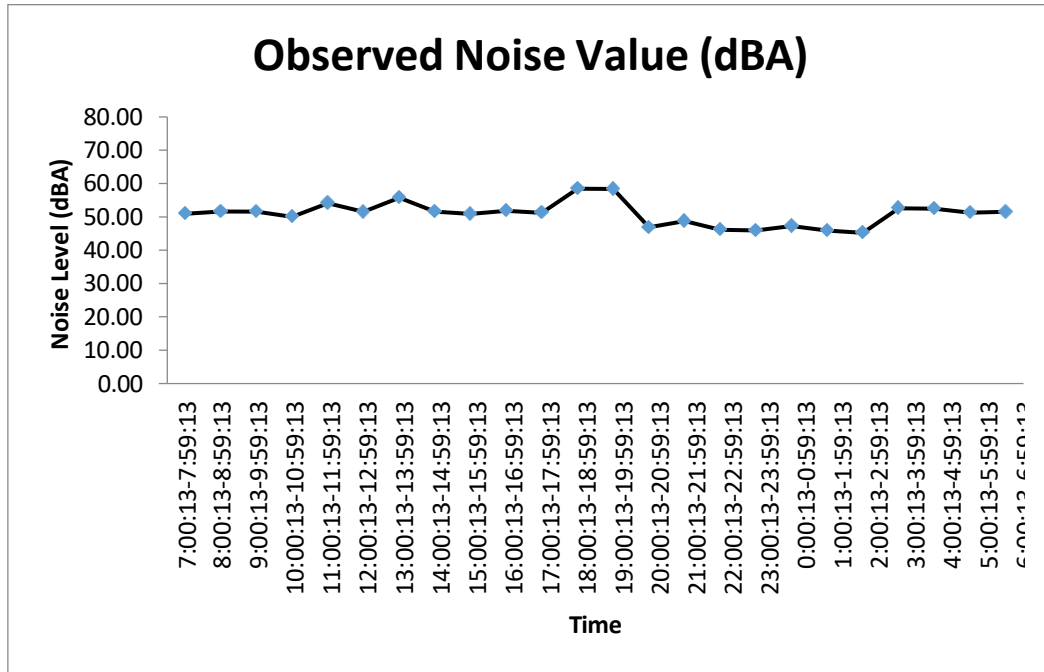


Figure 4. 18 Noise Level at Sa Ka Village

Table 4. 8 Observed Ambient Noise level Results from Myingyan Power Plant

Point	Sembcorp Myingyan Power Plant	
	Day Time	Night Time
Sembcorp Myingyan Power Plant	52.80	53.81
Guideline Values	70	70

Table 4. 9 Observed Ambient Noise level Results from Sa Ka Village

Point	Sembcorp Myingyan Power Plant	
	Day Time	Night Time
Sa Ka Village	52.21	48.68
Guideline Values	55	45

The observed values are compared with the National Environmental Quality (Emission) Guidelines as shown in **Table 4. 10** which indicates the separate level for residential and industrial points.

Table 4. 10 National Environmental Quality (Emission) Guidelines Values for Noise Level

Receptor	One Hour LAeq (dBA)	
	Daytime 07:00 - 22:00 (10:00 - 22:00 for Public Holidays)	Nighttime 22:00 - 07:00 (22:00 - 10:00 for Public Holidays)
Residential, institutional, educational	55	45
Industrial, commercial	70	70

The observed noise values of the proposed project for daytime at Sembcorp myingyan power plant and Sa Ka village are 52.80 dB (A) and 52.21 dB (A). The observed noise values of the proposed project for night time at Sembcorp myingyan power plant and Sa Ka village are 53.81 dB (A) and 48.68 dB (A). The proposed project is located adjacent to the residential and commercial area. The observed values of daytime and nighttime at Sembcorp myingyan power plant under the National Environmental Quality (Emission) Guidelines. The observed values of daytime at Sa Ka Village under the National Environmental Quality (Emission) Guidelines. The observed values of nighttime at Sa Ka village is higher than the acceptable values of the National Environmental Quality (Emission) Guidelines because monitoring location, Sa Ka North Monastery which situated beside the road rang the wooden bell and passing through many motor cycle and cars and raining at the time of measurement. So, the observed values of nighttime at Sa Ka village is higher than the acceptable values of National Environmental Quality (Emission) Guidelines.

APPENDIX A

Description of Haz-scanner (EPAS)

HAZ-SCANNER

Wireless Environmental Perimeter Air Station **EPAS**

- Direct reading
- Build your own station with up to 14 simultaneous air measurements including U.S. EPA criteria air pollutants
 - Standard configuration measures 5 parameters including PM10 or TSP particulates, NO_x, CO, temperature, and relative humidity
 - Add one or all optional interchangeable sensors with upgradable software and/or EPAS-specific meters (up to 9 sensors/meters total) as listed on the reverse side. Choose from additional sensors for toxic gas (including methane), hydrocarbons, VOCs, and biological/chemical agents and EPAS-specific meters for solar radiance/U/V or IR, barometric pressure, sound/noise, atomic radiation, ELF radiation, rain, and wind speed/direction
 - Available analog input port for alternative meter
 - Interchangeable size-selective impactors are available for PM1.0, PM2.5, or PM4.0 (close approximation of respirable)
 - Can monitor up to 2 PM sizes simultaneously
- Real-time readings, datalogging capabilities
 - Optional wireless data transmission up to 5 miles
 - Optional Ethernet internet connection for 24/7 data reporting
- Easily portable and deployable
- Battery operated
- Network up to 8 EPAS to one central PC or Mac
- Easy-to-use graph and reporting software compatible with PC and Mac

The portable HAZ-SCANNER™ EPAS wireless environmental perimeter air station is easily deployed as an ambient air quality monitor to scan, measure, and document critical EPA criteria pollutants including nitrogen dioxide, carbon monoxide, sulfur dioxide, ozone, carbon dioxide, particulates, VOCs, and more. The EPAS is the only instrument on the market with sensors offering simultaneous monitoring of two different sizes of PM. The EPAS provides direct readings in real time with datalogging capabilities. The graph and reporting software is compatible with PC and Mac. Contact an SKC product specialist to build your EPAS including up to 14 simultaneous critical air measurements in one battery-operated instrument.

HAZ-SCANNER Wireless EPAS Applications

- Ambient air quality monitoring
- Hazardous incident response
- Waste site remediation monitoring
- Military/homeland security
- Perimeter monitoring
- Near roadway monitoring

Go to www.skcinstr.com/prod/Haz-Scanner.asp for more information.



Measure up to 14 critical air parameters simultaneously with HAZ-SCANNER EPAS.



SKC Inc. 724-941-9701 SKC West 714-992-2780 SKC Gulf Coast 281-859-8050 SKC South 434-852-7148
www.skcinstr.com

HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station



HAZ-SCANNER EPAS shown with optional solar panel

Performance Profile

The HAZ-SCANNER EPAS is optimized for ambient air applications; custom calibration for specific ranges or applications is available upon request.

