

Our Ref: SMPC/MM/2022-055

19 August 2022

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 (Jan ~ June 2022)

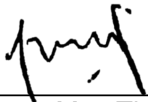
Dear Sir,

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 Greenhouse Gas (GHG) Report in the form of 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 2022.

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. ESMP - Air Quality Management Checklist
4. ESMP - Emergency Preparedness Checklist
5. ESMP - Noise & Vibration Checklist
6. ESMP - OSH Management Checklist
7. ESMP - Surface Water Management Checklist
8. ESMP - Waste Management Checklist

CC:

Managing Director

Electric Power Generation Enterprise
Ministry of Electricity and Energy
Office 27, Naypyitaw.

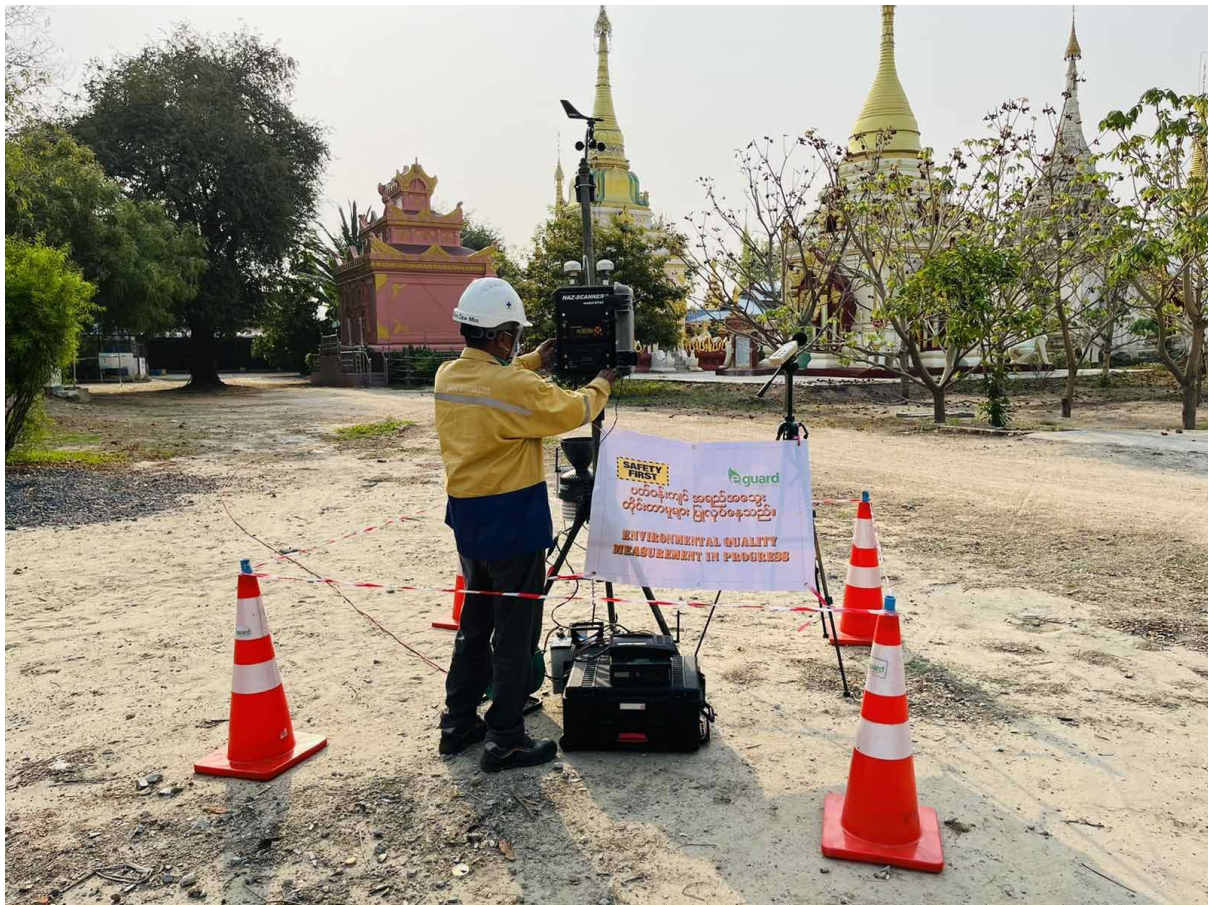
Director

Department of Environmental Conservation
Mandalay Region Department of Environmental Conservation,
Near Taungthaman Inn, ADB-II Office front street, Nan Daw Yar Ward,
Amarapura Township.



Sembcorp Myingyan Power Co., Ltd.

Environmental Monitoring Report (Air Quality Monitoring)



Prepared

Ref: 01.04.2022 to 05.04.2022 (Air Quality Report)

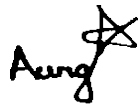



22 April 2020

E Guard Environmental Services

Report Review Form

Report Title: Environmental Quality Monitoring Report in April 2022 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, Ward No. (4), 8th Mile, Mayangone Township, Yangon 11062, Myanmar. Tel: 01 667953, Fax: 01 6667953, info@eguardservices.com Mobile +959 797005199

Prepared by: U Aung Moe Oo	Position: Project Associate
Submitted Date: 22/04/2022	Signature: 
Checked by: U Aung Myint Myat	Position: Associate Consultant
Checked Date: 22/04/2022	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

<i>Ambient Air Quality (4 locations)</i>	
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°21'58.048", Long- 95°20'51.346"	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 01 April 2022 to 05 April 2022. The measured results are compared with national emission guidelines. Based on the results of air quality monitoring, most 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	5.45	3	3.53	4.09	50	µg/m ³	24hrs
PM _{2.5}	2.91	1.52	1.93	2.16	25	µg/m ³	24hrs
CO	0.00007	0.00006	0.00015	0.0001	9	ppm	8hrs
CO ₂	410.27	422.01	417.36	453.83	5000	ppm	8hrs
SO ₂	0.035	0.058	0.14	0.098	20	µg/m ³	24hrs
NO ₂	4.29	4.45	5.08	4.51	200	µg/m ³	1hrs

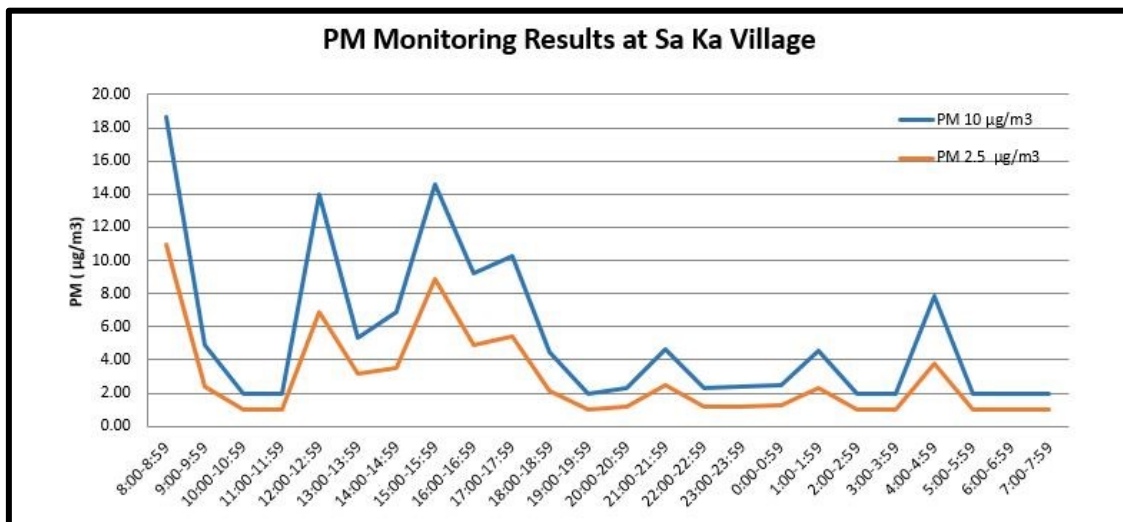


Figure 4. 1 PM Monitoring Results at Sa Ka Village

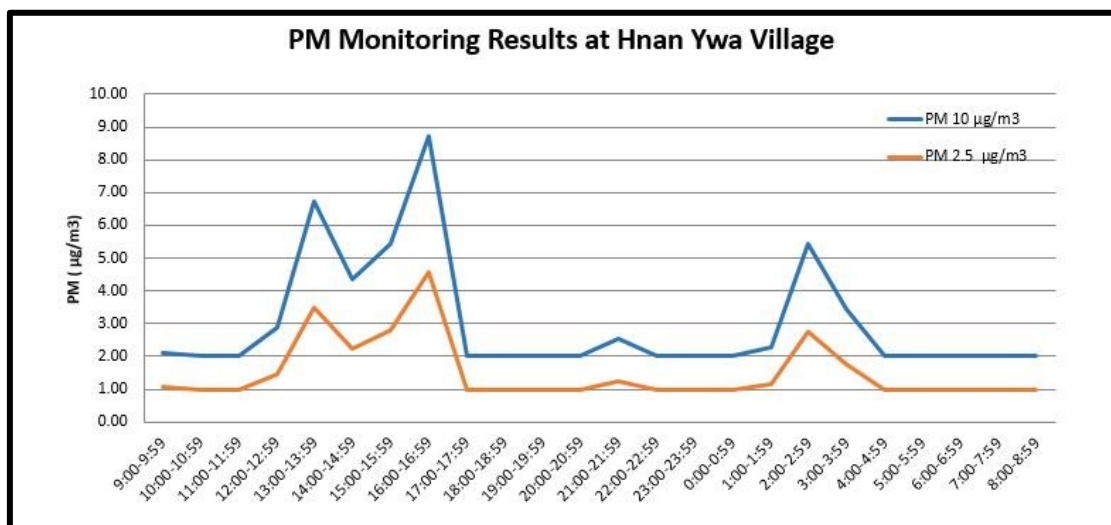


Figure 4. 2 PM Monitoring Results at Hnan Ywa Village

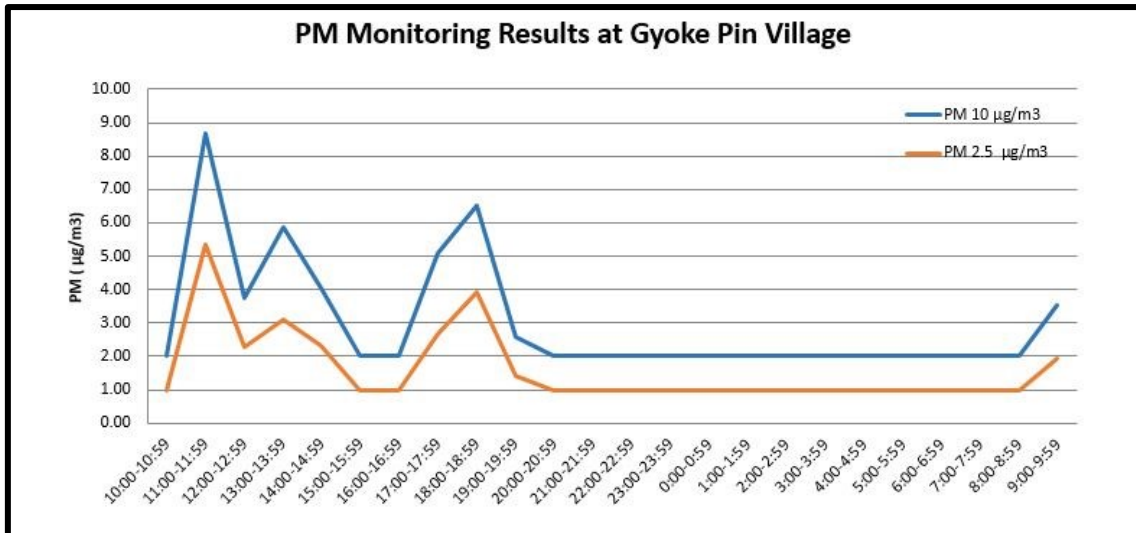


Figure 4. 3 PM Monitoring Results at Gyoke Pin Village

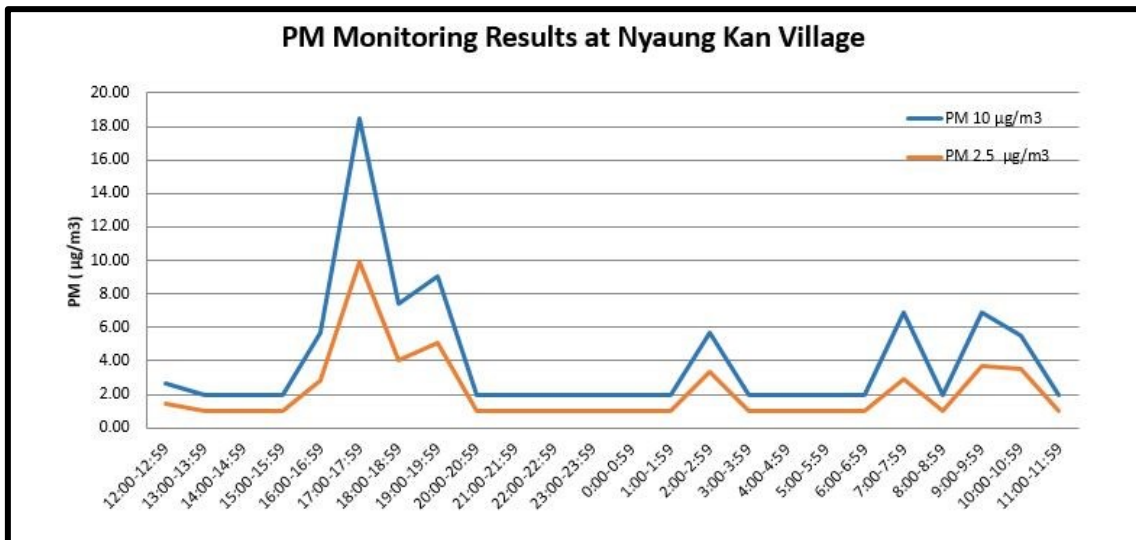


Figure 4. 4 PM Monitoring Results at Nyaung Kan Village

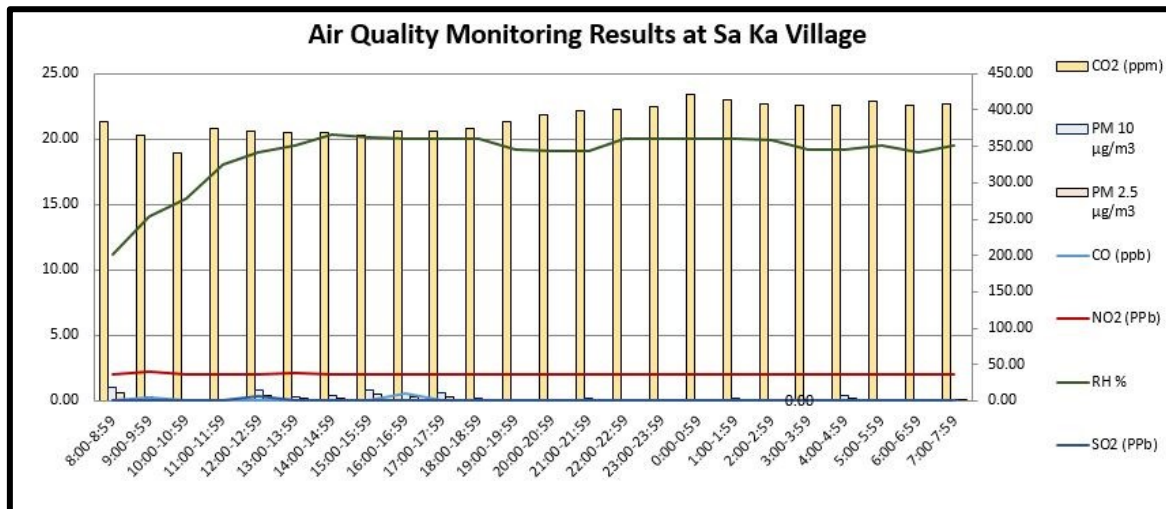


Figure 4. 5 Fluctuation of Air Pollutants during dial cycle (Sa Ka Village)

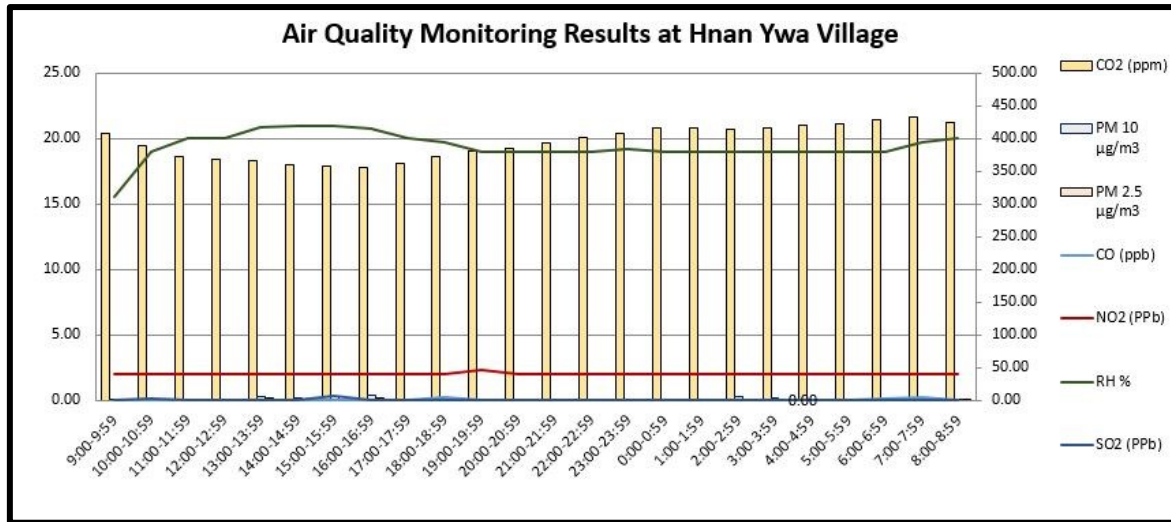


Figure 4. 6 Fluctuation of Air Pollutants during dial cycle (Hnan Ywa Village)

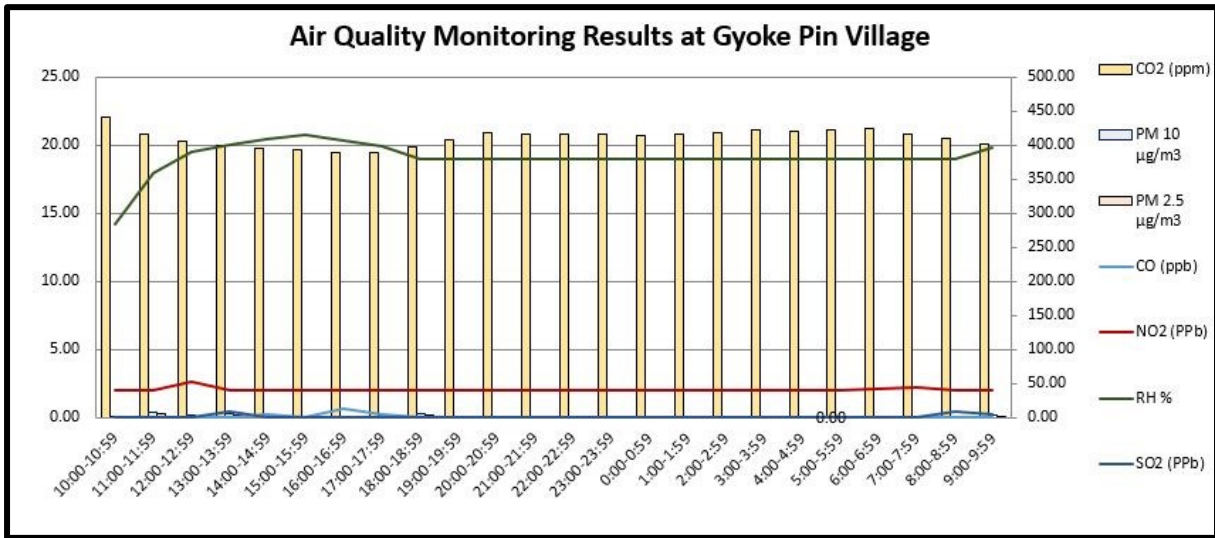


Figure 4. 7 Fluctuation of Air Pollutants during dial cycle (Gyoke Pin Village)