Display	LCD real time
Operation	4-way splash-proof membrane switch
Power	12-V Absorption Glass Mat (AGM) rechargeable battery, 100-240 V AC, or optional solar panel
Display Measurements	Max. Min. TWA, STEL
Recording Time	1 sec to 21 weeks
Sampling Rate	1 sec, 1 min, 10 min, 1 hr, adjustable
Data Storage	454,545 data points
Sampling Pump	1.0 to 3.0 L/min
Digital Output	RS-232 (PC), RS-422 (Mac)
Software	PC or Mac
Dimensions (weather-proof case)	8 x 14 x 18 in. (15.2 x 35.6 x 25.4 cm)
Weight	12 lbs (5.4 kg)
Operating Temperature	23 to 122 F (-5 to 50 C)
Storage Temperature	-20 to 140 F (-20 to 60 C)
Humidity	95% non-condensing (use mist heater)
Wireless Radio Modes	900 MHz (U.S.), 900 MHz (Euro) up to 5 miles - line of sight (optional)
Auxiliary Analog Input	0 to 2.5 VDC (1 channel for alternative meter)

Configure an EPAS for Up to 14 Simultaneous Measurements

The standard HAZ-SCANNER EPAS includes the monitor (calibrated for ambient air applications) with sensors/meters for PM10 or TSP, VOCs, temperature, humidity, and wind speed/direction in a NEMA 4 enclosure, acid gas scrubber, internal battery, universal 110-240 V AC battery charger, software, cables, and CD with instructions.

Configure the monitor with additional sensors/meters — up to 4 optional interchangeable sensors with upgradable software and/or up to 4 EPAS-specific meters (listed below). See page 3 for specifications. *Specify sensors and meters when ordering.*

- PM1.0, 2.5, or 4.0
- Ammonia (EC)
- Carbon Dioxide (NDIR)
- Carbon Monoxide (EC)
- Chlorine (EC)
- Ethylene Oxide (EL)
- Hydrocarbon (methane-specific, EC)
- Hydrocarbons (EC)
- Hydrogen Chloride (EL)
- Hydrogen Cyanide (EC)
- Hydrogen Sulfide (EC)
- Nitric Oxide (EC)
- Nitrogen Dioxide
- Oxygen
- Ozone
- Phosphine (EL)
- Sulfur Dioxide
- Rain
- Solar Radiance
- Sound and Noise
- Atomic Radiation
- ELF Radiation
- Barometric Pressure
- Dew Point Temperature
- Wet Bulb Temperature

Contact SKC to build an EPAS with available sensors/meters/calibration for your application!

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinstruments.com/warranty.asp>.



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HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station

HAZ-SCANNER EPAS Sensor/Meter Specifications

Parameter	Sensor*	Measurement/ Concentration Range	Accuracy	Minimum Resolution	Display Resolution	Additional Information
Particulates	90° infrared light scattering	0 to 5000 µg/m ³	Greater of $\pm 10\%$ of reading or 0.2% full scale	10 µg/m ³	1 µg/m ³	Measures particle sizes: 10 µm or TSP (standard) or 1, 2.5, or 4 µm (optional) in the 0.1 to 100 µm size range
VOCs	PID (10.6 eV)	0 to 50,000 ppb (0 to 50 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Minimum detection level is 0.01 ppm. Standard sensor
Toxic Gas: NH ₃ - Ammonia	Gas-sensing semiconductor (GSS) technology	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: CO ₂ - Carbon Dioxide	NDIR	0 to 5000 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	50 ppm	1 ppm	Optional sensor
Toxic Gas: CO - Carbon Monoxide	Electrochemical	0 to 10,000 ppb (0 to 10 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	20 ppb	1 ppb	Optional sensor
Toxic Gas: Cl ₂ - Chlorine	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: (C ₂ H ₄ O) - Ethylene Oxide	Electrochemical	0 to 1500 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	8 ppm	1 ppm	Optional sensor
Toxic Gas: Hydrocarbon, CH ₄ - Methane-specific	NDIR	0 to 1% Vol., 0 to 10,000 ppm, 0 to 20% LEL	Greater of $\pm 10\%$ of reading or 2% full scale	± 50 ppm or 0.1% LEL	50 ppm/ 0.1% LEL	Optional sensor
Toxic Gas: (Non-methane) Hydrocarbons (HC)	NDIR	Calibrated for 0 to 20% LEL of selected gas	Greater of $\pm 10\%$ of reading or 2% full scale	± 50 ppm/ 0.1% LEL	50 ppm/ 0.1% LEL	Optional sensor - specify gas type when ordering: ethane, propane, butane, hexane, ethane, ethylene, or ethylene oxide
Toxic Gas: HCl - Hydrogen Chloride	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: HCN - Hydrogen Cyanide	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: H ₂ S - Hydrogen Sulfide	Electrochemical	0 to 25 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.15 ppm	0.1 ppm	Optional sensor
Toxic Gas: NO - Nitric Oxide	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: NO ₂ - Nitrogen Dioxide	Electrochemical	0 to 5000 ppb (0 to 5 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Optional sensor
Toxic Gas: O ₂ - Oxygen	Electrochemical	0 to 30% Vol.	Greater of $\pm 10\%$ of reading or 2% full scale	0.6%	0.1%	Optional sensor
Toxic Gas: O ₃ - Ozone	Gas-sensing semiconductor (GSS) technology	0 to 150 ppb (0 to 0.15 ppm), 0 to 500 ppb (0 to 0.5 ppm)	Greater of $\pm 10\%$ of reading or 2% full scale	1 ppb	1 ppb	Optional sensor
Toxic Gas: PH ₃ - Phosphine	Electrochemical	0 to 100 ppm	Greater of $\pm 10\%$ of reading or 2% full scale	< 0.2 ppm	0.1 ppm	Optional sensor
Toxic Gas: SO ₂ - Sulfur Dioxide	Electrochemical	0 to 5000 ppb (0 to 5 ppm) for ambient applications	Greater of $\pm 10\%$ of reading or 2% full scale	5 ppb	1 ppb	Optional sensor

* Not approved for intrinsically safe applications; do not use in explosive gas environments.

Specifications continued on next page 



SKC Inc. 724-941-9701 SKC West 714-992-2780 SKC Gulf Coast 281-859-8050 SKC South 434-852-7148
www.skcinc.com

HAZ-SCANNER EPAS

Wireless Environmental Perimeter Air Station

HAZ-SCANNER EPAS Sensor/Meter Specifications (con't)