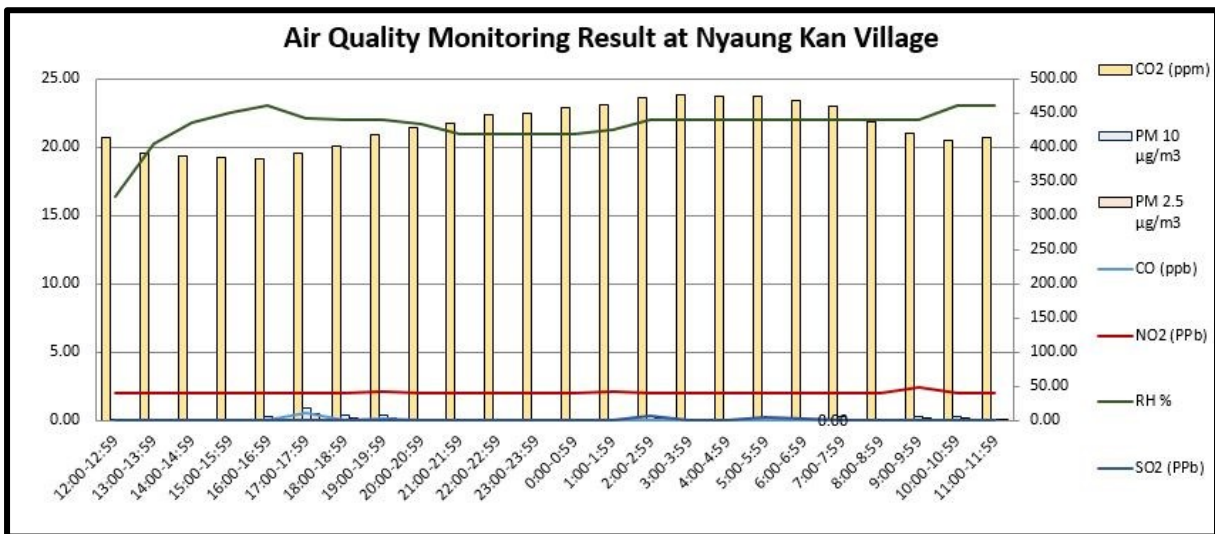


Figure 4. 8 Fluctuation of Air Pollutants during dial cycle (Nyaung Kan Village)

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)
01.04.2022	8:00-8:59	Average	384.10	0.00	2.00	18.68	10.97	11.18	0.00
01.04.2022	9:00-9:59	Average	364.88	0.25	2.28	4.90	2.40	14.05	0.00
01.04.2022	10:00-10:59	Average	340.25	0.00	2.00	2.00	1.00	15.45	0.00
01.04.2022	11:00-11:59	Average	374.50	0.00	2.00	2.00	1.00	18.10	0.00
01.04.2022	12:00-12:59	Average	371.68	0.00	2.00	14.02	6.92	19.00	0.32
01.04.2022	13:00-13:59	Average	368.58	0.00	2.17	5.33	3.15	19.48	0.00
01.04.2022	14:00-14:59	Average	368.83	0.00	2.00	6.85	3.55	20.33	0.00
01.04.2022	15:00-15:59	Average	365.15	0.00	2.00	14.55	8.85	20.17	0.00
01.04.2022	16:00-16:59	Average	370.28	0.58	2.00	9.22	4.93	20.00	0.00
01.04.2022	17:00-17:59	Average	370.10	0.00	2.00	10.30	5.45	20.00	0.00
01.04.2022	18:00-18:59	Average	374.97	0.00	2.00	4.48	2.10	20.00	0.00
01.04.2022	19:00-19:59	Average	383.12	0.00	2.00	2.00	1.00	19.23	0.00
01.04.2022	20:00-20:59	Average	393.95	0.00	2.00	2.32	1.22	19.05	0.00
01.04.2022	21:00-21:59	Average	399.25	0.00	2.00	4.62	2.52	19.07	0.00
01.04.2022	22:00-22:59	Average	401.75	0.00	2.05	2.35	1.18	19.98	0.00
01.04.2022	23:00-23:59	Average	404.90	0.00	2.00	2.38	1.17	20.00	0.00
02.04.2022	0:00-0:59	Average	421.97	0.00	2.00	2.47	1.23	20.00	0.00
02.04.2022	1:00-1:59	Average	414.28	0.00	2.00	4.58	2.33	20.00	0.00
02.04.2022	2:00-2:59	Average	408.17	0.00	2.00	2.00	1.00	19.97	0.00
02.04.2022	3:00-3:59	Average	406.03	0.00	2.00	2.00	1.00	19.18	0.00
02.04.2022	4:00-4:59	Average	406.32	0.00	2.00	7.87	3.82	19.18	0.00
02.04.2022	5:00-5:59	Average	411.15	0.00	2.00	2.00	1.00	19.48	0.00
02.04.2022	6:00-6:59	Average	406.17	0.00	2.00	2.00	1.00	19.00	0.00
02.04.2022	7:00-7:59	Average	408.05	0.00	2.00	2.00	1.00	19.53	0.00
Average			388.27	0.03	2.02	5.45	2.91	18.81	0.01
1 hour Minimum			340.25	0.00	2.00	2.00	1.00	11.18	0.00
1 hour Maximum			421.97	0.58	2.28	18.68	10.97	20.33	0.32

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)
02.04.2022	9:00-9:59	Average	408.03	0.00	2.00	2.10	1.07	15.55	0.00
02.04.2022	10:00-10:59	Average	388.35	0.00	2.00	2.00	1.00	18.98	0.20
02.04.2022	11:00-11:59	Average	372.53	0.00	2.00	2.00	1.00	20.00	0.00
02.04.2022	12:00-12:59	Average	368.35	0.00	2.00	2.90	1.45	20.02	0.00
02.04.2022	13:00-13:59	Average	366.95	0.00	2.00	6.75	3.48	20.82	0.00
02.04.2022	14:00-14:59	Average	359.37	0.00	2.00	4.35	2.25	21.00	0.00
02.04.2022	15:00-15:59	Average	356.90	0.00	2.00	5.45	2.80	21.00	0.33
02.04.2022	16:00-16:59	Average	355.72	0.03	2.00	8.70	4.55	20.73	0.00
02.04.2022	17:00-17:59	Average	361.47	0.00	2.00	2.00	1.00	20.00	0.00
02.04.2022	18:00-18:59	Average	372.45	0.22	2.00	2.00	1.00	19.72	0.00
02.04.2022	19:00-19:59	Average	381.65	0.00	2.37	2.00	1.00	19.00	0.00
02.04.2022	20:00-20:59	Average	385.98	0.00	2.00	2.00	1.00	19.00	0.00
02.04.2022	21:00-21:59	Average	394.03	0.00	2.00	2.55	1.25	19.00	0.00
02.04.2022	22:00-22:59	Average	402.42	0.00	2.00	2.00	1.00	19.00	0.00
02.04.2022	23:00-23:59	Average	407.50	0.00	2.00	2.00	1.00	19.22	0.00
03.04.2022	0:00-0:59	Average	415.85	0.00	2.00	2.00	1.00	19.02	0.00
03.04.2022	1:00-1:59	Average	415.60	0.00	2.00	2.30	1.15	19.00	0.00
03.04.2022	2:00-2:59	Average	414.83	0.00	2.00	5.45	2.73	19.00	0.00
03.04.2022	3:00-3:59	Average	416.97	0.00	2.00	3.47	1.75	19.00	0.00
03.04.2022	4:00-4:59	Average	419.88	0.00	2.00	2.00	1.00	19.00	0.00
03.04.2022	5:00-5:59	Average	422.07	0.00	2.00	2.00	1.00	19.00	0.00
03.04.2022	6:00-6:59	Average	428.98	0.20	2.00	2.00	1.00	19.00	0.00
03.04.2022	7:00-7:59	Average	433.65	0.28	2.00	2.00	1.00	19.68	0.00
03.04.2022	8:00-8:59	Average	424.07	0.00	2.00	2.00	1.00	20.00	0.00
Average			394.73	0.03	2.02	3.00	1.52	19.41	0.02
1 hour Minimum			355.72	0.00	2.00	2.00	1.00	15.55	0.00
1 hour Maximum			433.65	0.28	2.37	8.70	4.55	21.00	0.33

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)
03.04.2022	10:00-10:59	Average	440.97	0.00	2.00	2.00	1.00	14.22	0.00
03.04.2022	11:00-11:59	Average	416.00	0.00	2.00	8.67	5.33	17.97	0.00
03.04.2022	12:00-12:59	Average	405.85	0.00	2.70	3.75	2.27	19.50	0.00
03.04.2022	13:00-13:59	Average	399.55	0.00	2.00	5.85	3.12	20.00	0.48
03.04.2022	14:00-14:59	Average	396.32	0.27	2.00	4.05	2.33	20.48	0.00
03.04.2022	15:00-15:59	Average	393.37	0.00	2.00	2.00	1.00	20.72	0.00
03.04.2022	16:00-16:59	Average	389.05	0.63	2.00	2.00	1.00	20.38	0.00
03.04.2022	17:00-17:59	Average	389.88	0.28	2.00	5.10	2.65	19.90	0.00
03.04.2022	18:00-18:59	Average	396.98	0.00	2.00	6.53	3.93	19.02	0.00
03.04.2022	19:00-19:59	Average	408.23	0.00	2.00	2.58	1.42	19.00	0.00
03.04.2022	20:00-20:59	Average	417.73	0.00	2.00	2.00	1.00	19.00	0.00
03.04.2022	21:00-21:59	Average	416.10	0.00	2.00	2.00	1.00	19.00	0.00
03.04.2022	22:00-22:59	Average	415.60	0.00	2.00	2.00	1.00	19.00	0.00
03.04.2022	23:00-23:59	Average	415.32	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	0:00-0:59	Average	414.15	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	1:00-1:59	Average	415.22	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	2:00-2:59	Average	417.78	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	3:00-3:59	Average	422.98	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	4:00-4:59	Average	420.87	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	5:00-5:59	Average	422.60	0.00	2.00	2.00	1.00	19.00	0.00
04.04.2022	6:00-6:59	Average	424.57	0.00	2.17	2.00	1.00	19.00	0.00
04.04.2022	7:00-7:59	Average	417.10	0.00	2.25	2.00	1.00	19.00	0.00
04.04.2022	8:00-8:59	Average	410.65	0.00	2.00	2.00	1.00	19.00	0.50
04.04.2022	9:00-9:59	Average	402.35	0.00	2.00	3.53	1.93	19.78	0.27
Average			411.22	0.05	2.05	3.00	1.62	19.08	0.05
1 hour Minimum			389.05	0.00	2.00	2.00	1.00	14.22	0.00
1 hour Maximum			440.97	0.63	2.70	8.67	5.33	20.72	0.50

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)
04.04.2022	12:00-12:59	Average	413.47	0.00	2.00	2.68	1.45	16.37	0.00
04.04.2022	13:00-13:59	Average	390.53	0.00	2.00	2.00	1.00	20.20	0.00
04.04.2022	14:00-14:59	Average	387.95	0.00	2.00	2.00	1.00	21.80	0.00
04.04.2022	15:00-15:59	Average	385.68	0.00	2.00	2.00	1.00	22.55	0.00
04.04.2022	16:00-16:59	Average	382.82	0.00	2.00	5.72	2.87	23.00	0.00
04.04.2022	17:00-17:59	Average	391.50	0.60	2.00	18.45	9.93	22.12	0.00
04.04.2022	18:00-18:59	Average	402.42	0.00	2.00	7.42	4.02	22.00	0.00
04.04.2022	19:00-19:59	Average	418.20	0.17	2.17	9.02	5.12	22.00	0.00
04.04.2022	20:00-20:59	Average	429.32	0.00	2.00	2.00	1.00	21.72	0.00
04.04.2022	21:00-21:59	Average	435.42	0.00	2.00	2.00	1.00	21.00	0.00
04.04.2022	22:00-22:59	Average	447.08	0.00	2.00	2.00	1.00	21.00	0.00
04.04.2022	23:00-23:59	Average	449.90	0.00	2.00	2.00	1.00	21.00	0.00
05.04.2022	0:00-0:59	Average	458.65	0.00	2.00	2.00	1.00	21.00	0.00
05.04.2022	1:00-1:59	Average	462.22	0.00	2.08	2.00	1.00	21.32	0.02
05.04.2022	2:00-2:59	Average	472.27	0.00	2.00	5.72	3.35	22.00	0.37
05.04.2022	3:00-3:59	Average	475.75	0.00	2.00	2.00	1.00	22.00	0.00
05.04.2022	4:00-4:59	Average	474.48	0.00	2.00	2.00	1.00	22.00	0.00
05.04.2022	5:00-5:59	Average	473.50	0.00	2.00	2.00	1.00	22.00	0.30
05.04.2022	6:00-6:59	Average	469.05	0.00	2.00	2.00	1.00	22.00	0.18
05.04.2022	7:00-7:59	Average	460.43	0.00	2.00	6.85	2.90	22.00	0.00
05.04.2022	8:00-8:59	Average	436.42	0.00	2.00	2.00	1.00	22.00	0.03
05.04.2022	9:00-9:59	Average	419.95	0.00	2.40	6.85	3.72	22.02	0.00
05.04.2022	10:00-10:59	Average	410.22	0.00	2.05	5.47	3.52	23.00	0.00
05.04.2022	11:00-11:59	Average	414.08	0.00	2.00	2.00	1.00	23.00	0.00
Average			431.72	0.03	2.03	4.09	2.16	21.63	0.04
1 hour Minimum			382.82	0.00	2.00	2.00	1.00	16.37	0.00
1 hour Maximum			475.75	0.60	2.40	18.45	9.93	23.00	0.37

4.2 Wind Speed and Direction

The following figure describes the wind speed and wind direction of the proposed project site on, 01 April to 05 April 2022 respectively. According to the data, the wind direction is following **Figure 4.9** to **Figure 4.16**.

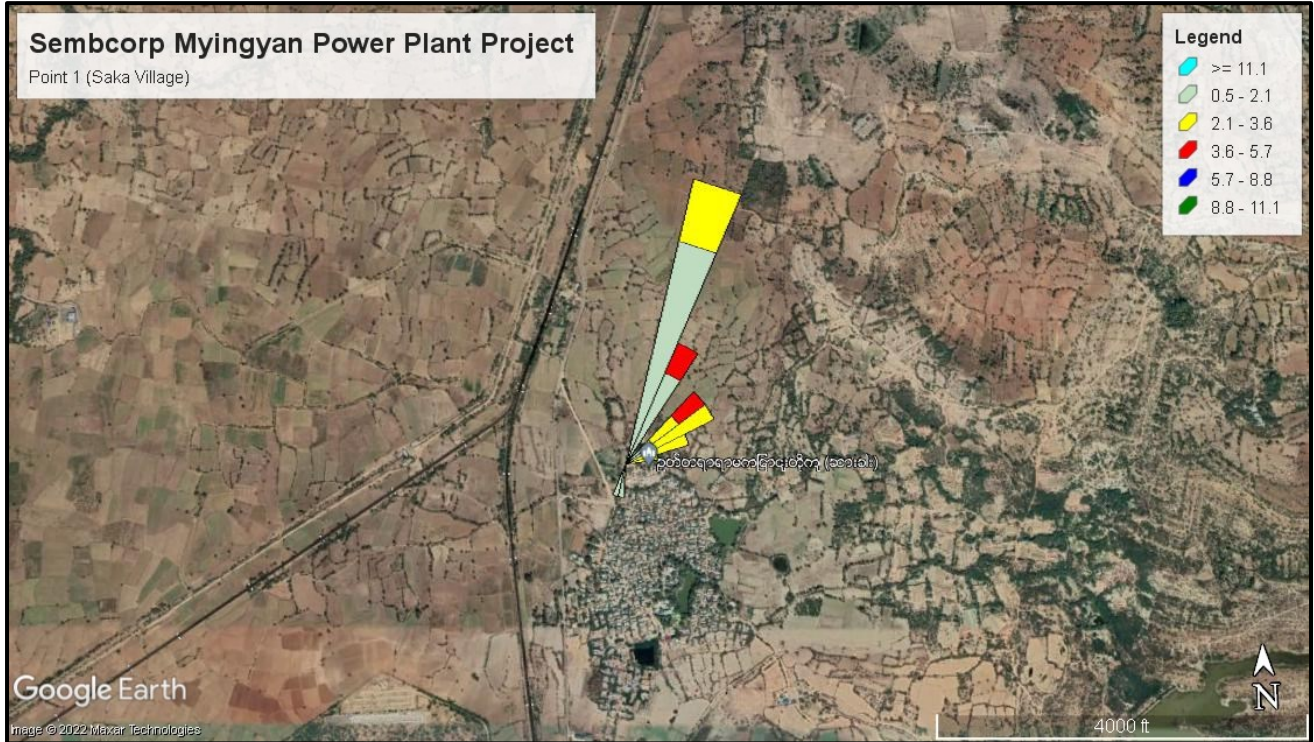


Figure 4. 9 Wind Speed and Wind Direction (Blowing From) at Sa Ka Village (ASR4)

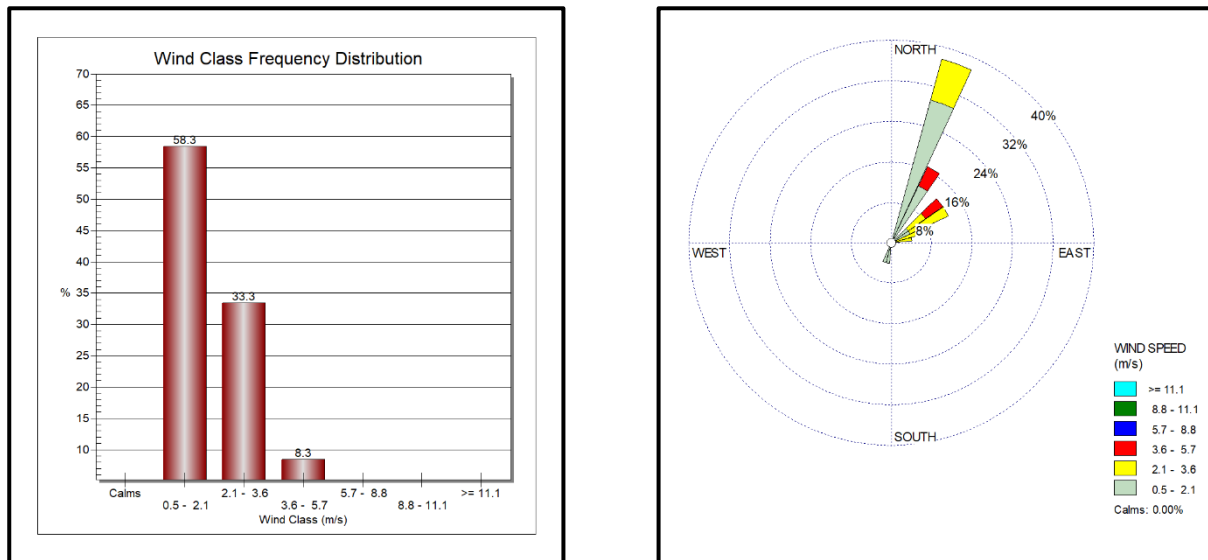


Figure 4. 10 Wind Class Frequency Distribution at Sa Ka Village (ASR4)

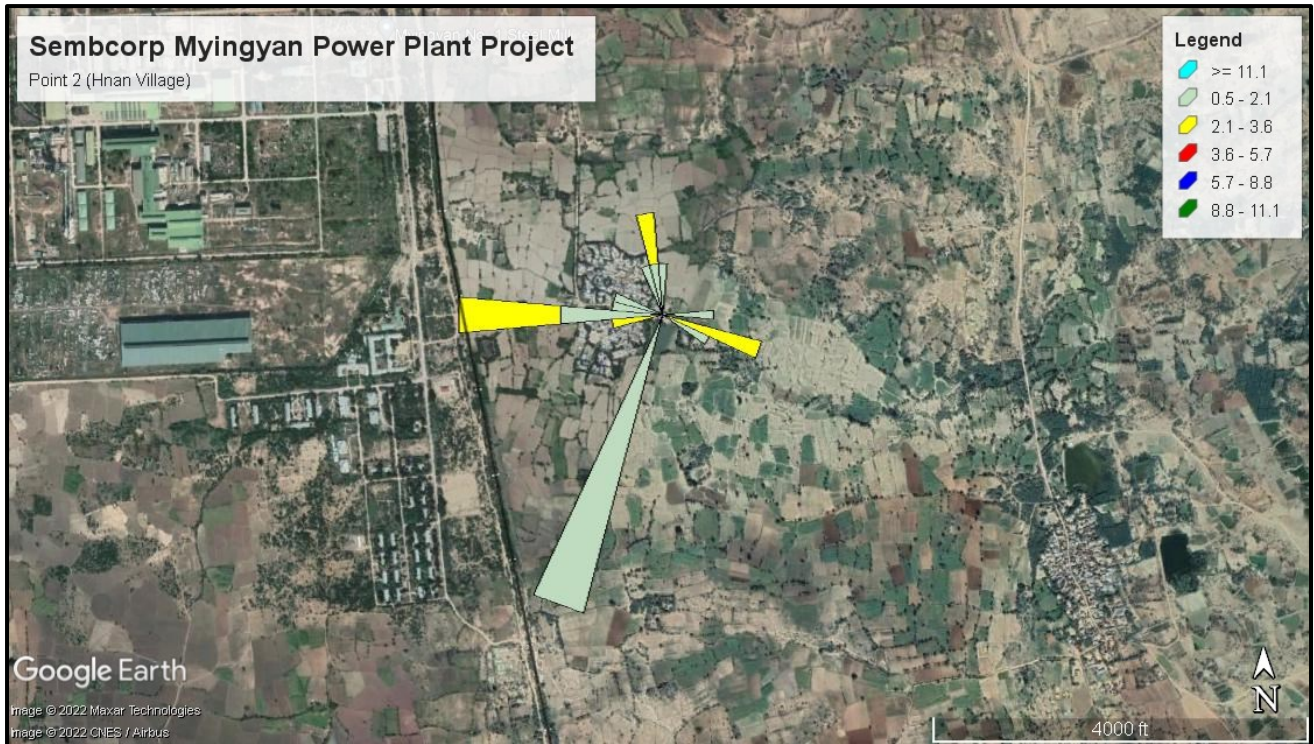


Figure 4. 11 Wind Speed and Wind Direction (Blowing From) at Hnan Ywa Village (ASR3)

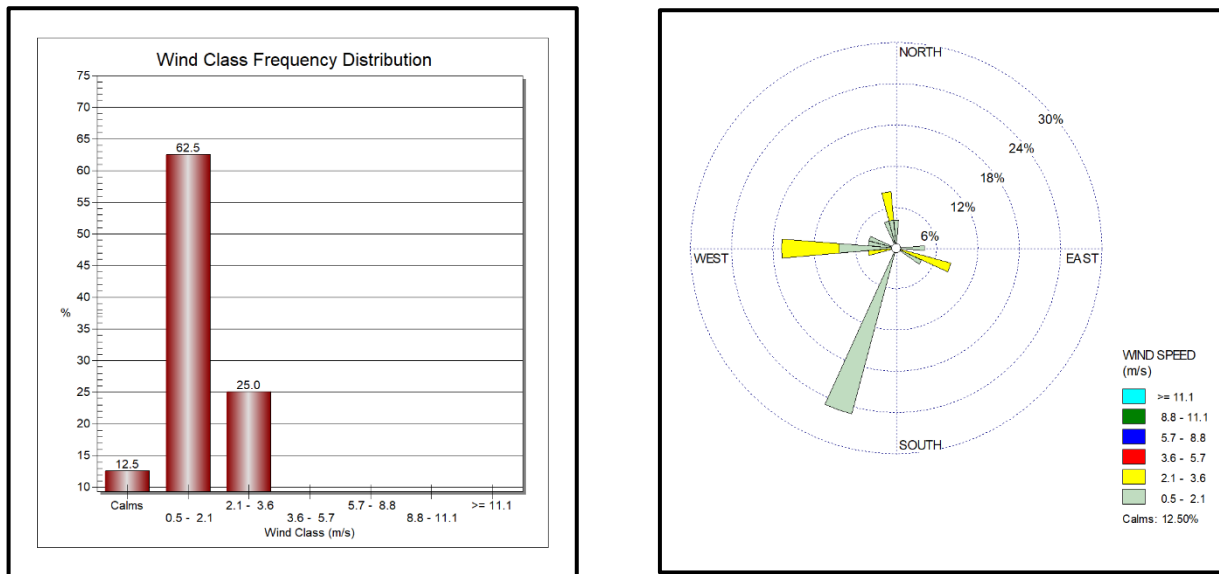


Figure 4. 12 Wind Class Frequency Distribution at Hnan Ywa Village (ASR3)

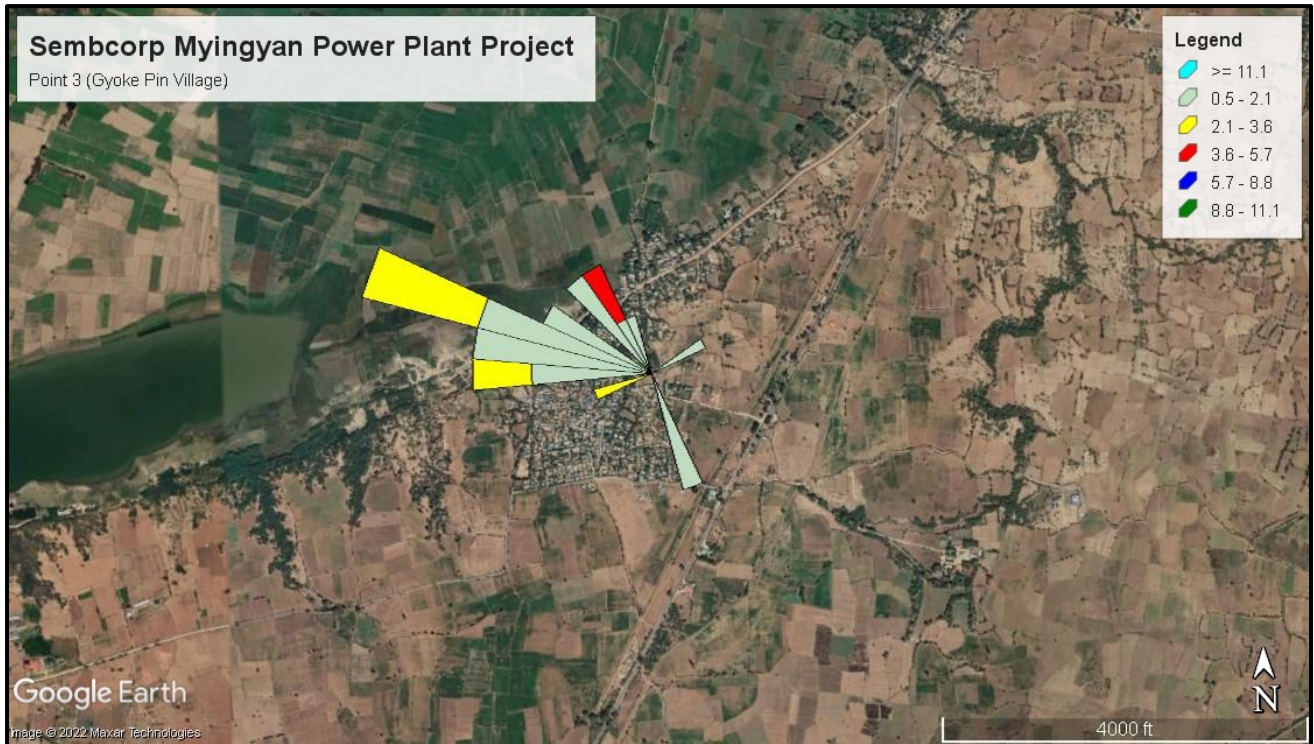


Figure 4. 13 Wind Speed and Wind Direction (Blowing From) at Gyoke Pin Village (ASR5)

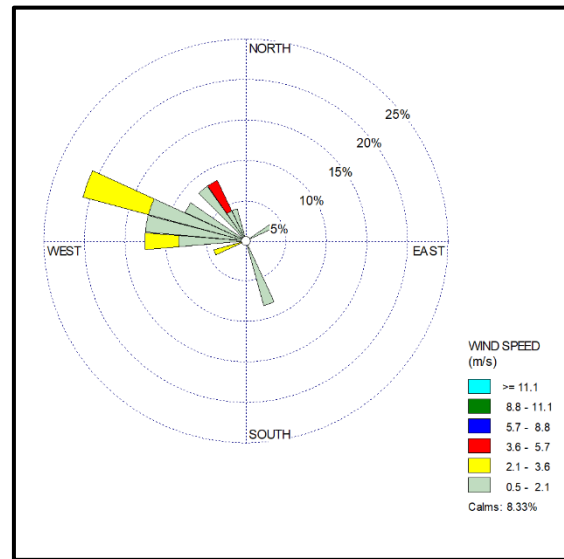
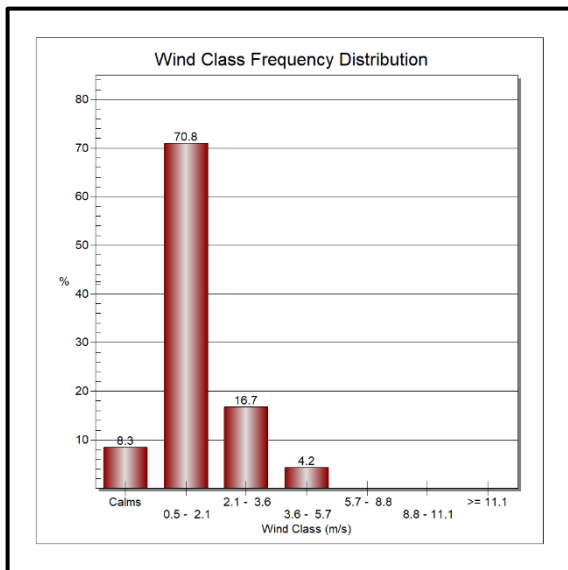


Figure 4. 14 Wind Class Frequency Distribution at Gyoke Pin Village (ASR5)

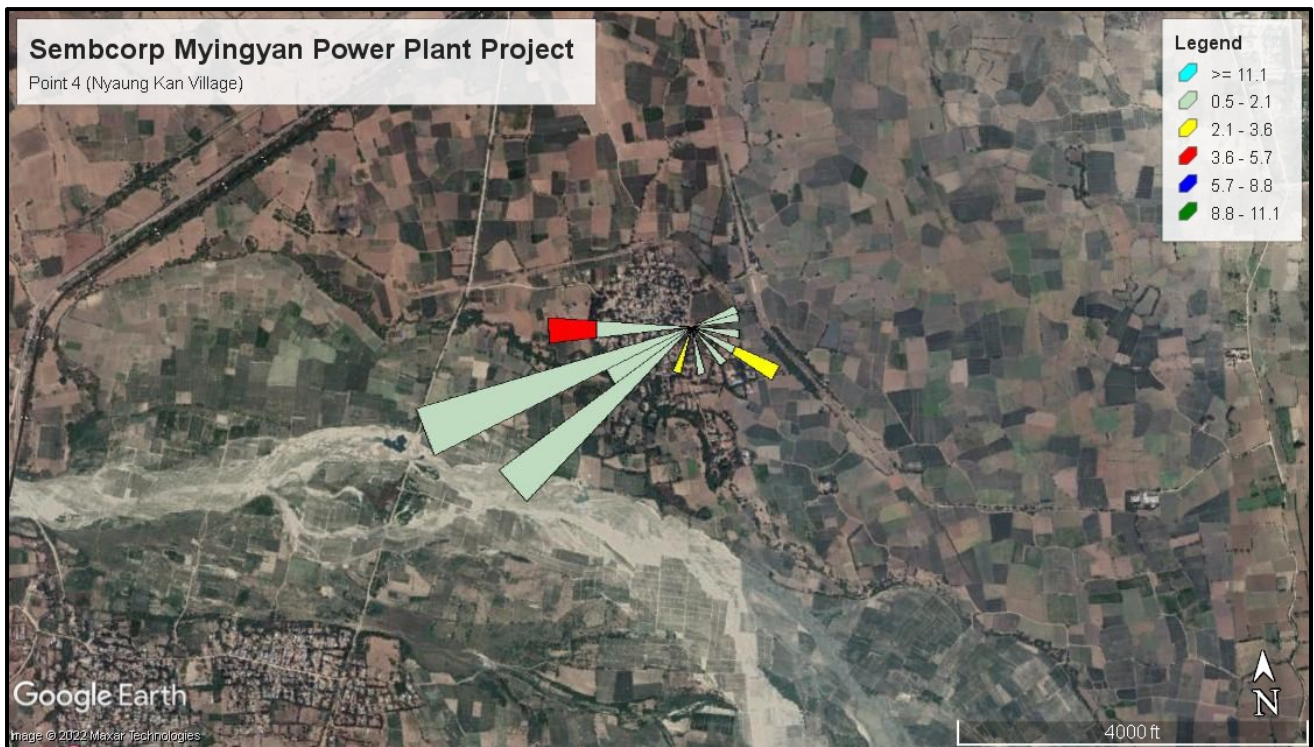


Figure 4. 15 Wind Speed and Wind Direction (Blowing From) at Nyaung Kan Village (ASR14)

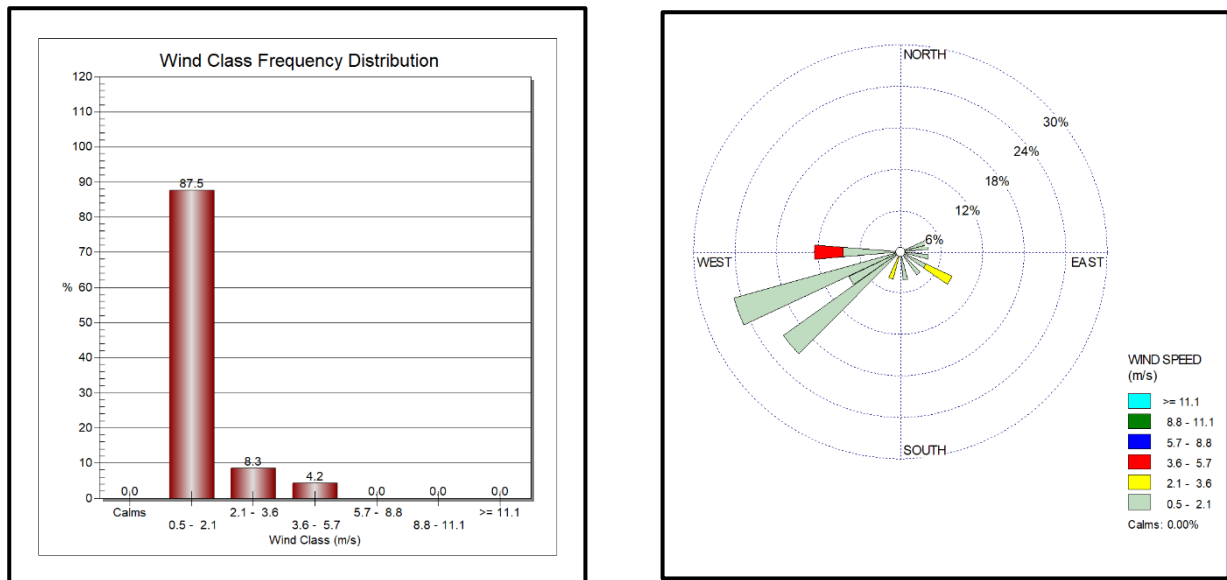


Figure 4. 16 Wind Class Frequency Distribution at Nyaung Kan Village (ASR14)

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 01 April 2022 to 02 April 2022. 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	02.04.2022	7:00:13-7:59:13	47.98	A	Day	44.62
2	02.04.2022	8:00:13-8:59:13	46.54	A	Day	
3	01.04.2022	9:00:13-9:59:13	47.40	A	Day	
4	01.04.2022	10:00:13-10:59:13	39.64	A	Day	
5	01.04.2022	11:00:13-11:59:13	45.16	A	Day	
6	01.04.2022	12:00:13-12:59:13	45.07	A	Day	
7	01.04.2022	13:00:13-13:59:13	58.27	A	Day	
8	01.04.2022	14:00:13-14:59:13	42.79	A	Day	
9	01.04.2022	15:00:13-15:59:13	45.62	A	Day	
10	01.04.2022	16:00:13-16:59:13	41.26	A	Day	
11	01.04.2022	17:00:13-17:59:13	45.45	A	Day	
12	01.04.2022	18:00:13-18:59:13	46.06	A	Day	
13	01.04.2022	19:00:13-19:59:13	40.22	A	Day	
14	01.04.2022	20:00:13-20:59:13	39.58	A	Day	
15	01.04.2022	21:00:13-21:59:13	38.31	A	Day	
16	01.04.2022	22:00:13-22:59:13	41.80	A	Night	42.16
17	01.04.2022	23:00:13-23:59:13	40.52	A	Night	
18	02.04.2022	0:00:13-0:59:13	40.09	A	Night	
19	02.04.2022	1:00:13-1:59:13	40.43	A	Night	
20	02.04.2022	2:00:13-2:59:13	40.09	A	Night	
21	02.04.2022	3:00:13-3:59:13	41.07	A	Night	
22	02.04.2022	4:00:13-4:59:13	41.92	A	Night	
23	02.04.2022	5:00:13-5:59:13	47.13	A	Night	
24	02.04.2022	6:00:13-6:59:13	46.37	A	Night	
Average			43.70			