Parameter	Sensor*	Measurement/ Concentration Range	Accuracy	Minimum Resolution	Display Resolution	Additional Information
Rain Fall/ Precipitation	Rain gauge (heated, tipping bucket)	0 to 5 inches daily	± 1% at 2 in/hr	0.01 in	0.01 in/tp	Optional meter
Temperature	NTC thermister	-4 to 140 F (-20 to 50 C)	Greater of ± 3% degree F or C of reading	1 degree F or C	1 degree F or C	Standard sensor
Relative Humidity (RH)	Thin-film capacitive	0 to 100% RH	± 2% RH	1% RH	1% RH	Standard sensor
Solar Radiance Intensity	Photodiode	1110 watts/ square meter (W/m ²)	+ 5% of full scale (reference Eppley PSP at 1000 W/m ²)	1 W/m ²	1 W/m ²	Optional meter
Sound and Noise	Type 2 SLM	30 to 130 deci- bels (dB)	± 1.5 dB	0.1 dB	1 dB	Optional meter
Atomic Radiation	Geiger counter	1 to 19,999 counts per minute (cpm) or 0.001 to 100 millRad/hr	± 10% Typical ± 15% Max.	1 cpm or .001 mR/hr	1 cpm or .001 mR/hr	Optional meter
ELF Radiation	Sensor with single- axis probe	1 to 200 gauss (G)	± 10% or 5% FS	1 G	1 G	Optional meter
Wind Speed/ Direction	3-cut anemometer continuous rotation potentiometric wind direction vane	0 to 125 mph/ 5 to 355°	± 1 mph or ± 3% ± 3°	1 mph/1°	1 mph/1°	Standard sensor
Barometric Pressure	Piezo resistive	28.25 to 30.75 in Hg	± 0.09 in Hg	0.01 in Hg	0.01 in Hg	Optional sensor
Dew Point Temperature	Software calcula- tion from RH and temperature	3.2 to 122 F (-15 to 50 C)	± 3 F	1 F	1 F	Optional meter - software calculated
Wet Bulb Temperature	Capaculated therm- ister with wick	3.2 to 122 F (-15 to 50 C)	± 3 F	1 F	1 F	Optional meter - one meter

* Not approved for intrinsically safe applications; do not use in explosive gas environments.



Calibration Certificate for Haz-scanner



SYSTEM HEALTH CHECK REPORT

Information

Instrument----- Hazscanner
 Model----- EPAS
 Serial number----- 915081
 Unit Sensor----- CO, NO2, CO2, SO2
 PM10, PM2.5
 Customer----- Eguard
 Date----- 2022 August 12th

Check List

Physical Check----- OK
 Supply Voltage Check----- OK
 PM 10 Air Flow Check----- OK
 PM2.5 Air Flow Check----- OK
 Internal Backup Battery Voltage Check----- OK
 NO2 Sensor Health Check----- Moderate
 CO2,SO2,CO Sensor Health Check----- Still Good
 Lithium Battery Voltage Check----- Not OK
 Data Logging Check----- OK
 Data Downloading Check----- OK

Recommend

- Need to replace Lithium battery.
- Need to replace new acid gas scrubber (every 6 months).
- Need to replace internal filters (every 6 months).
- Need to perform factory calibration or in-field calibration (every 12 months).

Performed by


Phoe Saw Htoo
 Technical Service Engineer
 NANOVA CO.,LTD

Approved by

Myo Oo
 Technical Service Manager
 NANOVA CO.,LTD

Yangon 22-A, Shan Yeiktar Street, Sanchaung Township, Tel: +95 (1) 230 4901, 230 4902
 Nay Pyi Taw Za /30, Ziwaka Say Sine Tan, Tha Phay Khone, Pyinmanar Tel.067 810 8083
 Mandalay 153(B), 73rd Street, Bet 33x34 Street, ChanAye Tharzan Tsp. Tel. 09 791 360000
 Email contact@nanovapteltd.com Website: www.nanova-scientific.com
 helpline 09 421 360000 , 09 451 360000

Calibration Certificate for Sound Level Meter



SCIENCE WORKSHOP

CALIBRATION CERTIFICATE

Submitted by : e guard Environmental Services
 No.(145-A2-3), Thiri Mingalar Street, Ward No.(4), 8th Mile,
 Mayangone Township, Yangon 11062, Myanmar.

Location : U Soe Min (Director)

Instrument : Digital Sound Level Meter (BENETECH, GM 1356)
 Sr.No. GG: 2439142 (30dB – 130dB)

Instrument Reference No.: eg – DSLM – 06

Test Equipment : Dual Trace Oscilloscope, Signal Generator and Digital Multimeter
 (7534-02, Yokogawa Japan)

Ambient Temperature : 24°C

Permissible Error : ± 1 % dB


Calibration Date : 21st January 2023 Next due date 21st January 2024

We certified that this instrument has been calibrated to JAPAN standard under the condition stated above.

- Method of Calibration**
 Measure and compare the Frequency Linearity and Sound Level with above instrument and test instrument same source, the effect which the hall has on sound at the same time so that people can hear.
- Result Calibration**

Measurement:	Instrument	Test Equipment	Correction
Frequency	31.5 Hz	31.5 Hz	-
	150 Hz	150 Hz	-
	500 Hz	500 Hz	-
	1 KHz	1 KHz	-
	6 KHz	6 KHz	-
Level	30 dB	30 dB	-
	60 dB	60 dB	-
	90 dB	90 dB	-
	100 dB	100 dB	-
	120 dB	120 dB	-
	130 dB	130 dB	-

This instrument is suitable for use and comply with standard given by manufacture.

Calibrated by: 

Ba Thwin Sein
 Senior Skilled Technician
 SCIENCE EQUIPMENT (Lab) SERVICE



SCIENCE WORKSHOP

CALIBRATION CERTIFICATE

Submitted by : e guard Environmental Services
 No.(145-A2-3), Thiri Mingalar Street, Ward No.(4), 8th Mile,
 Mayangone Township, Yangon 11062, Myanmar.

Location : U Soe Min (Director)

Instrument : Digital Sound Level Meter (BENETECH, GM 1356)
 Sr No. GG: 1273181 (30dB – 130dB)

Instrument Reference No.: eg – DSLM – 07

Test Equipment : Dual Trace Oscilloscope, Signal Generator and Digital Multimeter
 (7534-02, Yokogawa Japan)

Ambient Temperature : 24°C

Permissible Error : + 1 % dB

Calibration Date : 21st January 2023 Next due date 21st January 2024

We certified that this instrument has been calibrated to JAPAN standard under the condition stated above .

1. Method of Calibration

Measure and compare the Frequency Linearity and Sound Level with above instrument and test instrument same source, the effect which the hall has on sound at the same time so that people can hear.

2. Result Calibration

Measurement	Instrument	Test Equipment	Correction
Frequency	31.5 Hz	31.5 Hz	-
	150 Hz	150 Hz	-
	500 Hz	500 Hz	-
	1 KHz	1 KHz	-
	6 KHz	6 KHz	-
Level	30 dB	30 dB	-
	60 dB	60 dB	-
	90 dB	90 dB	-
	100 dB	100 dB	-
	120 dB	120 dB	-
	130 dB	130 dB	-

This instrument is suitable for use and comply with standard given by manufacture.