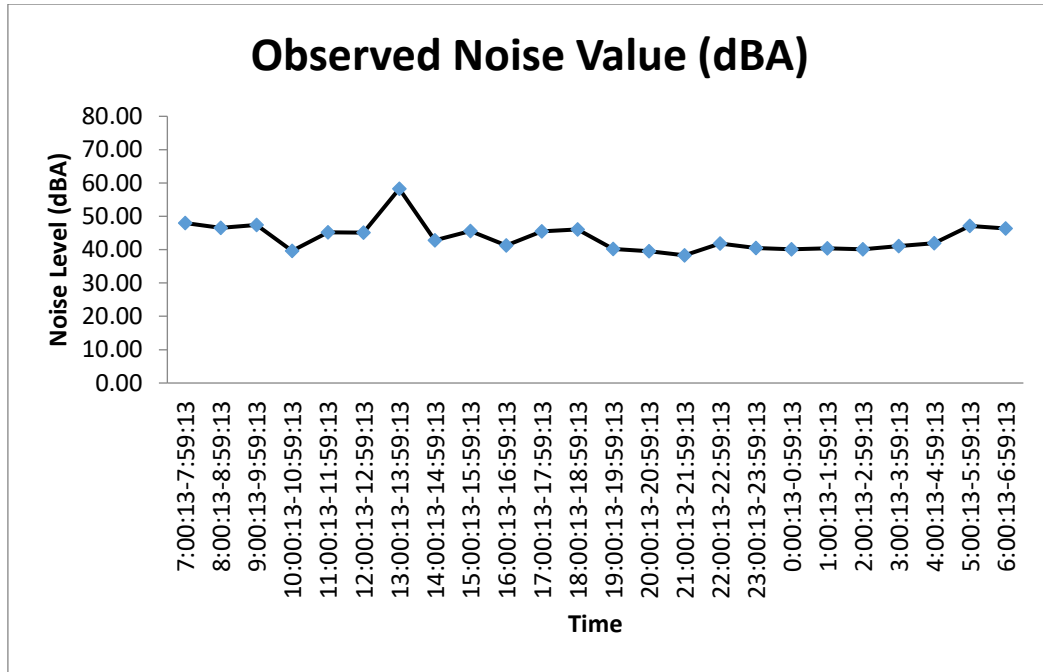


Figure 4. 17 Noise Level at near Sembcorp Myingyan Power Plant

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	02.04.2022	7:00:13-7:59:13	62.42	A	Day	55.27
2	01.04.2022	8:00:13-8:59:13	57.72	A	Day	
3	01.04.2022	9:00:13-9:59:13	55.03	A	Day	
4	01.04.2022	10:00:13-10:59:13	61.69	A	Day	
5	01.04.2022	11:00:13-11:59:13	52.22	A	Day	
6	01.04.2022	12:00:13-12:59:13	50.81	A	Day	
7	01.04.2022	13:00:13-13:59:13	48.34	A	Day	
8	01.04.2022	14:00:13-14:59:13	48.29	A	Day	
9	01.04.2022	15:00:13-15:59:13	50.96	A	Day	
10	01.04.2022	16:00:13-16:59:13	54.63	A	Day	
11	01.04.2022	17:00:13-17:59:13	57.26	A	Day	
12	01.04.2022	18:00:13-18:59:13	64.33	A	Day	
13	01.04.2022	19:00:13-19:59:13	55.95	A	Day	
14	01.04.2022	20:00:13-20:59:13	53.93	A	Day	
15	01.04.2022	21:00:13-21:59:13	55.44	A	Day	
16	01.04.2022	22:00:13-22:59:13	53.83	A	Night	56.65
17	01.04.2022	23:00:13-23:59:13	55.03	A	Night	
18	02.04.2022	0:00:13-0:59:13	53.90	A	Night	
19	02.04.2022	1:00:13-1:59:13	54.68	A	Night	
20	02.04.2022	2:00:13-2:59:13	53.68	A	Night	

21	02.04.2022	3:00:13-3:59:13	52.77	A	Night
22	02.04.2022	4:00:13-4:59:13	63.09	A	Night
23	02.04.2022	5:00:13-5:59:13	60.26	A	Night
24	02.04.2022	6:00:13-6:59:13	62.65	A	Night
Average			55.79		

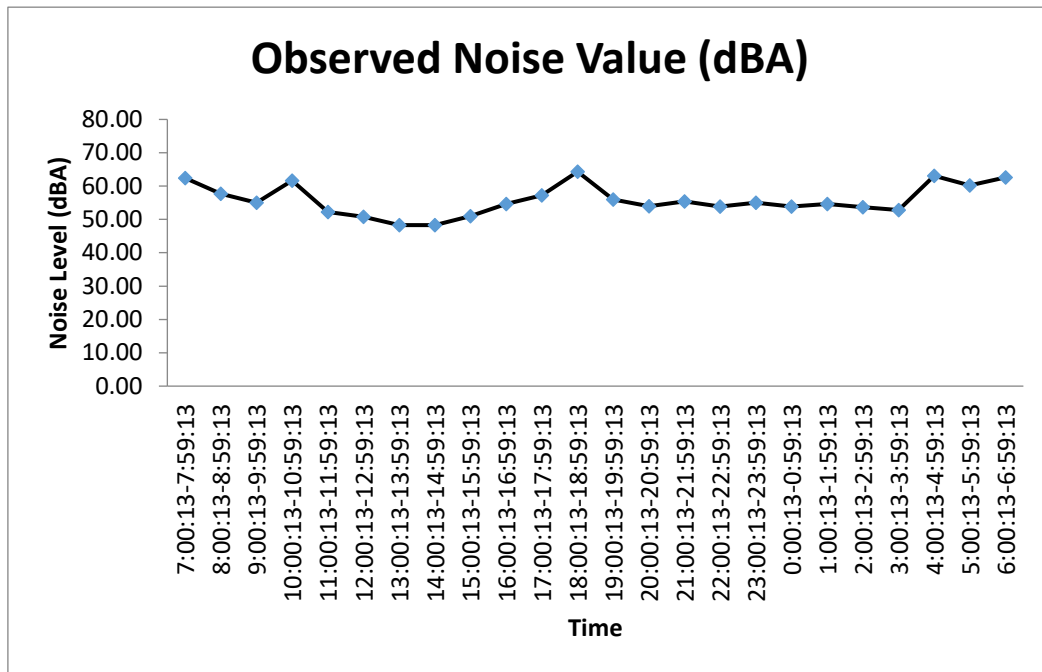


Figure 4. 18 Noise Level at Sa Ka Village

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	44.62	42.16
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	55.27	56.65
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 44.62 dB (A) and 55.27 dB (A). The observed noise values of the proposed project for night time at Sembcorp myingyan power plant and Sa Ka village are 42.16 dB (A) and 56.65 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. The observed values of daytime and 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 at the time of measurement. So, the observed values of daytime and 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, NO₂, 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/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.skcihc.com/prod/Haz-Scanner.asp for more information.



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



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www.skcihc.com

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, STEL
Recording Time	1 sec to 21 weeks
Sampling Rate	1 sec, 1 min, 10 min, 1 hr, adjustable
Data Storage	256,503 data points
Sampling Pump	1.0 to 3.0 L/min
Digital Output	RS-232 (PC), RS-423 (Max)
Software	PC or Mac
Enclosure (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	-40 to 148 F (-40 to 60 C)
Humidity	95% non-condensing (use mist heater)
Wireless Radio Modes	900 MHz (U.S.), 948 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.*

- 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
- Acoustic 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.skcline.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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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, ethanal, ethylene, or ethylene oxide
Toxic Gas: HCl - Hydrogen Chloride	Electrochemical	0 to 100 ppm	Greater of < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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	$\pm 1\%$ 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 $\pm 3\%$ 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	$\pm 2\%$ RH	1% RH	1% RH	Standard sensor
Solar Radiance Intensity	Photodiode	1110 watts/ square meter (W/m ²)	$\pm 5\%$ 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 milliRad/hr	$\pm 10\%$ Typical $\pm 15\%$ 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)	$\pm 10\%$ or 5% FS	1 G	1 G	Optional meter
Wind Speed/ Direction	9-cut anemometer/ continuous rotation potentiometric wind direction vane	0 to 125 mph/ 5 to 355°	± 1 mph or $\pm 8\%$ $\pm 3^\circ$	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	Capsulated 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.





SYSTEM HEALTH CHECK REPORT

Information

Instrument----- Hazscanner
 Model----- EPAS
 Serial number----- 915081
 Unit Sensor----- CO, NO2, CO2, SO2
 PM10, PM2.5
 Customer----- Eguard
 Date----- 2021 September 10th

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, Ziwwaka 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

APPENDIX B

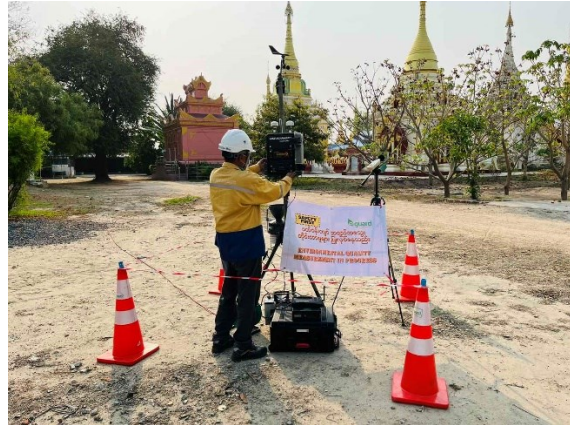
Field Photos

Air Monitoring Point at Sa Ka Village

(ASR4)

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

01.04.2022 to 02.04.2022



Air Monitoring Point at Hnan Ywa Village

(ASR3)

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

02.04.2022 to 03.04.2022



Air Monitoring Point at Gyoke Pin Village

(ASR5)

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

03.04.2022 to 04.04.2022



Air Monitoring Point at Nyaung Kan Village

(ASR14)

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

04.04.2022 to 05.04.2022





Sembcorp Myingyan Power Co., Ltd.

Environmental Monitoring Report (Air Quality Monitoring)



Prepared

Ref: 28.06.2022 to 02.07.2022 (Air Quality Report)

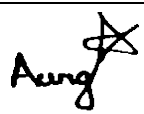

21 July 2022



E Guard Environmental Services

Report Review Form

Report Title: Environmental Quality Monitoring Report in June 2022 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, Ward No. (4), 8th Mile, Mayangone Township, Yangon 11062, Myanmar. Tel: 01 667953, Fax: 01 6667953, info@eguardservices.com Mobile +959 797005199

Prepared by: U Aung Moe Oo	Position: Project Associate
Submitted Date: 20/07/2022	Signature: 
Checked by: U Aung Myint Myat	Position: Associate Consultant
Checked Date: 20/07/2022	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

<i>Ambient Air Quality (4 locations)</i>	
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).

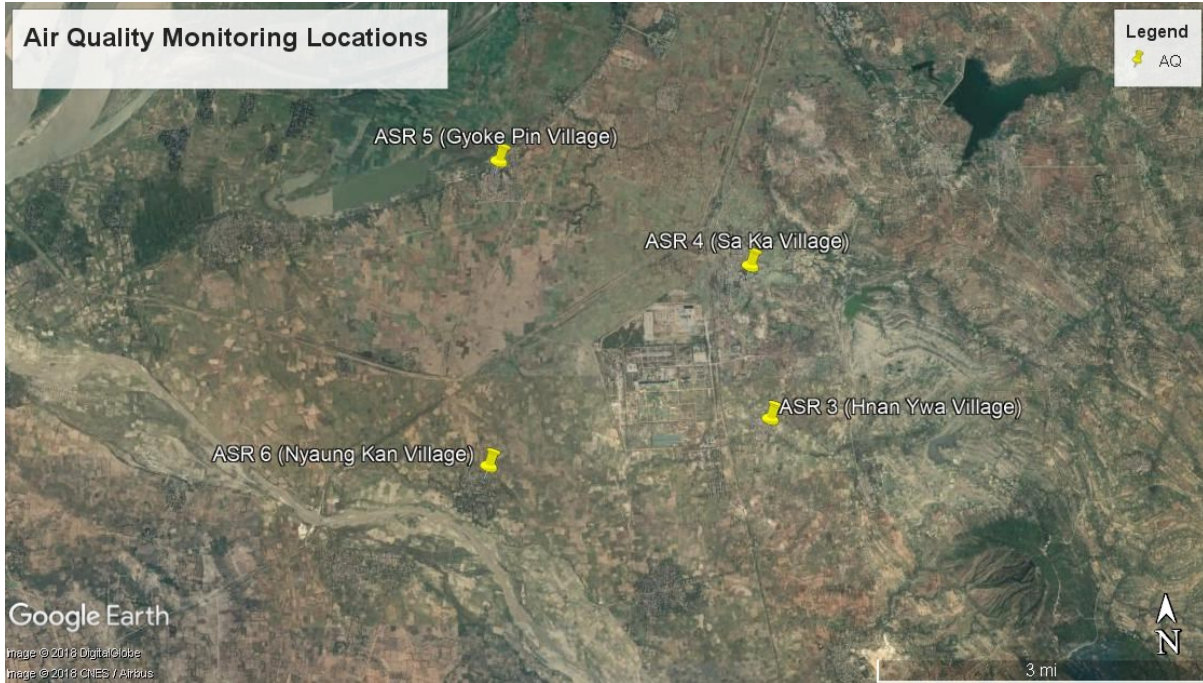


Figure 3. 1 Location of Monitoring Points

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 28 June 2022 to 02 July 2022. The measured results are compared with national emission guidelines. Based on the results of air quality monitoring, most 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	3.04	4.73	4.11	3.95	50	µg/m ³	24hrs
PM _{2.5}	1.62	2.49	2.14	2.12	25	µg/m ³	24hrs
CO	0.00031	0.00018	0.00014	0.0001	9	ppm	8hrs
CO ₂	416.99	426.57	424.9	425.78	5000	ppm	8hrs
SO ₂	0.11	0.15	0.13	0.14	20	µg/m ³	24hrs
NO ₂	9.87	22.31	12.97	25.41	200	µg/m ³	1hrs

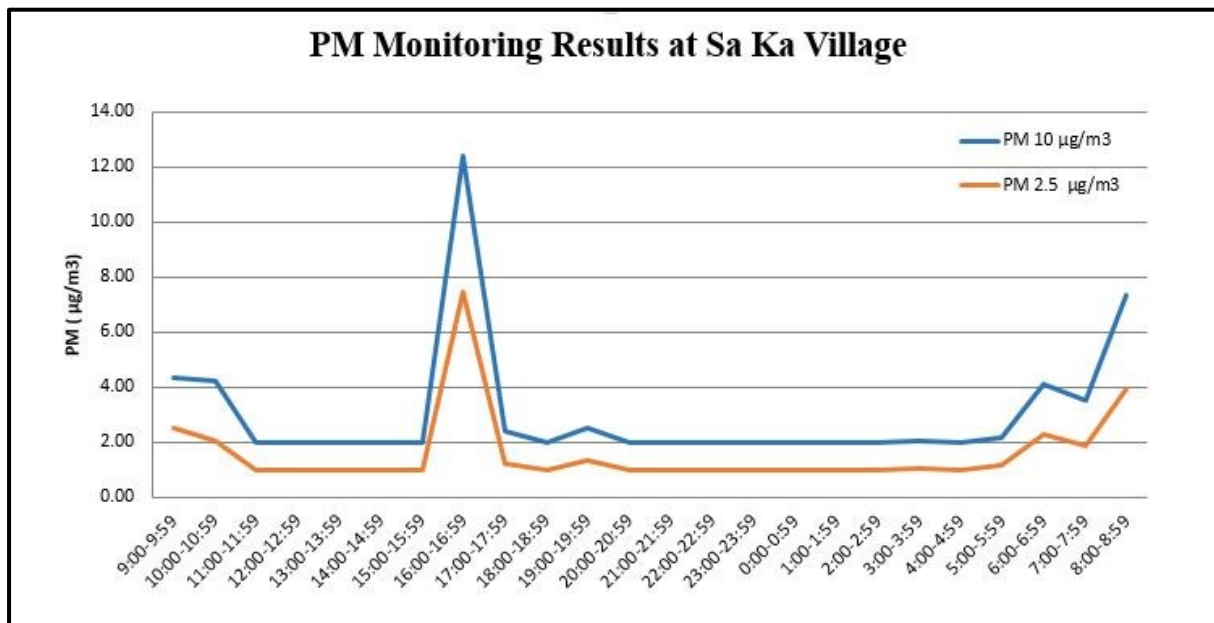


Figure 4. 1 PM Monitoring Results at Sa Ka Village

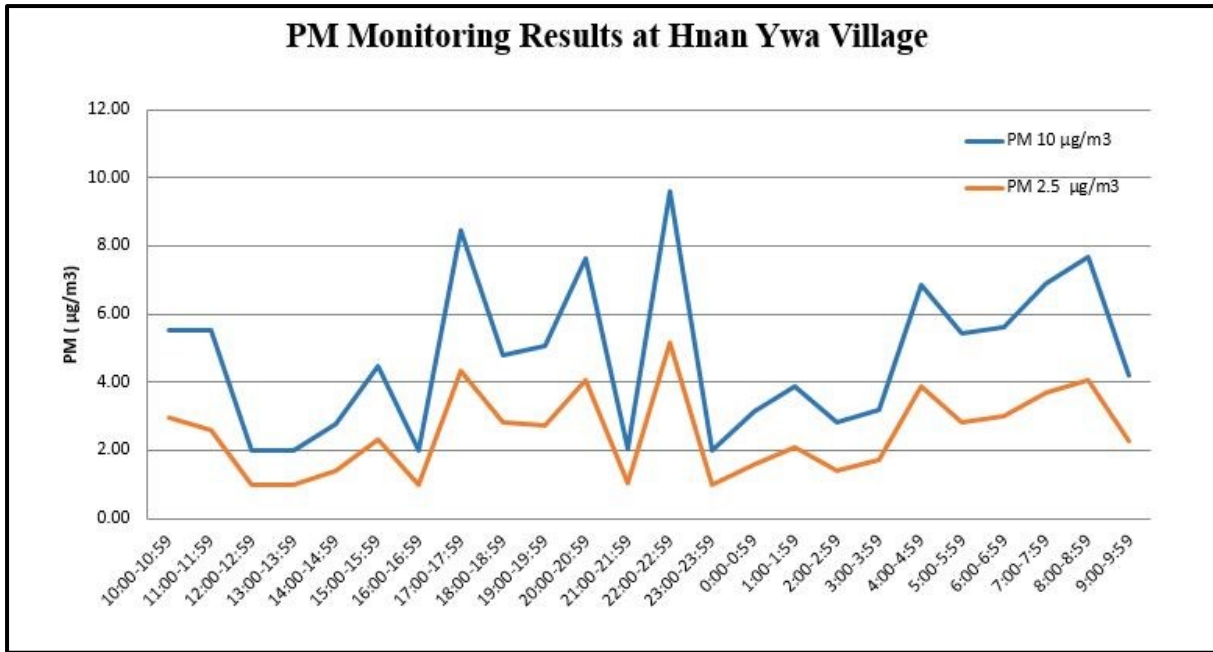


Figure 4. 2 PM Monitoring Results at Hnan Ywa Village

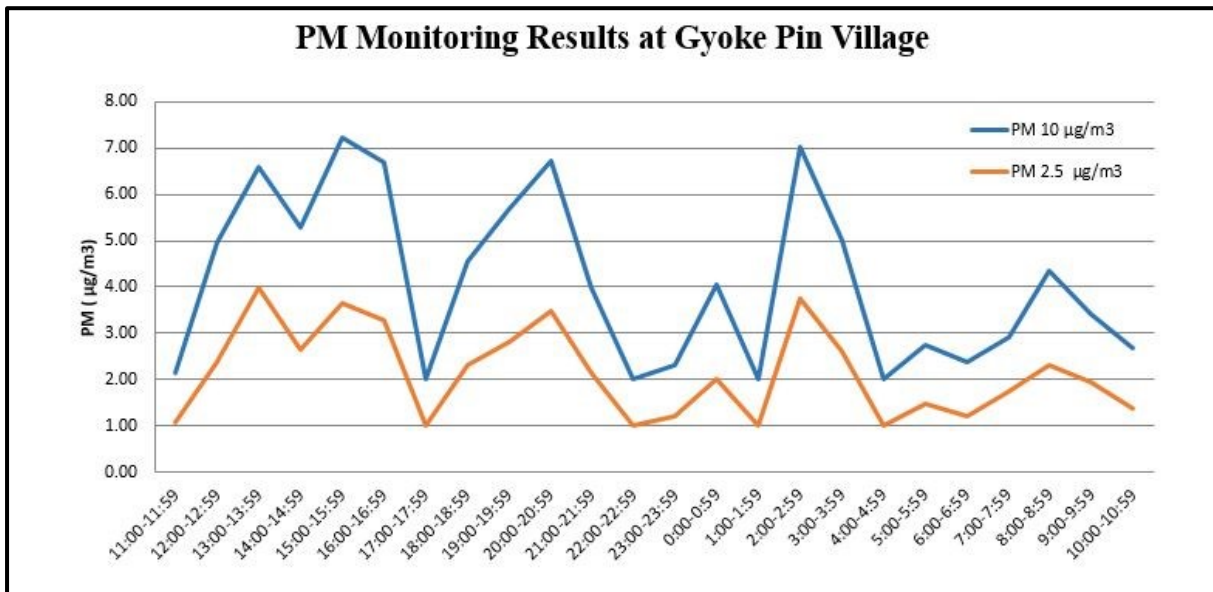


Figure 4. 3 PM Monitoring Results at Gyoke Pin Village

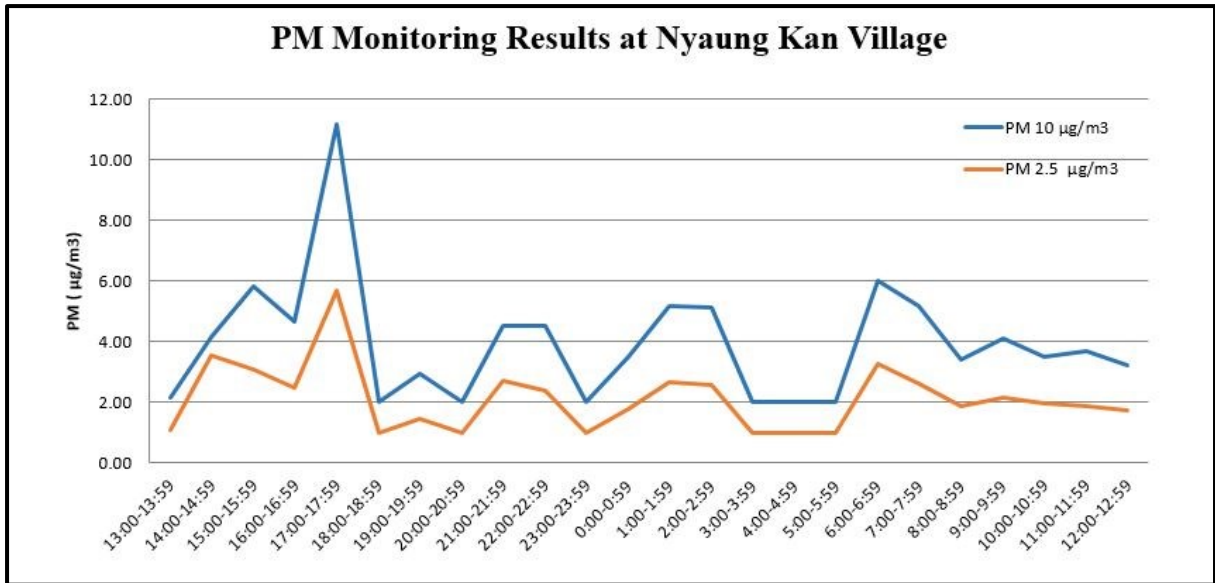


Figure 4. 4 PM Monitoring Results at Nyaung Kan Village

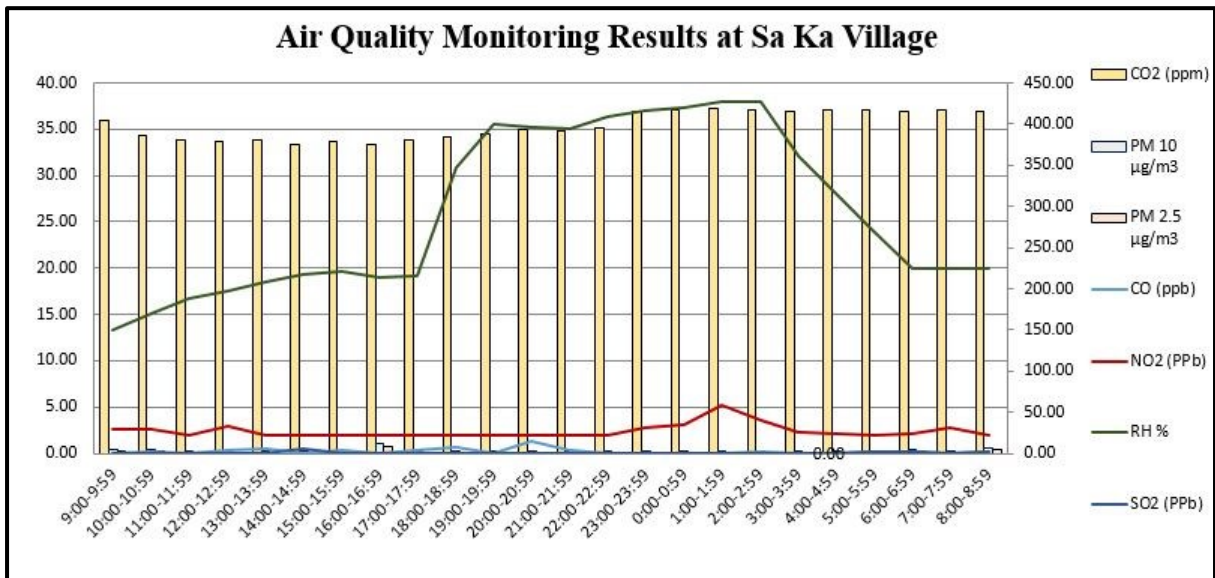


Figure 4. 5 Fluctuation of Air Pollutants during dial cycle (Sa Ka Village)

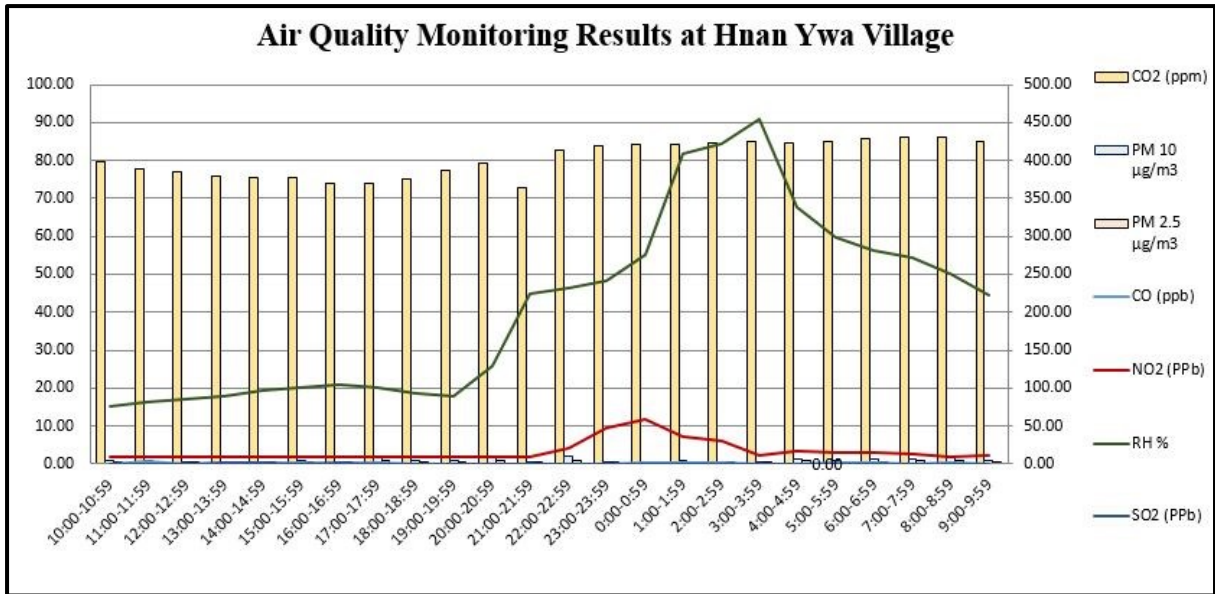


Figure 4. 6 Fluctuation of Air Pollutants during dial cycle (Hnan Ywa Village)

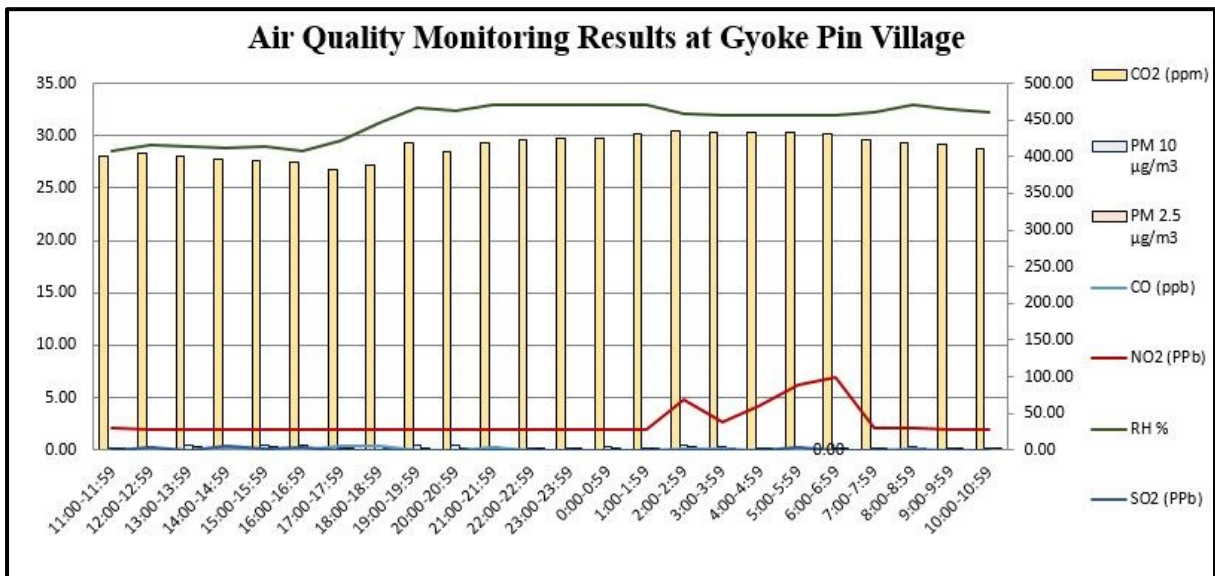


Figure 4. 7 Fluctuation of Air Pollutants during dial cycle (Gyoke Pin Village)

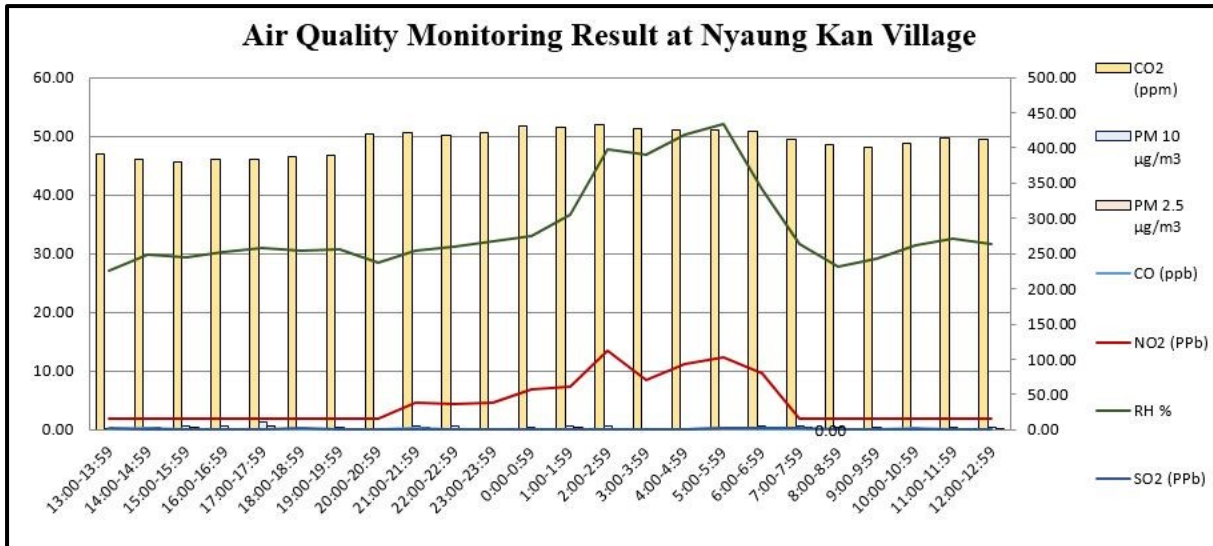


Figure 4. 8 Fluctuation of Air Pollutants during dial cycle (Nyaung Kan Village)

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)
28.06.2022	9:00-9:59	Average	405.37	0.00	2.53	4.33	2.50	13.27	0.00
28.06.2022	10:00-10:59	Average	386.57	0.17	2.58	4.22	2.05	15.10	0.00
28.06.2022	11:00-11:59	Average	381.47	0.00	2.00	2.00	1.00	16.73	0.00
28.06.2022	12:00-12:59	Average	379.77	0.27	2.85	2.00	1.00	17.58	0.00
28.06.2022	13:00-13:59	Average	380.97	0.45	2.00	2.00	1.00	18.43	0.00
28.06.2022	14:00-14:59	Average	375.48	0.00	2.00	2.00	1.00	19.25	0.55
28.06.2022	15:00-15:59	Average	378.02	0.33	2.00	2.00	1.00	19.68	0.00
28.06.2022	16:00-16:59	Average	374.57	0.00	2.00	12.40	7.45	19.00	0.00
28.06.2022	17:00-17:59	Average	381.17	0.33	2.00	2.38	1.25	19.10	0.00
28.06.2022	18:00-18:59	Average	385.05	0.58	2.00	2.00	1.00	30.90	0.00
28.06.2022	19:00-19:59	Average	387.50	0.00	2.00	2.53	1.33	35.50	0.00
28.06.2022	20:00-20:59	Average	393.95	1.25	2.00	2.00	1.00	35.23	0.00
28.06.2022	21:00-21:59	Average	391.28	0.33	2.00	2.00	1.00	35.00	0.00
28.06.2022	22:00-22:59	Average	396.18	0.00	2.00	2.00	1.00	36.42	0.00
28.06.2022	23:00-23:59	Average	415.38	0.00	2.75	2.00	1.00	37.00	0.00
29.06.2022	0:00-0:59	Average	417.80	0.00	3.03	2.00	1.00	37.35	0.00
29.06.2022	1:00-1:59	Average	419.18	0.00	5.25	2.00	1.00	38.00	0.00
29.06.2022	2:00-2:59	Average	417.45	0.23	3.65	2.00	1.00	38.00	0.00
29.06.2022	3:00-3:59	Average	415.13	0.00	2.25	2.05	1.03	32.12	0.00
29.06.2022	4:00-4:59	Average	417.45	0.00	2.08	2.00	1.00	28.05	0.00
29.06.2022	5:00-5:59	Average	417.68	0.10	2.00	2.17	1.17	23.90	0.13
29.06.2022	6:00-6:59	Average	416.10	0.22	2.12	4.08	2.30	20.00	0.17
29.06.2022	7:00-7:59	Average	417.42	0.00	2.83	3.52	1.85	20.00	0.00
29.06.2022	8:00-8:59	Average	415.47	0.10	2.00	7.35	3.92	20.00	0.15
Average			398.60	0.18	2.41	3.04	1.62	26.07	0.04
1 hour Minimum			374.57	0.00	2.00	2.00	1.00	13.27	0.00
1 hour Maximum			419.18	1.25	5.25	12.40	7.45	38.00	0.55

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)
29.06.2022	10:00-10:59	Average	397.97	0.00	2.00	5.53	2.95	15.02	0.00
29.06.2022	11:00-11:59	Average	388.18	0.75	2.00	5.53	2.57	16.32	0.00
29.06.2022	12:00-12:59	Average	384.52	0.00	2.00	2.00	1.00	17.10	0.00
29.06.2022	13:00-13:59	Average	378.68	0.00	2.00	2.00	1.00	18.02	0.35
29.06.2022	14:00-14:59	Average	378.35	0.00	2.00	2.78	1.40	19.40	0.38
29.06.2022	15:00-15:59	Average	377.02	0.42	2.00	4.48	2.32	20.00	0.00
29.06.2022	16:00-16:59	Average	369.12	0.00	2.00	2.00	1.00	20.92	0.37
29.06.2022	17:00-17:59	Average	370.62	0.27	2.00	8.43	4.33	20.05	0.00
29.06.2022	18:00-18:59	Average	375.83	0.03	2.00	4.77	2.80	18.67	0.00
29.06.2022	19:00-19:59	Average	386.78	0.00	2.00	5.07	2.72	18.00	0.00
29.06.2022	20:00-20:59	Average	396.97	0.00	2.00	7.62	4.07	25.98	0.00
29.06.2022	21:00-21:59	Average	364.55	0.15	2.00	2.05	1.03	44.80	0.00
29.06.2022	22:00-22:59	Average	412.90	0.12	4.05	9.60	5.17	46.50	0.00
29.06.2022	23:00-23:59	Average	420.08	0.00	9.32	2.00	1.00	48.22	0.00
30.06.2022	0:00-0:59	Average	420.72	0.40	11.87	3.13	1.57	55.07	0.00
30.06.2022	1:00-1:59	Average	420.43	0.25	7.03	3.87	2.07	81.62	0.00
30.06.2022	2:00-2:59	Average	423.10	0.17	6.02	2.82	1.42	84.47	0.00
30.06.2022	3:00-3:59	Average	424.98	0.00	2.25	3.17	1.72	90.75	0.00
30.06.2022	4:00-4:59	Average	423.57	0.00	3.27	6.83	3.87	67.63	0.00
30.06.2022	5:00-5:59	Average	425.70	0.23	3.02	5.42	2.82	59.83	0.00
30.06.2022	6:00-6:59	Average	428.57	0.28	3.17	5.63	2.98	56.43	0.15
30.06.2022	7:00-7:59	Average	430.52	0.00	2.78	6.92	3.68	54.18	0.12
30.06.2022	8:00-8:59	Average	430.40	0.18	2.00	7.67	4.05	50.12	0.05
30.06.2022	9:00-9:59	Average	425.70	0.03	2.28	4.20	2.25	44.38	0.00
Average			402.30	0.14	3.38	4.73	2.49	41.39	0.06
1 hour Minimum			364.55	0.00	2.00	2.00	1.00	15.02	0.00
1 hour Maximum			430.52	0.75	11.87	9.60	5.17	90.75	0.38