Calibrated by: 
 Ba Then Sein
 Senior Skilled Technician
 SCIENCE EQUIPMENT (Lab) SERVICE

APPENDIX B

Field Photos

<p>Air Monitoring Point at Sa Ka Village (ASR4) Lat- 21°23'48.591", Long- 95°23'0.849" 05.06.2023 to 06.06.2023</p>	
<p>Air Monitoring Point at Hnan Ywa Village (ASR3) Lat- 21°22'17.565", Long- 95°23'18.116" 06.06.2023 to 07.06.2023</p>	

Air Monitoring Point at Gyoke Pin Village

(ASR5)

Lat- 21°24'21.888", Long- 95°21'07.381"

07.06.2023 to 08.06.2023



Air Monitoring Point at Nyaung Kan Village

(ASR14)

Lat- 21°21'58.048", Long- 95°20'51.346"

08.06.2023 to 09.06.2023



Report No. GEM-LAB-202303118
Revision No. 1
Report Date 24 March, 2023
Application No. 0299-C001

Analysis Report

Client Name Sembcorp Myingyan Power Company Limited
Address Beside of No.1 Steel Mill, Sa Khar Village, Myingyan.
Project Name
Sample DescriptionSample Name CMB Discharge sampling skid Sampling Date 16 March, 2023
Sample No. W-2303103 Sampling By Customer
Waste Profile No. Sample Received Date 16 March, 2023
Analytical Date 16-24/03/2023

No.	Parameter	Method	Unit	Result	LOQ
1	pH	APHA 4500 H+ B (Electrometric Method)	-	7.35	0.00
2	55	APHA 2540D (Dry at 103-105°C Method)	mg/l	26	-
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	13.3	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	<3.1	3.1
5	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	2.7	0.5
6	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	1.64	0.05
7	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	S0.002	0.002
8	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.702	0.002
9	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	S0.010	0.010
10	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	S0.002	0.002
11	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	S0.002	0.002
12	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	S0.002	0.002
13	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	!fig/1	S0.002	0.002
14	Iron	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.558	0.002
15	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	<0.1	0.1

Remark LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin
Manager

Approved By :

Hideki Yomo
Managing Director

REPORT RESULT IS ONLY OF THE SAMPLE SUBMITTED FOR ANALYSIS.

THIS ANALYSIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT WRITTEN APPROVAL OF THE LABORATORY OF GOLDEN DOWA ECO-SYSTEM MYANMAR CO.,LTD.



Report No. : GEM-LAB-202306106

Revision No. : 1

Report Date : 30 June, 2023

Application No. : 0299-C001

Analysis Report

Client Name : Sembcorp Myingyan Power Company Limited
 Address : Beside of No.1 Steel Mill , Sa Khar Village, Myingyan.
 Project Name :
 Sample Description

Sample Name : CMB Discharge sampling skid Sampling Date : 15 June, 2023
 Sample No. : W-2306089 Sampling By : Customer
 Waste Profile No. : - Sample Received Date : 15 June, 2023
 Analytical Date : 15-30/06/2023

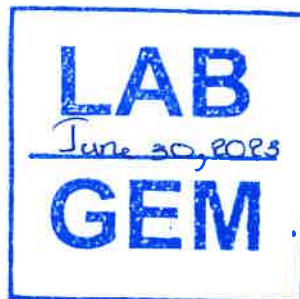
No.	Parameter	Method	Unit	Result	LOQ
1	pH	APHA 4500 H+ B (Electrometric Method)	-	7.88	0.00
2	SS	APHA 2540D (Dry at 103-105°C Method)	mg/l	4	-
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	29.6	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	<3.1	3.1
5	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	4.9	0.5
6	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	1.22	0.05
7	Mercury	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
8	Zinc	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.868	0.002
9	Arsenic	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.010	0.010
10	Chromium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
11	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
12	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
13	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.002	0.002
14	Iron	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.971	0.002
15	Free Chlorine	APHA 4500 CL G (DPD Colorimetric Method)	mg/l	<0.1	0.1

Remark : LOQ - Limit of Quantitation

APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd edition

Analysed By :

Ni Ni Aye Lwin
Manager



Approved By :

Hideki Yomo June 30, 2023
Managing Director

Report No.: GEM-LAB-202306107
Revision No.: 1
Report Date: 30 June, 2023
Application No.: 0299-C002


Analysis Report

Client Name : Sembcorp Myingyan Power Company Limited
Address : Beside of No.1 Steel Mill , Sa Khar Village, Myingyan.
Project Name :
Sample Description
Sample Name : Soil Sample
Sample No. : S-2306001
Waste Profile No. :-

Sampling Date : 15 June, 2023
Sampling By : Customer
Sample Received Date : 15 June, 2023
Analytical Date : 15-30/06/2023

No.	Parameter	Method For Liquid Sample Preparation	Method of Measurement	Unit	Result	LOQ
1	Cadmium	Content test in soil pollution countermeasures Act (No.19 of the Ministry of Environment notification in Japan (2003))	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/kg	≤0.068	0.068
2	Arsenic			mg/kg	≤0.340	0.340
3	Lead			mg/kg	≤0.068	0.068
4	Mercury			mg/kg	≤0.068	0.068
5	Selenium			mg/kg	≤0.340	0.340
6	Chromium			mg/kg	≤0.068	0.068
7	pH (soil pH measured in water at 25°C)	-	USEPA Method 9045D (Soil and Waste pH)	-	7.87	-

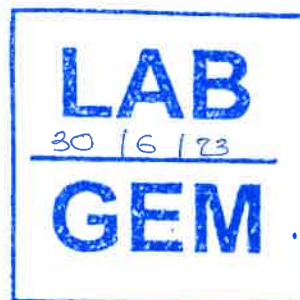
Remark : LOQ - Limit of Quantitation
APHA - American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 22nd Method for Liquid sample Preparation - Content test in soil pollution countermeasures Act (No.19 of the Ministry of Environment notification in Japan (2003))


Tin Ko Ko
SMPC HSSE
07-July-2023

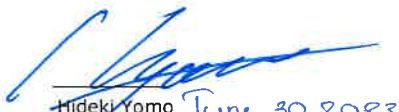
Analysed By :



Cherry Myint Thein
Assistant Manager



Approved By :


Hideki Yomo June 30, 2023
Managing Director

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed build-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Wai
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Wai
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Wai
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Will be conducted by 3 rd Party Surveyor on Mar 2023 as per planned schedule.	Nil	Ongoing	Zaw/Tin/Wai
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Wai
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Wai
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Wai
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Wai

Date / Time of inspection: 31 Jan 2023**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed built-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Wai
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Wai
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Wai
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Will be conducted by 3 rd Party Surveyor on Mar 2023 as per planned schedule.	Nil	Ongoing	Zaw/Tin/Wai
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Wai
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Wai
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Wai
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Wai

Date / Time of inspection: 28 Feb 2023

Location: Designated points

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed build-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Wai
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Wai
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Wai
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Quarterly Monitoring has been conducted by 3 rd Party Surveyor. Will be conducted again on June 2023.	Nil	Done	Zaw/Tin/Wai
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Wai
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Wai
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Wai
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Wai

Date / Time of inspection: 31 Mar 2023

Location: Designated points

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager) and 3rd Party Surveyor.