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)
30.06.2022	11:00-11:59	Average	401.02	0.00	2.17	2.13	1.07	28.50	0.00
30.06.2022	12:00-12:59	Average	403.78	0.00	2.00	4.95	2.37	29.17	0.20
30.06.2022	13:00-13:59	Average	400.87	0.00	2.00	6.60	3.98	29.00	0.00
30.06.2022	14:00-14:59	Average	396.60	0.32	2.00	5.28	2.63	28.77	0.37
30.06.2022	15:00-15:59	Average	394.58	0.00	2.00	7.23	3.65	28.97	0.13
30.06.2022	16:00-16:59	Average	391.78	0.00	2.00	6.68	3.28	28.52	0.25
30.06.2022	17:00-17:59	Average	382.18	0.37	2.00	2.00	1.00	29.52	0.00
30.06.2022	18:00-18:59	Average	387.65	0.45	2.00	4.57	2.30	31.25	0.00
30.06.2022	19:00-19:59	Average	418.52	0.02	2.00	5.68	2.82	32.65	0.00
30.06.2022	20:00-20:59	Average	407.23	0.00	2.00	6.72	3.48	32.33	0.00
30.06.2022	21:00-21:59	Average	419.55	0.30	2.00	3.97	2.15	32.95	0.00
30.06.2022	22:00-22:59	Average	422.02	0.03	2.00	2.00	1.00	32.98	0.00
30.06.2022	23:00-23:59	Average	425.47	0.00	2.00	2.32	1.20	33.00	0.00
01.07.2022	0:00-0:59	Average	424.72	0.00	2.00	4.03	2.02	33.00	0.00
01.07.2022	1:00-1:59	Average	430.97	0.00	2.00	2.00	1.00	33.00	0.00
01.07.2022	2:00-2:59	Average	435.75	0.13	4.78	7.02	3.75	32.10	0.00
01.07.2022	3:00-3:59	Average	433.02	0.17	2.67	5.02	2.62	32.00	0.00
01.07.2022	4:00-4:59	Average	432.95	0.00	4.28	2.00	1.00	32.00	0.00
01.07.2022	5:00-5:59	Average	433.02	0.00	6.22	2.75	1.48	32.00	0.20
01.07.2022	6:00-6:59	Average	431.75	0.00	6.90	2.38	1.22	31.92	0.00
01.07.2022	7:00-7:59	Average	423.17	0.00	2.15	2.92	1.73	32.28	0.00
01.07.2022	8:00-8:59	Average	418.63	0.07	2.10	4.35	2.30	32.95	0.00
01.07.2022	9:00-9:59	Average	416.28	0.00	2.00	3.40	1.93	32.58	0.00
01.07.2022	10:00-10:59	Average	410.42	0.00	2.00	2.68	1.37	32.22	0.00
Average			414.25	0.08	2.64	4.11	2.14	31.40	0.05
1 hour Minimum			382.18	0.00	2.00	2.00	1.00	28.50	0.00
1 hour Maximum			435.75	0.45	6.90	7.23	3.98	33.00	0.37

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)
01.07.2022	13:00-13:59	Average	390.50	0.00	2.00	2.13	1.07	27.17	0.20
01.07.2022	14:00-14:59	Average	384.65	0.22	2.00	4.15	3.55	29.82	0.00
01.07.2022	15:00-15:59	Average	379.75	0.10	2.00	5.83	3.07	29.47	0.00
01.07.2022	16:00-16:59	Average	383.05	0.13	2.00	4.67	2.47	30.23	0.00
01.07.2022	17:00-17:59	Average	383.55	0.00	2.00	11.20	5.70	31.00	0.00
01.07.2022	18:00-18:59	Average	386.92	0.00	2.00	2.00	1.00	30.42	0.25
01.07.2022	19:00-19:59	Average	389.50	0.15	2.00	2.92	1.45	30.63	0.00
01.07.2022	20:00-20:59	Average	420.18	0.00	2.00	2.00	1.00	28.42	0.00
01.07.2022	21:00-21:59	Average	421.45	0.28	4.60	4.50	2.70	30.55	0.00
01.07.2022	22:00-22:59	Average	417.77	0.00	4.33	4.53	2.37	31.22	0.00
01.07.2022	23:00-23:59	Average	421.58	0.00	4.73	2.00	1.00	32.10	0.00
02.07.2022	0:00-0:59	Average	430.68	0.00	6.80	3.50	1.75	32.93	0.00
02.07.2022	1:00-1:59	Average	429.87	0.00	7.40	5.15	2.65	36.60	0.00
02.07.2022	2:00-2:59	Average	432.48	0.00	13.52	5.13	2.57	47.80	0.00
02.07.2022	3:00-3:59	Average	427.27	0.00	8.45	2.00	1.00	46.93	0.00
02.07.2022	4:00-4:59	Average	425.12	0.00	11.20	2.00	1.00	50.32	0.00
02.07.2022	5:00-5:59	Average	425.77	0.40	12.37	2.00	1.00	52.05	0.32
02.07.2022	6:00-6:59	Average	422.95	0.00	9.67	6.03	3.27	40.90	0.20
02.07.2022	7:00-7:59	Average	412.12	0.00	2.00	5.15	2.62	31.60	0.32
02.07.2022	8:00-8:59	Average	404.27	0.00	2.00	3.42	1.87	27.83	0.00
02.07.2022	9:00-9:59	Average	400.97	0.00	2.00	4.08	2.13	29.25	0.00
02.07.2022	10:00-10:59	Average	405.95	0.27	2.00	3.52	1.97	31.52	0.00
02.07.2022	11:00-11:59	Average	414.53	0.07	2.00	3.70	1.87	32.55	0.00
02.07.2022	12:00-12:59	Average	412.73	0.00	2.00	3.22	1.73	31.53	0.00
Average			409.32	0.07	4.63	3.95	2.12	34.28	0.05
1 hour Minimum			379.75	0.00	2.00	2.00	1.00	27.17	0.00
1 hour Maximum			432.48	0.40	13.52	11.20	5.70	52.05	0.32

4.2 Wind Speed and Direction

The following figure describes the wind speed and wind direction of the proposed project site on, 28 June 2022 to 02 July 2022 respectively. According to the data, the wind direction is following **Figure 4. 9 to Figure 4. 16.**

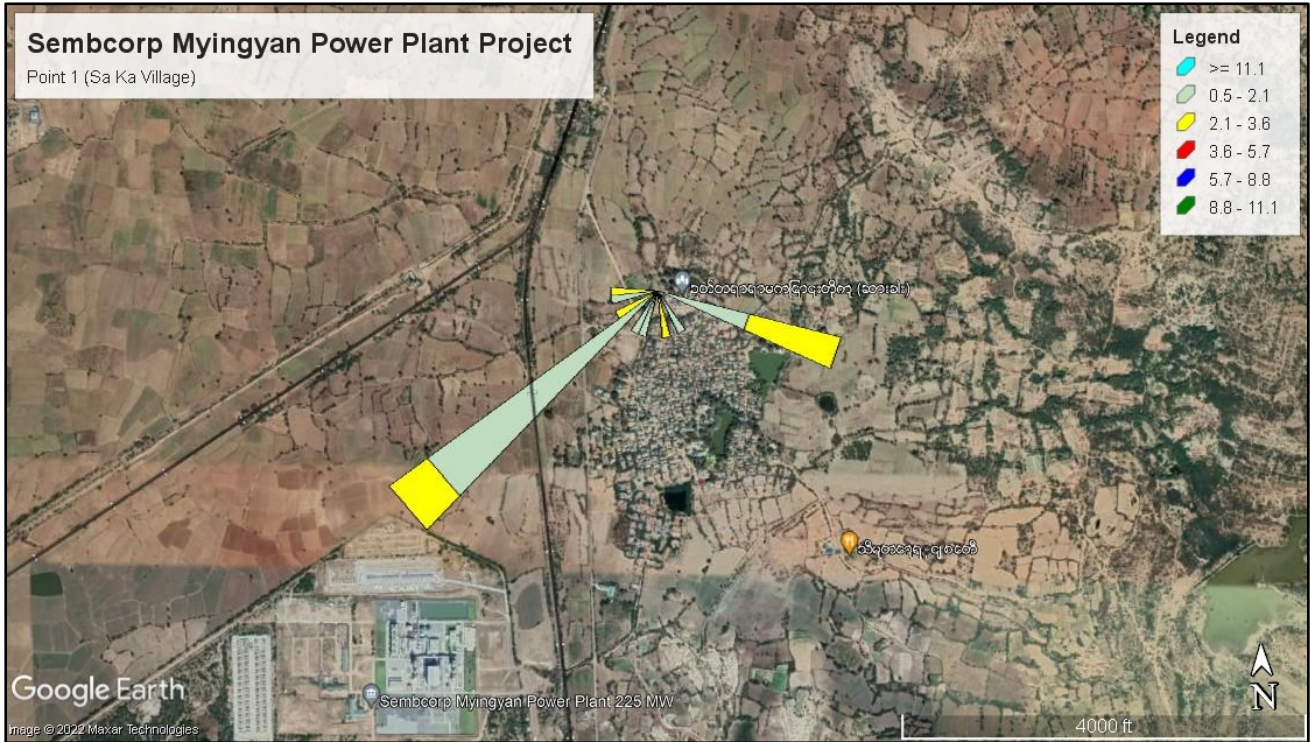


Figure 4. 9 Wind Speed and Wind Direction (Blowing From) at Sa Ka Village (ASR4)

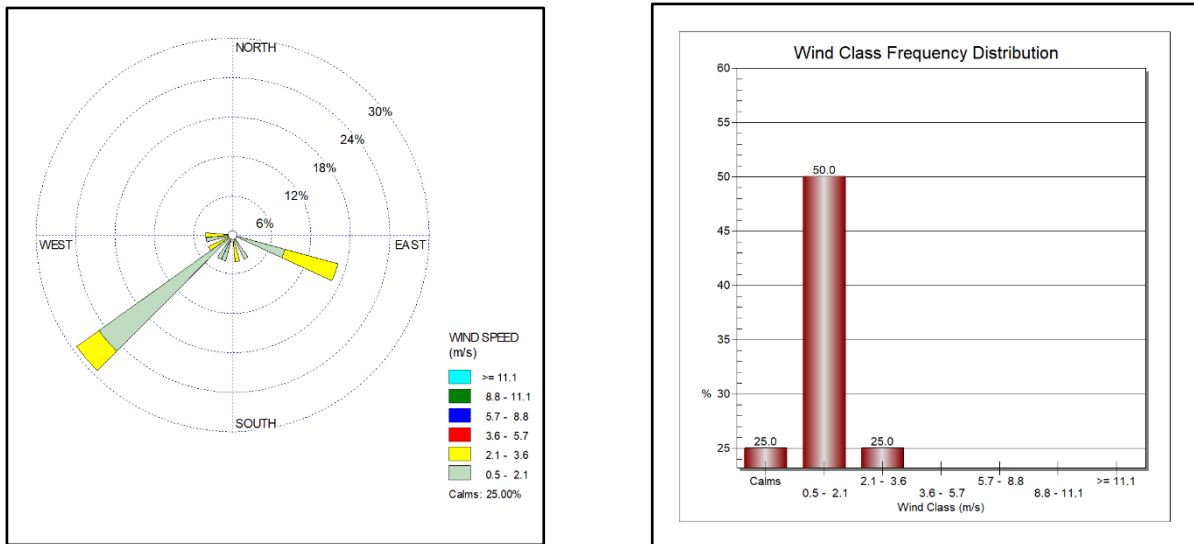


Figure 4. 10 Wind Class Frequency Distribution at Sa Ka Village (ASR4)

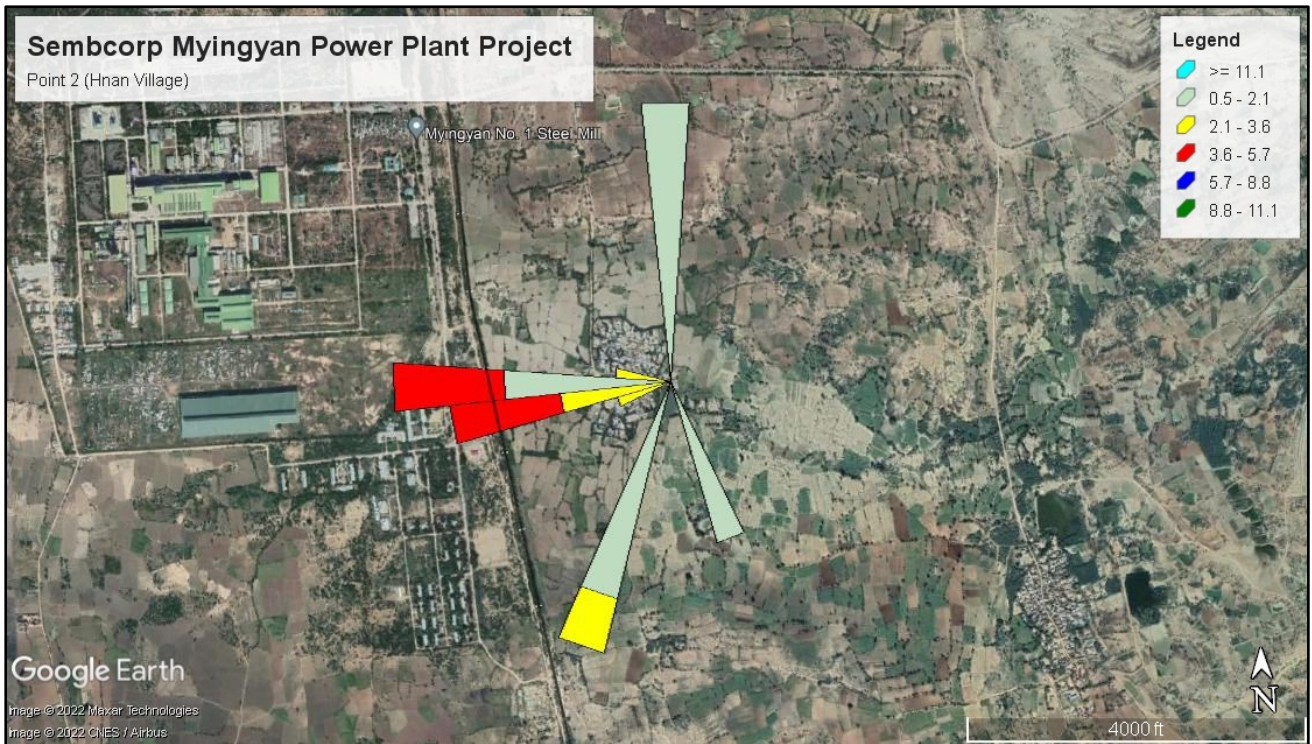


Figure 4. 11 Wind Speed and Wind Direction (Blowing From) at Hnan Ywa Village (ASR3)

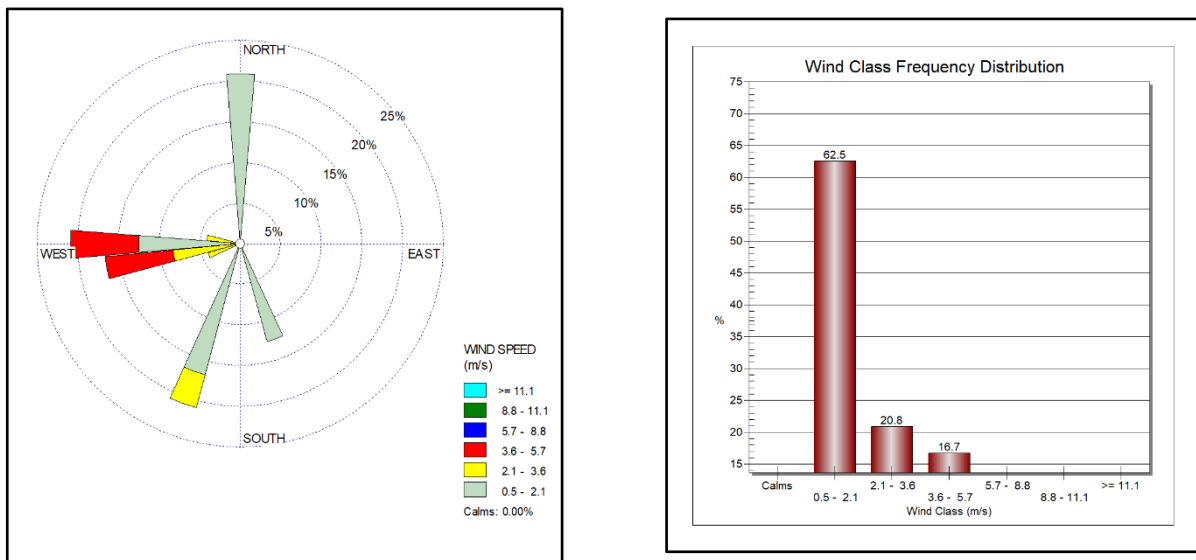


Figure 4. 12 Wind Class Frequency Distribution at Hnan Ywa Village (ASR3)

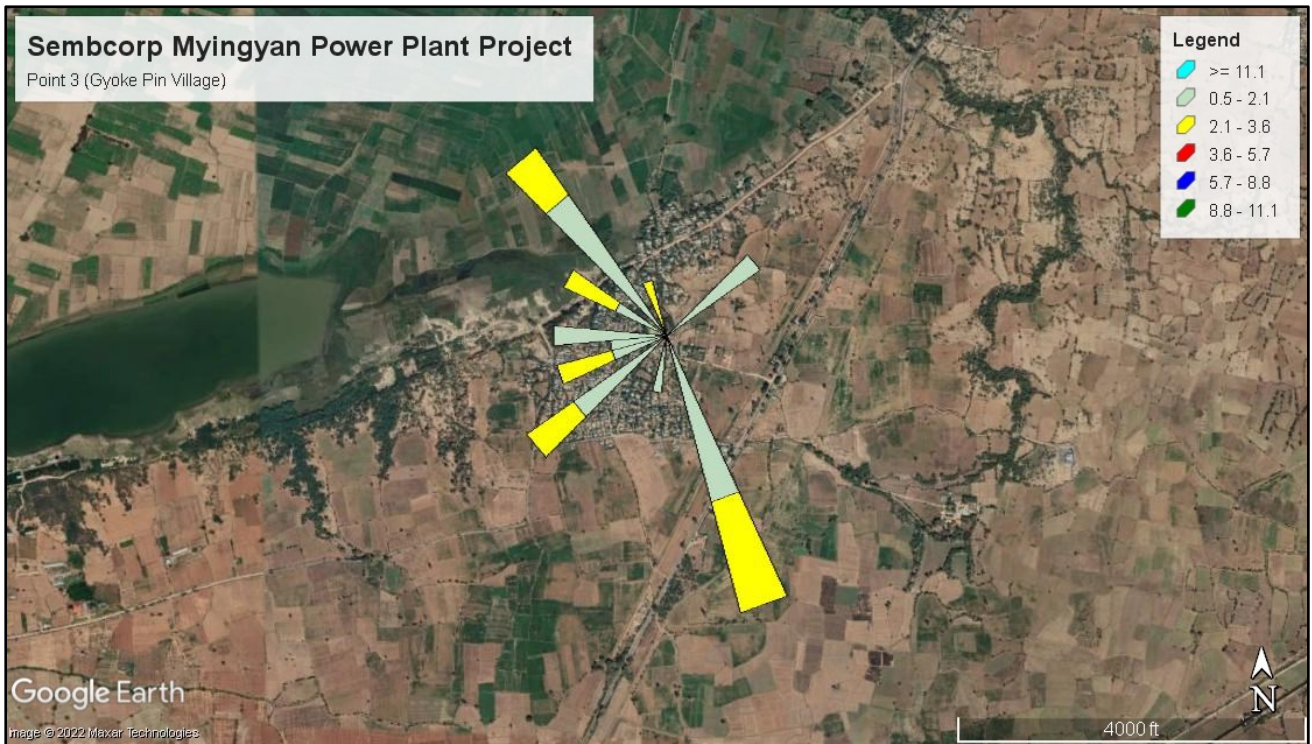


Figure 4. 13 Wind Speed and Wind Direction (Blowing From) at Gyoke Pin Village (ASR5)