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed build-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Thet
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Thet
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Thet
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Quarterly Monitoring has been conducted by 3 rd Party Surveyor. Will be conducted again on June 2023.	Nil	Done	Zaw/Tin/Thet
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Thet
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Thet
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Thet
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Thet

Date / Time of inspection: 30 Apr 2023

Location: Designated points

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed build-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Thet
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Thet
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Thet
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Quarterly Monitoring has been conducted by 3 rd Party Surveyor. Will be conducted again on June 2023.	Nil	Done	Zaw/Tin/Thet
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Thet
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Thet
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Thet
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Thet

Date / Time of inspection: 31 May 2023

Location: Designated points

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2023

Air Quality Management Monitoring Monthly Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken Date	Verified by
1	Built-in dry low NOx burners to reduce NOx emission at stack to below 25ppm at all times?	Yes		Installed build-in Dry Low NOx to reduce NOx emission at both gas turbines. Regular maintenance has been carrying out by maintenance team.	Nil	Done	Zaw/Tin/Thet
2	Monitor ambient air quality in and around the Project site as per the Environment Monitoring Program formulated for the Project.	Yes		Instrument team is carrying out daily monitoring and results are recorded daily.	Nil	Done	Zaw/Tin/Thet
3	Continuous emission monitoring (CEMS) systems installed common for both main stack and bypass stack for real-time data collection on emission status from the Plant monitoring emission concentrations of NOx as NO2, PM, SO2, O2, moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin/Thet
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Quarterly Monitoring has been conducted by 3 rd Party Surveyor. Will be conducted again on June 2023.	Nil	Done	Zaw/Tin/Thet
5	Annual CEMS validation for NOx, CO, PM2.5 and O2 at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin/Thet
6	Are there any emission of dark smoke from equipment and machinery?		No	No emission of dark smoke from the equipment and machinery was found during the month.	NIL	Done	Zaw/Tin/Thet
7	Are there evidences of open burning of waste carried out?		No	No evidence of open burning of waste was carried out during the month.	NIL	Done	Zaw/Tin/Thet
8	Are there operational & maintenance activities to create high dust emission on site and taken adequate control measures?		No	No operation and maintenance activity observed during the month.	NIL	Done	Zaw/Tin/Thet

Date / Time of inspection: 30 Jun 2023**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager) and 3rd Party Surveyor.

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house, and canteen and updating regularly.	Nil	Done	Zaw/Tin/Wai
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Wai
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Wai
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Wai
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Wai

Date: 31 Jan 2023

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

Civil Disturbance Drill was conducted (Tabletop exercise)

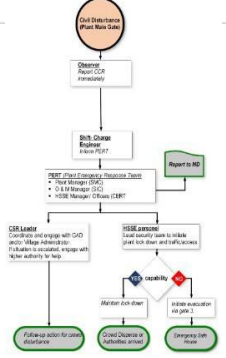
Scenario

Civil Disturbance

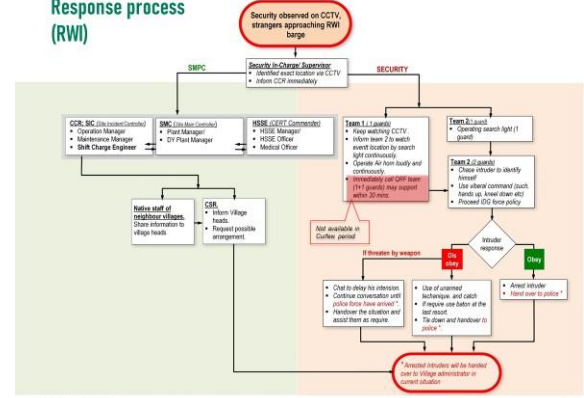
Date: 25/01/2023
 Time: 09:30 AM
 Location: Main Gate
 Event: Security at Maingate observed crowd has started to gather to protest the plant operation.



Crowd



Response process (RWI)



Regular Inspections for Emergency Preparedness January 2023

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Verification of Rectification			
					Action Done?		Person In-Charge for Rectification (Signature / Date)	Verified Personnel (Signature / Date)
					Yes	No		
1	GT #12 HRSG #12 & External Surrounding Area	Tested FH#09 and in good condition	Good observation	Regular function test	Yes		Tin Ko Ko	HSSE/Ops/IDG
2	GT #12 HRSG #12 & External Surrounding Area	We tested plant internal telephone near GT#12. It is good condition and the voice is also good	We can communicate during emergency situation	Regular Test	Yes		Thet Paing	Khaing Zar Aung

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb, 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house, and canteen and updating regularly.	Nil	Done	Zaw/Tin/Wai
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Wai
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Wai
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Wai
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Wai

Date: 28 Feb 2023

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

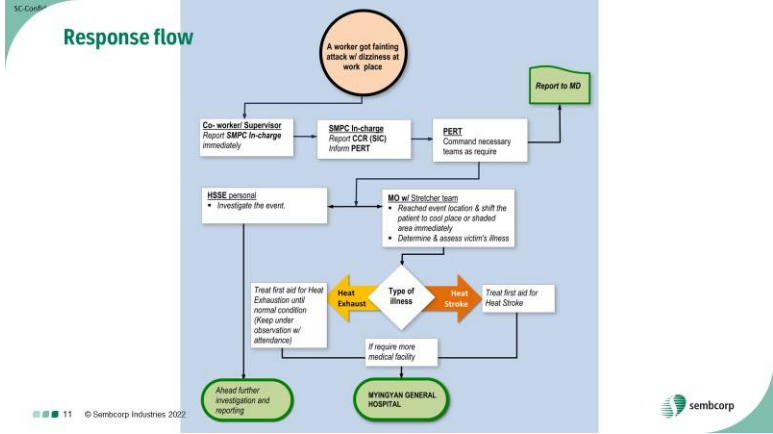
Heat Injury Emergency Response (Table-Top Exercise)

Scenario



Discover one contractor suffer with heat injury:

Time: 14:30 pm
 Location: Warehouse area
 Event: One sub-contractor, tree trimmer get sudden onset of fainting attack and dizziness and follow by heavy sweating, cool and clammy body.
 Discoverer: A technician near by





Regular Inspections for Emergency Preparedness February 2023

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Verification of Rectification			
					Action Done?		Person In-Charge for Rectification (Signature / Date)	Verified Personnel (Signature / Date)
					Yes	No		
1	Near Warehouse and Cooling Tower	FH#01 is tested with foam nozzle and observed in good condition. 	Good Observation.					
2	Switch yard electrical room	First aid box was inspected and observed in good condition 	Good Observation.					

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house and canteen and updating regularly.	Nil	Done	Zaw/Tin/Wai
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Wai
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Wai
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Wai
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Wai
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Wai

Date: 30 Mar 2023

Location: Myingyan 225MW CCPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

Rescue at Height Emergency Response (Table-Top Exercise)

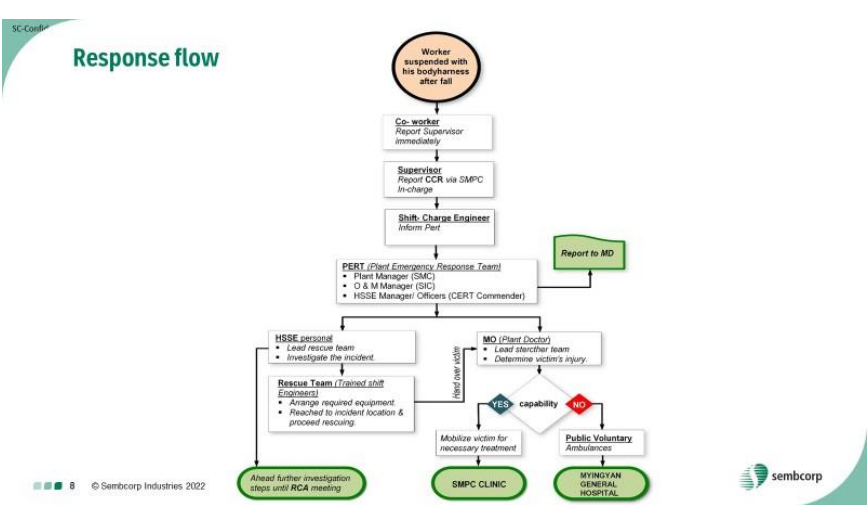
Scenario

A worker conducting a scaffold erection activity fell from the scaffolding platform and scaffold worker (IP) suspended while working at height with his body harness.