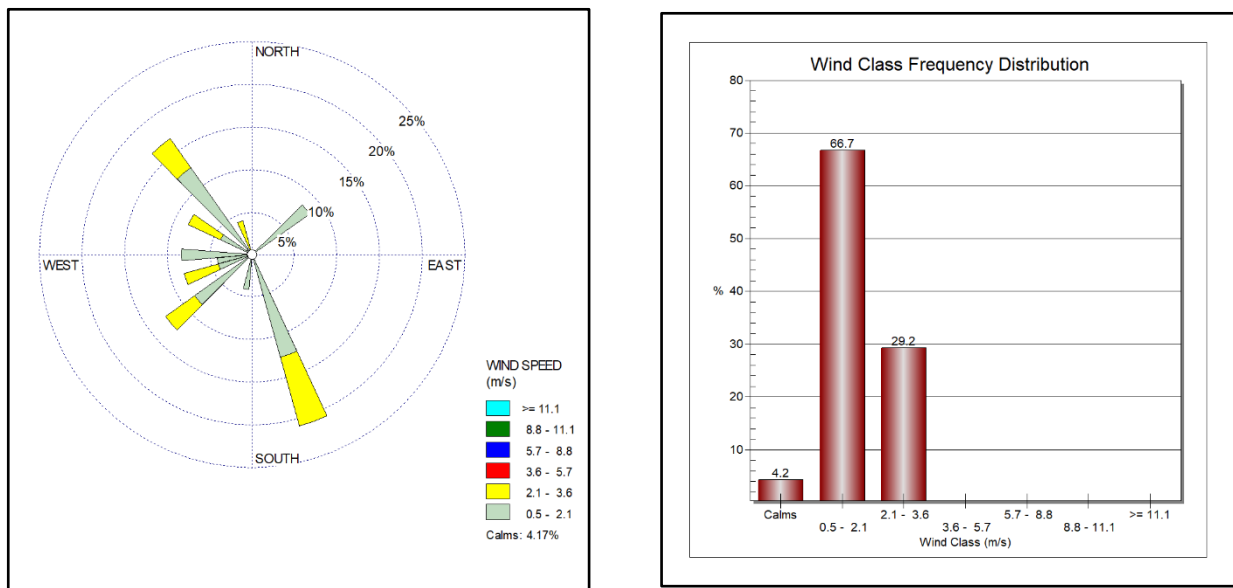


Figure 4. 14 Wind Class Frequency Distribution at Gyoke Pin Village (ASR5)

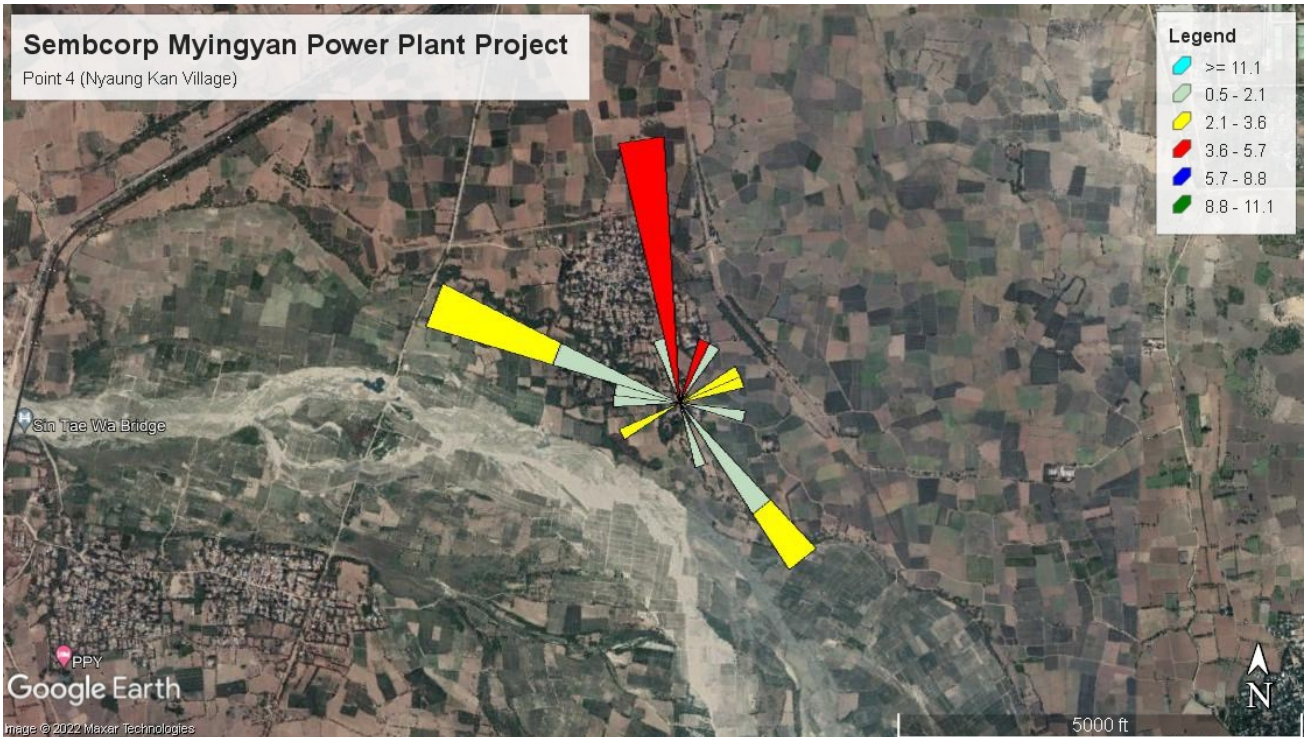


Figure 4. 15 Wind Speed and Wind Direction (Blowing From) at Nyaung Kan Village (ASR14)

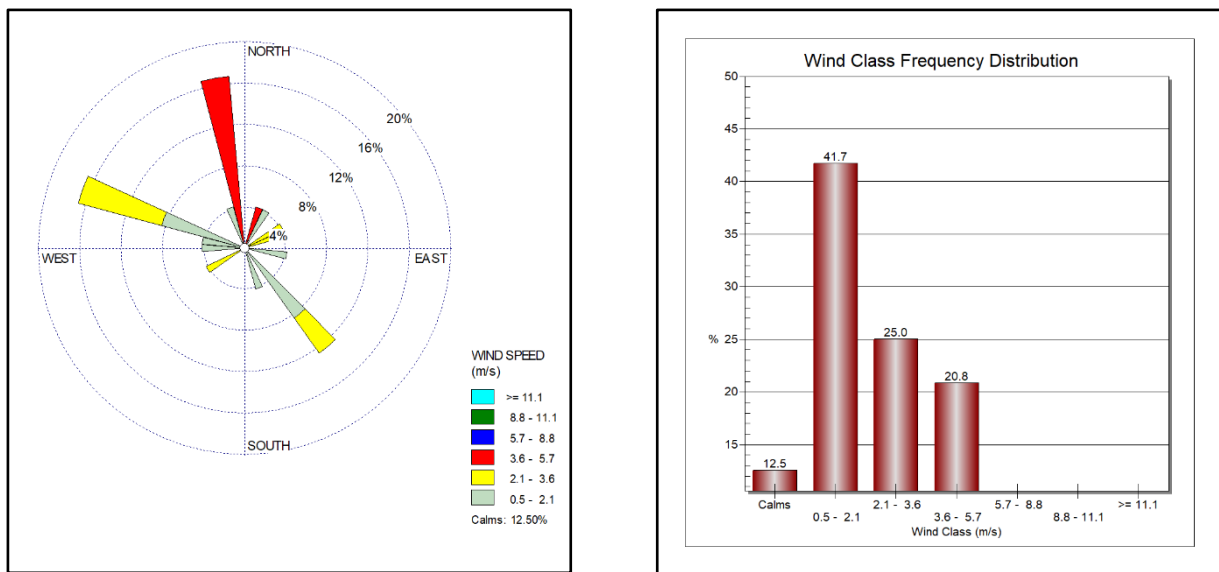


Figure 4. 16 Wind Class Frequency Distribution at Nyaung Kan Village (ASR14)

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 28 June 2022 to 29 June 2022. 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	29.06.2022	7:00:13-7:59:13	49.23	A	Day	54.48
2	29.06.2022	8:00:13-8:59:13	48.50	A	Day	
3	29.06.2022	9:00:13-9:59:13	48.84	A	Day	
4	28.06.2022	10:00:13-10:59:13	52.83	A	Day	
5	28.06.2022	11:00:13-11:59:13	52.53	A	Day	
6	28.06.2022	12:00:13-12:59:13	49.66	A	Day	
7	28.06.2022	13:00:13-13:59:13	50.89	A	Day	
8	28.06.2022	14:00:13-14:59:13	47.18	A	Day	
9	28.06.2022	15:00:13-15:59:13	48.04	A	Day	
10	28.06.2022	16:00:13-16:59:13	53.34	A	Day	
11	28.06.2022	17:00:13-17:59:13	61.07	A	Day	
12	28.06.2022	18:00:13-18:59:13	67.40	A	Day	
13	28.06.2022	19:00:13-19:59:13	66.55	A	Day	
14	28.06.2022	20:00:13-20:59:13	60.18	A	Day	
15	28.06.2022	21:00:13-21:59:13	60.90	A	Day	
16	28.06.2022	22:00:13-22:59:13	56.68	A	Night	50.19
17	28.06.2022	23:00:13-23:59:13	48.69	A	Night	
18	29.06.2022	0:00:13-0:59:13	48.99	A	Night	
19	29.06.2022	1:00:13-1:59:13	48.50	A	Night	
20	29.06.2022	2:00:13-2:59:13	48.98	A	Night	
21	29.06.2022	3:00:13-3:59:13	49.24	A	Night	
22	29.06.2022	4:00:13-4:59:13	53.22	A	Night	
23	29.06.2022	5:00:13-5:59:13	48.69	A	Night	
24	29.06.2022	6:00:13-6:59:13	48.72	A	Night	
Average			52.87			

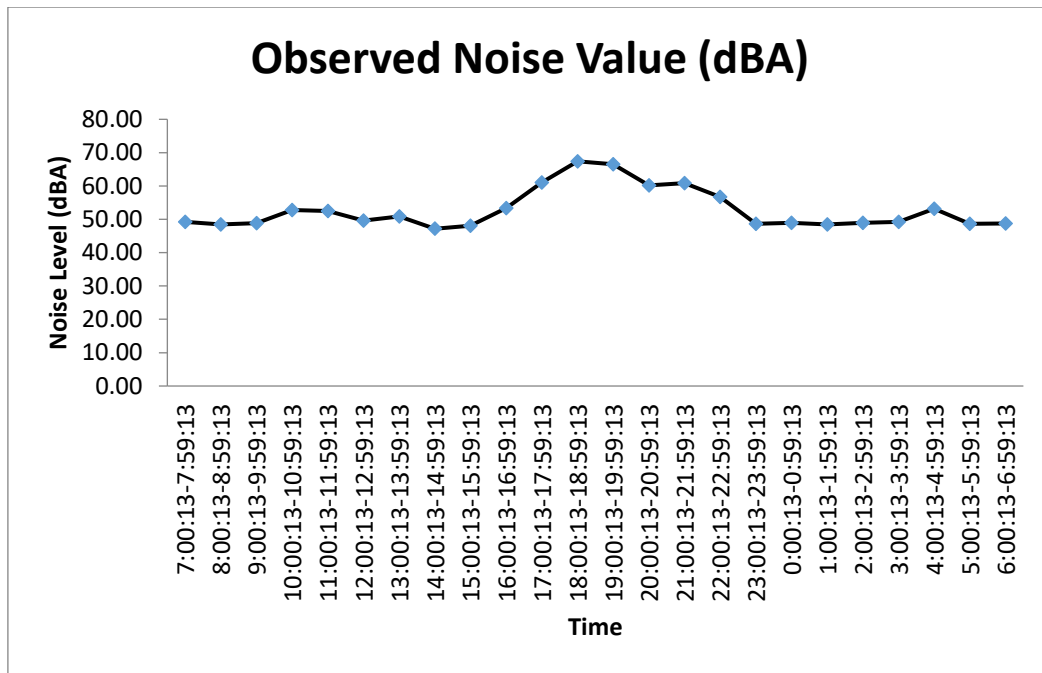


Figure 4. 17 Noise Level at near Sembcorp Myingyan Power Plant

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	29.06.2022	7:00:13-7:59:13	63.54	A	Day	57.41
2	29.06.2022	8:00:13-8:59:13	56.78	A	Day	
3	28.06.2022	9:00:13-9:59:13	53.39	A	Day	
4	28.06.2022	10:00:13-10:59:13	54.02	A	Day	
5	28.06.2022	11:00:13-11:59:13	51.89	A	Day	
6	28.06.2022	12:00:13-12:59:13	52.31	A	Day	
7	28.06.2022	13:00:13-13:59:13	50.28	A	Day	
8	28.06.2022	14:00:13-14:59:13	52.68	A	Day	
9	28.06.2022	15:00:13-15:59:13	58.00	A	Day	
10	28.06.2022	16:00:13-16:59:13	63.47	A	Day	
11	28.06.2022	17:00:13-17:59:13	57.42	A	Day	
12	28.06.2022	18:00:13-18:59:13	73.67	A	Day	
13	28.06.2022	19:00:13-19:59:13	62.20	A	Day	
14	28.06.2022	20:00:13-20:59:13	54.52	A	Day	
15	28.06.2022	21:00:13-21:59:13	56.97	A	Day	
16	28.06.2022	22:00:13-22:59:13	52.44	A	Night	56.40
17	28.06.2022	23:00:13-23:59:13	52.04	A	Night	
18	29.06.2022	0:00:13-0:59:13	52.12	A	Night	
19	29.06.2022	1:00:13-1:59:13	54.59	A	Night	
20	29.06.2022	2:00:13-2:59:13	51.75	A	Night	

21	29.06.2022	3:00:13-3:59:13	55.08	A	Night
22	29.06.2022	4:00:13-4:59:13	67.30	A	Night
23	29.06.2022	5:00:13-5:59:13	56.80	A	Night
24	29.06.2022	6:00:13-6:59:13	65.50	A	Night
Average			57.03		

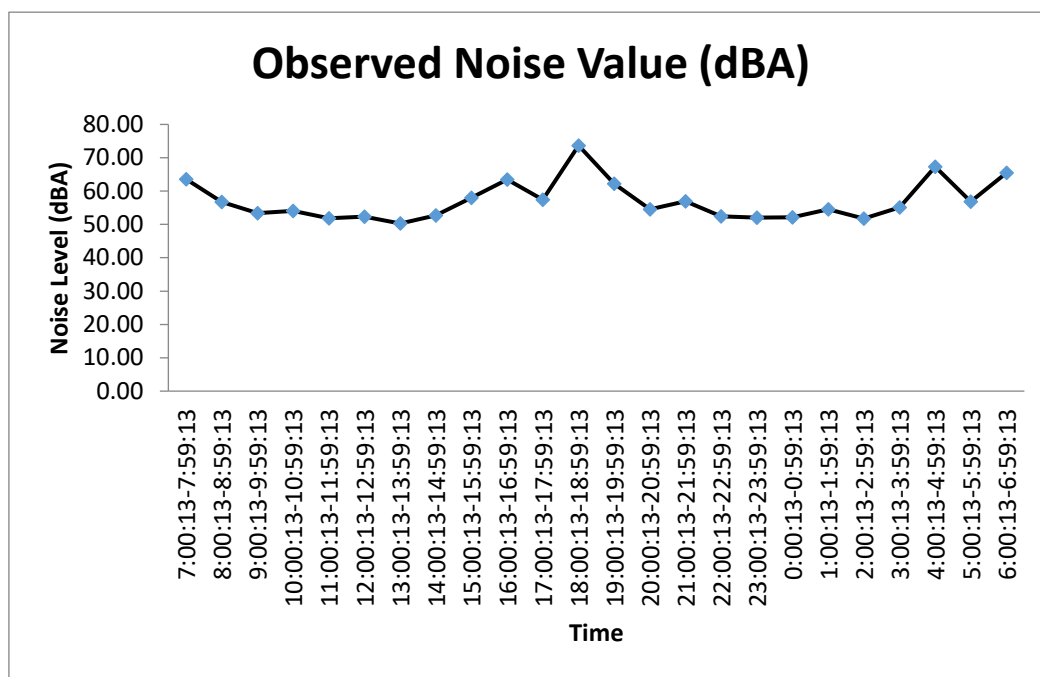


Figure 4. 18 Noise Level at Sa Ka Village

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	54.48	50.19
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	57.41	56.40
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 54.48 dB (A) and 57.41 dB (A). The observed noise values of the proposed project for night time at Sembcorp myingyan power plant and Sa Ka village are 50.19 dB (A) and 56.40 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. The observed values of daytime and 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 daytime and 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/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.skcinstruments.com/products/Haz-Scanner.asp for more information.