Date: 29/ Mar/ 2023
Time: 1:30 pm
Location: WTP



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Regular Inspections for Emergency Preparedness March 2023

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Verification of Rectification			
					Action Done?		Person In-Charge for Rectification (Signature / Date)	Verified Personnel (Signature / Date)
					Yes	No		
1	GT#11 Area	Function Tested FH#03. Water is good <u>condition</u> 	Positive Observation	Regular Test	Yes		HSSE/Ops/IDG Tin Ko Ko	
2	GT#11, HRS#G#11 Area	We tested the eye wash shower system near HRS#G#11 chemical skid area. The system is working and good <u>condition</u> 	Positive Observation	Regular Test	Yes		Ops Khaing Zar Aung Kyaw Lin Hlike	

Sembcorp Myingyan Power Company Limited

ESMP Check list for Apr 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house and canteen and updating regularly.	Nil	Done	Zaw/Tin/Thet
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Thet
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Thet
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Thet
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Thet

Date: 30 Apr 2023

Location: Myingyan 225MW CCPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

Earthquake Emergency Response drill (Table-Top Exercise) April 2023

Scenario

Occur an earthquake.

Date: 28th April 2023

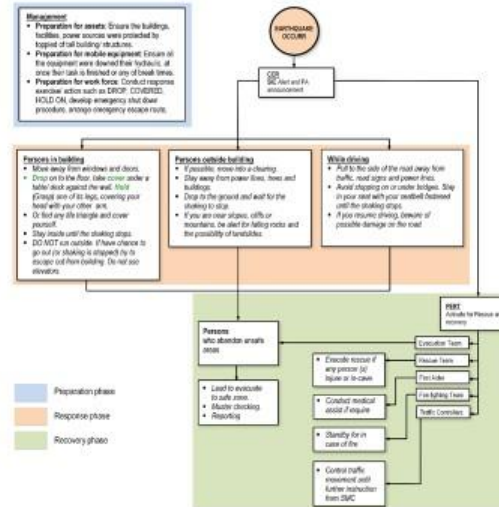
Time: 02:00 pm

Event: Earthquake (5.0 Magnitude) has shaken North- South direction.

Shift-Charge Engineer in CCR: Act as the SIC and immediately raise up emergency alert (raising alarm).



Response flow



Regular Inspections for Emergency Preparedness April 2023

Mwingan 225MW CCPP Project

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Action Done?		Verification of Rectification	
					Yes	No	Person In-Charge for Rectification (Signature / Date)	Verified Personnel (Signature / Date)
1	In front of Admin Building	Fire Hydrant – 16 was inspected and tested, and found that it is good in condition and get enough water pressure, Operations Department is actively collaborated in the testing.	Good observation	N/A	Yes		HSSE/Ops/IDG	Tin Ko [Signature]
2	Beside Admin Building (Near PTW office)	Found that PVC drum used for air-con maintenance was left with barricade and tag.	Good observation	N/A	Yes		HSSE	Tin Ko [Signature]

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house and canteen and updating regularly.	Nil	Done	Zaw/Tin/Thet
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Thet
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Thet
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Thet
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Thet

Date: 30 May 2023

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

Scaffold Collapse Emergency Response Drill May 2023

Scenario

Discoverer: Anyone who is firstly see incident situation shall raise alert and straightway inform plant key personnel and any of the PERT member. Warn to other that stay away from area until PERT arrive.

Date: 27/05/2023
 Time: 09:30 am
 Location: Warehouse/Workshop





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Regular Inspections for Emergency Preparedness May 2023

Mwingavan 225MW CCPP Project

HSSE-INSPECTION

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Verification of Rectification			
					Action Done?		Person in-charge for the Rectification (Signature/Date)	Verified Personnel (Signature/Date)
					Yes	No		
1	Chemical dosing skid	Eyewash and shower stations was tested and found it is in good condition.	Good observation 	N/A	N/A	N/A	N/A	N/A
2	HRSG#11	Conducted visual check fire hose reel No. 19 & 20 and found in good condition. 	Good observation	N/A	N/A	N/A	N/A	N/A

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2023

Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

No	Description	Yes	No	Details of Observation	Corrective Action to be Taken	Action taken date	Verified by
1	Emergency contact list displayed in prominent area, such as, notice board, resting shelters?	Yes		Displayed at offices notice boards, security guard house and canteen and updating regularly.	Nil	Done	Zaw/Tin/Thet
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin/Thet
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin/Thet
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin/Thet
6	Emergency response team was trained to deal with emergency situation? - First Aid - Firefighting - Rescue	Yes		Plant Emergency Response team is trained to fight fire, practice basic first aid and search & rescue.	Nil	Done	Zaw/Tin/Thet
7	Adequate number of emergency response team in place?	Yes		Plant emergency response team is established in accordance with Emergency Response Plan.	Nil	Done	Zaw/Tin/Thet

Date: 30 Jun 2023

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager), Aung Soe Paing (Security)

Scaffold Collapse Emergency Response Drill June 2023

Scenario

A field technical was checking a equipment as a routine job at Water treatment Plant, he suddenly tripped over a steel bar which caused his right elbow impacted the concrete floor. (IP TRIPPED & FELL DOWN)

Discoverer: Injured person just informed to other field technical or Anyone who is firstly see incident situation shall raise alert and straightway inform plant key personnel and any of the PERT member.

Date: 27/06/2023
 Time: 01:30 pm
 Location: Water Treatment Plant






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Regular Inspections for Emergency Preparedness June 2023

Mavinava 225MW CCPP Project HSSE-INSPECTION

S/N	Location	Description for Health, Safety & Environmental Observation & Safe Unsafe Condition Observation	Corrective & Preventive Actions To Be Taken	Due Date	Verification of Rectification		
					Action Done? Yes No	Person In-Charge for Rectification (Signature / Date)	Verified Personnel (Signature / Date)
1	Electrical Building Internal	Tested the communication internal phones and these are in good conditions and voices are clear. 	Good observation 	N/A	Yes	HSSE/Ops	Tin Ko 錫
2	Electrical Building External	Checked and tested the fire hose reel no.18. Found that good in condition and good running pressure. 	Good observation	N/A	Yes	HSSE/Ops	Tin Ko 錫

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan, 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; <ul style="list-style-type: none"> ▪ Steam turbine building ▪ GT#1, HRSG #1 ▪ GT#2, HRSG #2 	<ul style="list-style-type: none"> ▪ Conduct training of noise protection. ▪ Issue ear protector 	Done	Zaw/Tin/Wai
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Wai
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Will conduct quarterly monitoring by 3 rd party surveyor on Mar 2023.	Nil	Ongoing	Zaw/Tin/Wai
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Wai
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Wai

Date / Time: 31 Jan 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb, 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; <ul style="list-style-type: none"> ▪ Steam turbine building ▪ GT#1, HRSG #1 ▪ GT#2, HRSG #2 	<ul style="list-style-type: none"> ▪ Conduct training of noise protection. ▪ Issue ear protector 	Done	Zaw/Tin/Wai
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Wai
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Will conduct quarterly monitoring by 3 rd party surveyor on Mar 2023.	Nil	Ongoing	Zaw/Tin/Wai
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Wai
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Wai

Date / Time: 28 Feb 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; <ul style="list-style-type: none"> ▪ Steam turbine building ▪ GT#1, HRSG #1 ▪ GT#2, HRSG #2 	<ul style="list-style-type: none"> ▪ Conduct training of noise protection. ▪ Issue ear protector 	Done	Zaw/Tin/Wai
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Wai
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Conducted quarterly monitoring by 3 rd party surveyor. Will be conducted again on June 2023.	Nil	Done	Zaw/Tin/Wai
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Wai
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Wai

Date / Time: 30 Mar 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; ▪ Steam turbine building ▪ GT#1, HRSG #1 ▪ GT#2, HRSG #2	▪ Conduct training of noise protection. ▪ Issue ear protector	Done	Zaw/Tin/Thet
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Thet
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Will conduct quarterly monitoring by 3rd party surveyor on June 2023.	Nil	Done	Zaw/Tin/Thet
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Thet
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Thet

Date / Time: 30 April 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; <ul style="list-style-type: none">▪ Steam turbine building▪ GT#1, HRSG #1▪ GT#2, HRSG #2	<ul style="list-style-type: none">▪ Conduct training of noise protection.▪ Issue ear protector	Done	Zaw/Tin/Thet
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Thet
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Will conduct quarterly monitoring by 3rd party surveyor on June 2023.	Nil	Done	Zaw/Tin/Thet
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Thet
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Thet

Date / Time: 31 May 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Ny Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2023

Noise and Vibration Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action taken date	Verified by
1	Are there operation & maintenance noise activities and area identified?	Yes		Noise sources situated in; <ul style="list-style-type: none"> ▪ Steam turbine building ▪ GT#1, HRSG #1 ▪ GT#2, HRSG #2 	<ul style="list-style-type: none"> ▪ Conduct training of noise protection. ▪ Issue ear protector 	Done	Zaw/Tin/Thet
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin/Thet
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Conducted quarterly monitoring by 3 rd party surveyor, and results are well below NEQG guideline values. Will be conducted again on Sep 2023.	Nil	Done	Zaw/Tin/Thet
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin/Thet
8	Is the Plant Management discussed about noise issue in meeting, such as workforce training on noise protection and prevention?	Yes		Nil	Nil	Done	Zaw/Tin/Thet

Date / Time: 30 June 2023

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Jan 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Wai
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Wai
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Wai
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 28 Jul 2023.	Nil	Done	Zaw/Tin/Wai
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Wai

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz.	Nil	Done	Zaw/Tin/Wai
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Wai
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Wai
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Wai
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Wai
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Wai
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Wai
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Wai

Date / Time: 31 Jan 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer) and Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Feb 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Wai
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Wai
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Wai
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 26 Aug 2023.	Nil	Done	Zaw/Tin/Wai
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Wai

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz.	Nil	Done	Zaw/Tin/Wai
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Wai
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Wai
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Wai
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Wai
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Wai
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Wai
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Wai

Date / Time: 28 Feb 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Mar 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Wai
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Wai
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Wai
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 30 Mar 2023.	Nil	Done	Zaw/Tin/Wai
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Wai
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Wai

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz. DuPont (STOP observation)	Nil	Done	Zaw/Tin/Wai
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Wai
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Wai
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Wai
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Wai
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Wai
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Wai
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Wai

Date / Time: 30 Mar 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for April 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Thet
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Thet
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Thet
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 30 Mar 2023.	Nil	Done	Zaw/Tin/Thet
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Thet

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz. DuPont (STOP observation)	Nil	Done	Zaw/Tin/Thet
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Thet
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Thet
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Thet
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Thet
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Thet
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Thet
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Thet

Date/Time: 30 April 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for May 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Thet
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Thet
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Thet
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 30 Mar 2023.	Nil	Done	Zaw/Tin/Thet
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Thet

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz. DuPont (STOP observation)	Nil	Done	Zaw/Tin/Thet
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Thet
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Thet
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Thet
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Thet
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Thet
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Thet
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Thet

Date/Time: 30 May 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Sembcorp Myingyan Power Company Limited

ESMP Checklist for June 2023

Workers Occupational Health and Safety Control measure implementation & monitoring checklist (Operational Phase)

No.	Description	Yes	No	Details of Observation / Location	Corrective Action to be Taken	Action taken date	Verified by
1	Is the HSE policy authorized by company top management and communicated to the persons working under the control of organization?	Yes		QHSE policy has signed by company top management and displayed in all the HSSE notice boards, all meeting rooms and attached in SIC training as well.	Nil	Done	Zaw/Tin/Thet
2	Are personnel working under the organization comply with safe working practices to prevent from OHS risk associated to the activities. Are Permit-To-Work system implemented by the Plant such as Hot-work, working at height, lifting operation, Excavation and Confined space work, etc.?	Yes		Implemented Permit to work system.	Nil	Done	Zaw/Tin/Thet
3	Are trainings and consultation program for workers who involved in high risk activities conducted by the O&M and Contractors?	Yes		Workers are trained for safe work procedures. Risk assessment conducted for all work activities. Toolbox talk conducted prior to commencing work activity. Conduct Emergency response awareness according to SIC.	Nil	Done	Zaw/Tin/Thet
4	Are HSSE meetings conducted accordingly, such as Daily HSE and O&M meeting, Tool box meeting, HSSE Committee meeting, etc.?	Yes		Conducting daily HSE and O&M meeting. Conducting daily Permit to Work Meeting. Monthly HSSE Committee meeting on 30 Mar 2023.	Nil	Done	Zaw/Tin/Thet
5	Are all the near-miss, incidents, accidents, and occupational diseases, dangerous occurrence at the project activity area, plant and workers camp investigated and reported?	Yes		Nil	Nil	Done	Zaw/Tin/Thet
6	In-house rules are implemented and monitoring for the compliances.	Yes		12 life-saving rules are implemented and displayed at strategic locations. Stop Data Pro platform is used to report unsafe condition and unsafe act and to take corrective actions.	Nil	Done	Zaw/Tin/Thet

7	Is HSE promotional activities for workforce implemented by Plant Management?	Yes		Incentive awards giving out for HSSE observation submission and Life Saving Rule safety quiz. DuPont (STOP observation)	Nil	Done	Zaw/Tin/Thet
8	Is there implemented procedure on evaluation, selection and control of sub-contractor? Is the daily monitoring on labor and working condition conducted by contractor, especially, no child and forced labor will be employed by contractors?	Yes		Safe Working Procedure for Contractor Management and Contractor Requirement has been implemented.	Nil	Done	Zaw/Tin/Thet
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin/Thet
10	Are equipment, electrical tools, machineries, lifting gears, and scaffold inspected by competent personnel?	Yes		Inspected by appointed inspector before task.	Nil	Done	Zaw/Tin/Thet
11	Are Method Statements, Risk Assessments & Safe Work Procedures complying with required work activities that will be potential harm to workforce?	Yes		PTW attached with MS and RA are required to be approved before tasks.	Nil	Done	Zaw/Tin/Thet
12	Is there any form of control on movement of hazardous substances such as chemicals? Any PPEs compliance on handling of such chemicals?	Yes		Hazardous substances are controlled by complying with safe handling and storage of chemical procedures. Workers are mandatory to comply with PPEs requirement as stated in SDS.	Nil	Done	Zaw/Tin/Thet
13	Are firefighting equipment's provided and inspected/tested regularly? Any damaged firefighting equipment replaced timely?	Yes		Inspecting monthly and damaged are replaced timely if any.	Nil	Done	Zaw/Tin/Thet
14	Pre-employment medical check and routine health screen conducted? Annual audiometric test conducted for the persons working under the organization?	Yes		Pre-employment medical check was carried out. Annual audiometric is planned to be conducted on May.	Nil	Done	Zaw/Tin/Thet

Date/Time: 30 June 2023

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer), Zaw Moe Aung (HSSE Manager).

Semcorp Myingyan Power Company Limited

ESMP Check list for Jan 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Wai
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility.	Nil	Done	Zaw/Tin/Wai
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Wai
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Wai
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Quarterly Water Quality Monitoring has been conducted by 3 rd Party Lab. Will be conducted on Mar 2023 as per planned schedule.	Nil	Ongoing	Zaw/Tin/Wai
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Wai
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Wai
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Wai

Date / Time: 31 Jan 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Semcorp Myingyan Power Company Limited

ESMP Check list for Feb 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Wai
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin/Wai
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Wai
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Wai
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Quarterly Water Quality Monitoring has been conducted by 3 rd Party Lab. Will be conducted on Mar 2023 as per planned schedule.	Nil	Ongoing	Zaw/Tin/Wai
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Wai
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Wai
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Wai

Date / Time: 28 Feb 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Semcorp Myingyan Power Company Limited

ESMP Check list for Mar 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Wai
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin/Wai
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Wai
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Wai
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Conducted Water Quality Monitoring by 3 rd Party Lab. Will be conducted again on June 2023 as per planned schedule.	Nil	Done	Zaw/Tin/Wai
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Wai
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Wai
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Wai

Date / Time: 30 Mar 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Thet
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin/Thet
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Thet
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Thet
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Water Quality Monitoring was conducted by 3 rd Party Lab in March. Will be conducted again on June 2023 as per planned schedule.	Nil	Done	Zaw/Tin/Thet
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Thet
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Thet
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Thet

Date / Time: 30 April 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Semcorp Myingyan Power Company Limited

ESMP Check list for May 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Thet
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin/Thet
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Thet
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Thet
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Water Quality Monitoring was conducted by 3 rd Party Lab in March. Will be conducted again on June 2023 as per planned schedule.	Nil	Done	Zaw/Tin/Thet
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Thet
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Thet
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Thet

Date / Time: 31 May 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2023

Surface Water Management Monitoring Checklist Form (Operational Phase)

S/N	Description	Yes	No	Details of Observation	Action to be Taken	Action taken date	Verified by
1	Treated by oil/water separators before discharge to central monitoring basin (CMB)	Yes		Oil/Water separator is functioning according to design.	Nil	Done	Zaw/Tin/Thet
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin/Thet
3	Liquid effluents arising from operations will be treated to the applicable IFC guideline prior to discharge. The sewage from the entire plant area will be collected and treated in a sewage treatment plant (STP). No untreated sewage will be directly discharged into the Ayeyarwady River, or disposed of on land, for the duration of the project life cycle.	Yes		STP is available at site.	Nil	Done	Zaw/Tin/Thet
4	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into sanitary sewers via grease traps. The sanitary sewer should then be treated prior to discharge or reuse as greywater.	Yes		All basins including pantry room are all routed to sewage treatment plant.	Nil	Done	Zaw/Tin/Thet
5	Conduct monitoring of waste water discharge point at Ayeyarwady River (Seik Nyan Pumping Station) frequency of once every quarterly.	Yes		Water Quality Monitoring has been conducted by 3 rd Party Lab in June. Will be conducted again on Sep 2023 as per planned schedule.	Nil	Done	Zaw/Tin/Thet
6	Implement discharge system shutdown in event that discharge temperature of effluent exceeds standard.	Yes		Discharge valve is controlled by automated system and will not be opened if the effluent exceeds standard.	Nil	Done	Zaw/Tin/Thet
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on July.	Nil	Done	Zaw/Tin/Thet
8	Store and handle all hazardous substances in accordance with their SDS and readily accessible for reference.	Yes		SDS for all chemicals are displayed at local sites and also stored as digital copies for reference.	Nil	Done	Zaw/Tin/Thet

Date / Time: 30 June 2023

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Thet Nyi Nyi Shwe (HSSE Officer) and Zaw Moe Aung (HSSE Manager)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Wai
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Wai
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Wai
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Wai
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Wai
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Wai

Date / Time: 31 Jan 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Wai
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Wai
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Wai
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Wai
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Wai
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Wai

Date / Time: 28 Feb 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Wai
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Wai
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Wai
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Wai
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Wai
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Wai
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Wai

Date / Time: 30 Mar 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Thet
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Thet
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Thet
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Thet
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Thet
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Thet

Date / Time: 30 April 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Thet
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Thet
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Thet
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Thet
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Thet
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Thet

Date / Time: 31 May 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2023

Waste (Hazardous and Non-Hazardous) Management Monitoring Checklist Form (Operational Phase)

S/No	Description	Yes	No	Details of Observation / Location	Action to be Taken	Action Taken date	Verified by
1	What kinds of waste are generated are identified (by waste category)?	Yes		Hazardous and non-hazardous wastes are generated and segregated.	Nil	Done	Zaw/Tin/Thet
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin/Thet
3	Is the waste stored in a way that does not adversely affect human health and the environment?	Yes		Stored in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
4	Is the waste storage site in accordance with environmental requirements?	Yes		Stored in covered waste bin and designated storage area.	Nil	Done	Zaw/Tin/Thet
5	Are hazardous wastes stored in accordance with the requirements?	Yes		Stored in designated area in accordance with Hazardous and non-hazardous waste management procedure.	Nil	Done	Zaw/Tin/Thet
6	Is the packaging marked/labelled with information on the origin of materials used?	Yes		Wastes containers are marked/labelled with information of the origin of materials used.	Nil	Done	Zaw/Tin/Thet
7	Are waste clean-up measures being undertaken on regular basis?	Yes		Regular mass housekeeping conducted on every Friday. Cleaners are assigned at locations and undertaking proper clean-up of wastes with the schedule planned.	Nil	Done	Zaw/Tin/Thet
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP Training will be conducted to all staffs on July 2023.	Nil	Ongoing	Zaw/Tin/Thet

Date / Time: 30 June 2023

Location: Operation area

Role of Individual Undertaking Monitoring: HSE and Operation Team