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



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www.skcinstruments.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	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, STEL
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-423 (Max)
Software	PC or Mac
Enclosure (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	-40 to 148 F (-40 to 60 C)
Humidity	95% non-condensing (use mist heater)
Wireless Radio Modes	900 MHz (U.S.), 948 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.*

- 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
- Acoustic 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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, ethanal, ethylene, or ethylene oxide
Toxic Gas: HCl - Hydrogen Chloride	Electrochemical	0 to 100 ppm	Greater of < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 < ± 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 applica- tions	Greater of < ± 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	$\pm 1\%$ 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 $\pm 3\%$ 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	$\pm 2\%$ RH	1% RH	1% RH	Standard sensor
Solar Radiance Intensity	Photodiode	1110 watts/ square meter (W/m ²)	$\pm 5\%$ 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 milliRad/hr	$\pm 10\%$ Typical $\pm 15\%$ 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)	$\pm 10\%$ or 5% FS	1 G	1 G	Optional meter
Wind Speed/ Direction	9-cut anemometer/ continuous rotation potentiometric wind direction vane	0 to 125 mph/ 5 to 355°	± 1 mph or $\pm 8\%$ $\pm 3^\circ$	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	Capsulated 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-----	2021 September 10th

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

APPENDIX B

Field Photos

Air Monitoring Point at Sa Ka Village
(ASR4)

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

28.06.2022 to 29.06.2022



Air Monitoring Point at Hnan Ywa Village
(ASR3)

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

29.06.2022 to 30.06.2022



Air Monitoring Point at Gyoke Pin Village

(ASR5)

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

30.06.2022 to 01.07.2022

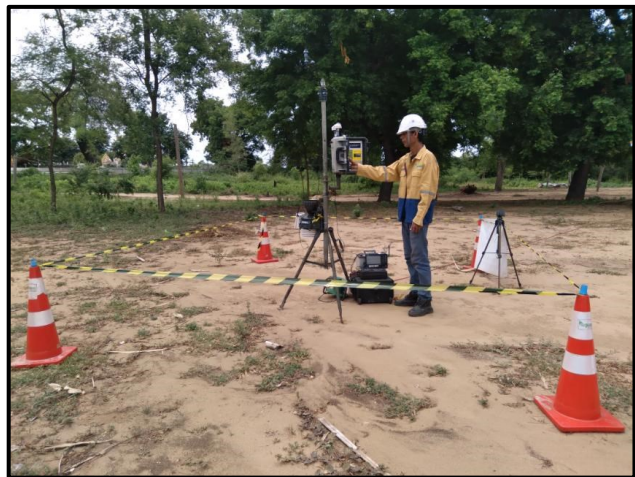


Air Monitoring Point at Nyaung Kan Village

(ASR14)

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

01.07.2022 to 02.07.2022



Report No. : GEM-LAB-202204014

Revision No. : 1

Report Date : 5 April, 2022

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 Discahrge sampling skid Sampling Date : 28 March, 2022
Sample No. : W-2203101 Sampling By : Customer
Waste Profile No. : - Sample Received Date : 28 March, 2022

No.	Parameter	Method	Unit	Result	LOQ
1	pH	APHA 4500 H+ B (Electrometric Method)	-	7.35	0.00
2	SS	APHA 2540D (Dry at 103-105°C Method)	mg/l	10	-
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	8.9	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	2.1	0.5
6	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	1.49	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	0.696	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	0.532	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 April 5, 2022
Managing Director

< Analysis Application Form >

Date: 28-3-22

Client's information (to be described in the tax invoice)		Client's information to be described in the analysis report (if it should be specified)				
Client name: Sembcorp Myingyan Power Company Limited		Client name: Sembcorp Myingyan Power Company Limited				
Address of client: Beside of No. 1 Steel Mill, Sa Khar Village, Myingyan		Address of client: Beside of No. 1 Steel Mill, Sa Khar Village, Myingyan				
PO Number:		PO Number:				
Project name:		Project name:				
Tel No. / Email: (95) 19345233, thandar.win@sembcorp.com		Tel No. / Email: Zaw Moe Aung <zaw.moeaung@sembcorp.com>				
Contact person/Position: Thandar Win		Contact person/Position: Mr. Zaw Moe Aung (HSE)				
Sample information	Sampling date:	Sample bottle(s): <input type="checkbox"/> Need to be returned. <input checked="" type="checkbox"/> Not need				
	Sampling by: <i>Customer</i>	Expected analysis report due date:				
*To be filled by GEM Lab		Sampling Service: <input checked="" type="checkbox"/> No Use, <input type="checkbox"/> Use (Sampling date:		Sampling by:)		
Sample details	No.	Example	1	2	3	
	Sample name	WW-1	CMB Discharge sampling skid			
Sample information	Type of water	<input checked="" type="checkbox"/> Drinking water	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Drinking water	<input type="checkbox"/> Drinking water	
		<input type="checkbox"/> Surface water (river, lake etc.)	<input type="checkbox"/> Surface water (river, lake etc.)	<input type="checkbox"/> Surface water (river, lake etc.)	<input type="checkbox"/> Surface water (river, lake etc.)	
		<input type="checkbox"/> Ground water	<input type="checkbox"/> Ground water	<input type="checkbox"/> Ground water	<input type="checkbox"/> Ground water	
		<input type="checkbox"/> Saline/sea water	<input type="checkbox"/> Saline/sea water	<input type="checkbox"/> Saline/sea water	<input type="checkbox"/> Saline/sea water	
		<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater	
Volume of sample container		500 mL/bottle				
Q'ty of container		Total 2 bottles				
Analysis parameter	pH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	O&G	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Suspended Solid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Nitrogen	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Phosphorous	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	COD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Free Chlorine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium (Total)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Iron	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Zinc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Lead	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cadmium	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mercury	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Arsenic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other request (if any)	-Nitrate, -Fluoride -Total Alkalinity					
*To be filled by GEM Lab	Sample No	*****	W-2203101			
Remark (if any), June(2022), September(2022), December(2022), March(2022) 04014						
*To be filled by GEM lab Application Received by: 		Sample Received by: 		Application No: (*our administration section)		
Date: 28.3.22 he		Date: 28.3.22 he		[]-[]		



Report No. : GEM-LAB-202207027

Revision No. : 1

Report Date : 15 July, 2022

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 : 1 July, 2022
Sample No. : W-2207001 Sampling By : Customer
Waste Profile No. : - Sample Received Date : 1 July, 2022

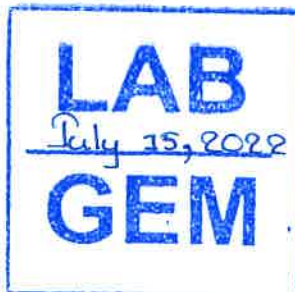
No.	Parameter	Method	Unit	Result	LOQ
1	pH	APHA 4500 H+ B (Electrometric Method)	-	7.16	0.00
2	SS	APHA 2540D (Dry at 103-105°C Method)	mg/l	16	-
3	COD (Cr)	APHA 5220D (Close Reflux Colorimetric Method)	mg/l	11.5	0.7
4	Oil and Grease	APHA 5520B (Partition-Gravimetric Method)	mg/l	<3.1	3.1
5	Total Nitrogen	HACH Method 10072 (TNT Persulfate Digestion Method)	mg/l	1.1	0.5
6	Total Phosphorous	APHA 4500-P E (Ascorbic Acid Method)	mg/l	1.39	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	0.428	0.005
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	0.028	0.005
11	Cadmium	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.005	0.005
12	Copper	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.005	0.005
13	Lead	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	≤0.005	0.005
14	Iron	APHA 3120 B (Inductively Coupled Plasma (ICP) Method)	mg/l	0.268	0.005
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 :

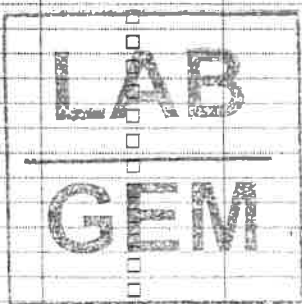
Hideki Yomo July 15, 2022
Managing Director

< Analysis Application Form >

Date: 1-7-22

Client's information (to be described in the tax invoice)		Client's information (to be described in the analysis report (if it should be specified))	
Client name: Sembcorp Myingyan Power Company Limited		Client name: Sembcorp Myingyan Power Company Limited	
Address of client: Beside of No. 1 Steel Mill, Sa Khar Village, Myingyan		Address of client: Beside of No. 1 Steel Mill, Sa Khar Village, Myingyan	
PO Number: 4147001062		PO Number: 4147001062	
Project name:		Project name:	
Tel No. / Email: (95) 19345233, thandar.win@sembcorp.com		Tel No. / Email: Zaw Moe Aung, Wai Yan Myint <zaw.moeaung@sembcorp.com> <wai.myint@sembcorp.com>	
Contact person/Position: Thandar Win		Contact person/Position: Mr. Zaw Moe Aung (HSE)	
Sample information	Sampling date: Sampling by: <i>Customer</i>	Sample bottle(s): <input type="checkbox"/> Need to be returned. <input checked="" type="checkbox"/> Not need	Expected analysis report due date:
*To be filled by GEM Lab: Sampling Service: <input checked="" type="checkbox"/> No Use. <input type="checkbox"/> Use (Sampling date: _____ Sampling by: _____)			

Sample details	No.	Example	1	2	3
	Sample name	WW-1	CMB Discharge sampling skid		
Sample information	Type of water	<input checked="" type="checkbox"/> Drinking water <input type="checkbox"/> Surface water (river, lake etc.) <input type="checkbox"/> Ground water <input type="checkbox"/> Saline/sea water <input type="checkbox"/> Wastewater <input type="checkbox"/> Others ()	<input type="checkbox"/> Drinking water <input type="checkbox"/> Surface water (river, lake etc.) <input type="checkbox"/> Ground water <input type="checkbox"/> Saline/sea water <input checked="" type="checkbox"/> Wastewater <input type="checkbox"/> Others (Soil)	<input type="checkbox"/> Drinking water <input type="checkbox"/> Surface water (river, lake etc.) <input type="checkbox"/> Ground water <input type="checkbox"/> Saline/sea water <input type="checkbox"/> Wastewater <input type="checkbox"/> Others ()	<input type="checkbox"/> Drinking water <input type="checkbox"/> Surface water (river, lake etc.) <input type="checkbox"/> Ground water <input type="checkbox"/> Saline/sea water <input type="checkbox"/> Wastewater <input type="checkbox"/> Others ()
	Volume of sample container	500 mL/bottle	500 mL/bottle		
	Q'ty of container	Total 2 bottles	Total 2 bottles		
	pH	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	O&G	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Total Suspended Solid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Nitrogen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Phosphorous	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
COD	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Free Chlorine	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium (Total)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other request (if any)	Nitrate, Fluoride Total Alkalinity				



To be filled by GEM Lab: Sample No. W2809001
 Remark of any: (June 2022, September 2022, December 2022, March 2022)
09022 *Wai Yan Myint (HSE)*

To be filled by GEM Lab: Application Received by: _____ Date: 1-7-22
 Sample Received by: _____ Date: 1-7-22
 Application No. (your administration section): 0299-0001

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan 2022

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 at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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
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 March as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
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
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
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

Date / Time of inspection: 31 Jan 2022**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Officer)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb 2022

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 at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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
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 March as per planned schedule.	Nil	ongoing	Zaw/Tin
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
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
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
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

Date / Time of inspection: 28 Feb 2022

Location: Designated points

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

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2022

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 at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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
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. See attached Air Quality Monitoring Report. Will be conducted again on June.	Nil	Done	Zaw/Tin
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
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
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
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

Date / Time of inspection: 31 March 2022

Location: Designated points

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

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2022

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 NO _x burners to reduce NO _x emission at stack to below 25ppm at all times?	Yes		Installed at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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 NO _x as NO ₂ , PM, SO ₂ , O ₂ , moisture content?	Yes		Monitoring by Continuous emissions monitoring system (CEMS) at sites.	Nil	Done	Zaw/Tin
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Already conducted on March. Will conduct again on June as per planned schedule.	Nil	Ongoing	Zaw/Tin
5	Annual CEMS validation for NO _x , CO, PM _{2.5} and O ₂ at Main Stack and Bypass Stack by using standard methods?	Yes		Weekly calibration is conducted by I&C team.	Nil	Done	Zaw/Tin
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
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
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

Date / Time of inspection: 31 Apr 2022**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Officer)

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2022

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 at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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
4	Monitor ambient air quality monitoring as per ESIA Monitoring Programmer formulated for the Plant.	Yes		Already conducted on March. Will conduct again on June as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
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
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
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

Date / Time of inspection: 31 May 2022**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Officer)

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2022

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 at both stack monitoring through CEMS. Regular maintenance performed by maintenance team.	Nil	Done	Zaw/Tin
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
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
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. See attached Air Quality Monitoring Report. Will be conducted again on Sep as per planned schedule.	Nil	Done	Zaw/Tin
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
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
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
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

Date / Time of inspection: 30 June 2022**Location:** Designated points**Role of Individual Undertaking Monitoring:** Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Lead) and 3rd Party Surveyor.

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan, 2022

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 31 Jan 2022

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead), Lek (Security)

Admin building
(HSSE Bulletin board)

HSSE bulletin board is updated information regularly as monthly basic.



RWI barge

AED device and first aid box are ready to use in case of emergency



Positive observation



Emergency Resources are inspected regularly.

Scenario



Date and Time: On 3rd Jan 2022, 09:00 am

Location: Workshop.

Scope of work: Lifting and mobilizing a pump for repairing purpose.

Incident occurrence:

- Overhead crane control switch jam and difficult to press while lifting and moving mechanical part.
- The mechanical part drop down on to floor incidentally.
- A maintenance worker trip and fall while escaping from drop material (left kneel and right elbow get abrasive injure).
- A maintenance worker got minor injury.

Overhead crane incident drill was conducted
(Table Top exercise)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb, 2022

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 28 Feb 2022

Location: Myingyan 225MW CCPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead), Lek (Security)



RWI barge

AED device and first aid box are ready to use in case of emergency

Positive observation



Emergency Resources are inspected regularly.

HSSE bulletin board is updated information regularly as monthly basic.



HSSE Bulletin board is updated regularly.

Scenario



Two strangers climbing up fencing (Behind Sewer Treatment Plant).

Date: 01/ 02/ 2022

Time: 09:30 pm

Location: Outside fence, North perimeter wall (Behind Sewer treatment plant).

Event: A security observed on CCTV that some (2) strangers climbing up on perimeter fence.



Intruder response drill was conducted during the month

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2022

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 31 Mar 2022

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead), Lek (Security)



Admin building (HSSE Bulletin board)	<p>HSSE bulletin board is updated information regularly as monthly basic.</p> 
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RWI barge	<p>AED device and first aid box are ready to use in case of emergency</p> 	<p>Positive observation</p> 
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Emergency Resources are inspected regularly.

Scenario.



Security guard found an suspected IED on an entering car.

Date: 05/ 03/ 2022

Time: 09:30 am

Location: Gate 1, security check point.



SUSPECTED IED FOUND HERE

IED response drill was conducted during the month

Sembcorp Myingyan Power Company Limited

ESMP Check list for April 2022

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 30 Apr 2022

Location: Myingyan 225MW CCPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead), Lek (Security)



Admin building
(HSSE Bulletin board)

HSSE bulletin board is updated information regularly as monthly basic.



RWI barge

AED device and first aid box are ready to use in case of emergency



Positive observation



Emergency Resources are inspected regularly.

Scenario



Cyclone Strike.

Date: 22nd March, 2022

Time: 10:00 am

Event: 60 mph wind striking in Myingyan Region.

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



Cyclone Strike response drill was conducted during the month

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2022

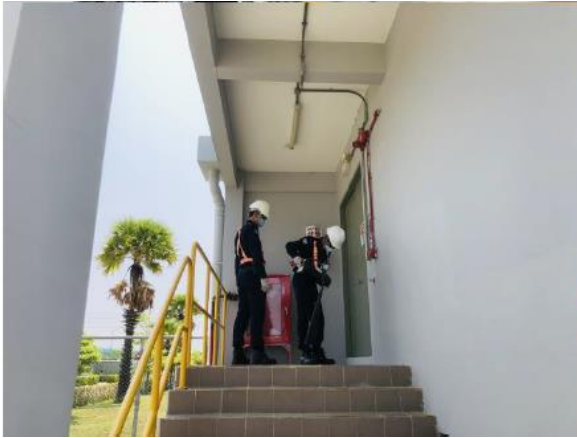
Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 31 May 2022

Location: Myingyan 225MW CAPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead), Lek (Security)



Admin building
(HSSE Bulletin board)

HSSE bulletin board is updated information regularly as monthly basic.



RWI barge

AED device and first aid box are ready to use in case of emergency



Positive observation



Emergency Resources are inspected regularly.

Scenario



A worker Heat stroke .

Date: 09/ 05/ 2022

Time: 2:30 pm

Location: Land Scaping Activity at Void Area

Event: A worker Heat stroke case while tree cutting & trimming working under the direct sunlight for long time

(Response process will be presented on response flow chart)



Heat Stroke response drill was conducted during the month

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2022

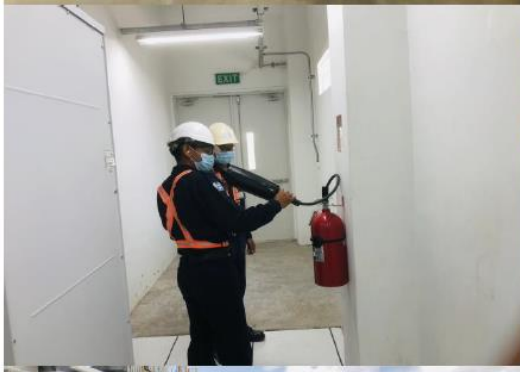
Emergency Preparedness & Response Management Monitoring Checklist Form (Operational Phase)

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
2	Emergency evacuation route is pasted on prominent location?	Yes		Posted in major buildings.	Nil	Done	Zaw/Tin
3	Regular inspection on emergency resources?	Yes		Monthly inspection is conducted by appointed person.	Nil	Done	Zaw/Tin
4	Emergency drill exercise was conducted regularly?	Yes		Conducting monthly Emergency response drill.	Nil	Done	Zaw/Tin
5	Regular inspection on clearance of emergency evacuation route, for emergency vehicle access?	Yes		Monthly inspection conducted by appointed person.	Nil	Done	Zaw/Tin
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
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

Date: 30 June 2022

Location: Myingyan 225MW CCPP

Name of individual undertaking the monitoring: Tin Ko Ko (HSSE Officer), Wai Yan Myint (HSSE Officer), Zaw Moe Aung (HSSE Lead) and Lek (Security)



RWI barge



Positive observation

AED device and first aid box are ready to use in case of emergency



Admin building (HSSE Bulletin board)

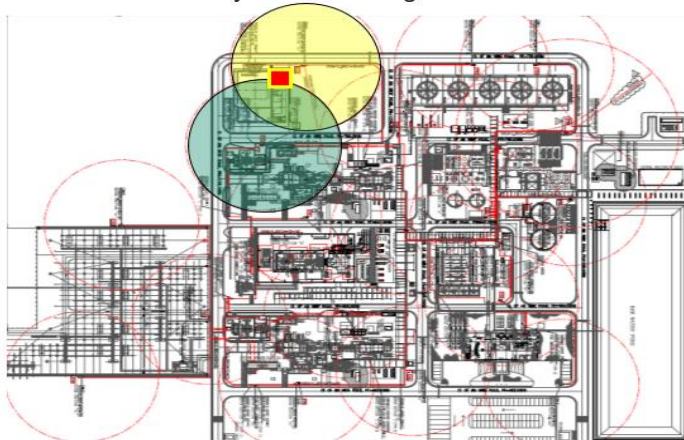
HSSE bulletin board is updated information regularly as monthly basic.



Emergency Resources are inspected regularly.

Scenario

Fire Truck & Fire Hydrants Coverages Area



Fire drill was conducted during the month

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan, 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
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 March.	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 31 Jan 2022

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb, 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
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 March.	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 28 Feb 2022

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
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. See attached Air Quality Monitoring Report. Will be conducted again on June	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 31 Mar 2022

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Sembcorp Myingyan Power Company Limited

ESMP Check list for Apr 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Already conducted on March. Will be conducted again on June by 3 rd party surveyor as per planned schedule.	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 30 Apr 2022

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
6	Regular monitoring done for identified NSRs within 500m from the Plant boundary? (ESIA recommended quarterly)	Yes		Already conducted on March. Will be conducted again on June by 3 rd party surveyor as per planned schedule.	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 31 May 2022

Location: Designated points

Name of individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2022

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
2	Are noisy parts of Machines enclosed?	Yes		Machines are installed in their enclosures.	Nil	Done	Zaw/Tin
3	Are Machines serviced and maintained regularly?	Yes		Nil	Nil	Ongoing	Zaw/Tin
4	Are machines correctly mounted to avoid vibration and reduce noise levels?	Yes		Nil	Nil	Done	Zaw/Tin
5	Are sound absorbing materials used on site such as noise barrier?	Yes		Nil	Nil	Done	Zaw/Tin
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. See attached Air Quality Monitoring Report. Will be conducted again on Sep	Nil	Ongoing	Zaw/Tin
7	Have there been any complaints from outside communities concerning noise through the Projects grievance mechanism?		No	Nil	Nil	Done	Zaw/Tin
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

Date / Time: 30 June 2022

Location: Designated points

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

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Jan 2022

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
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
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
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 31 Jan 2022.	Nil	Done	Zaw/Tin
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



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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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

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
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Date / Time: 31 Jan 2022

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead).

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		
19	Warehouse / Workshop External Surrounding Area	Service water line joint defection, corrosion and leakage. Also near area have algae and spread stagnant water 		End of this month		No	Mechanical Maintenance	Min Min Zaw
20	Warehouse / Workshop External Surrounding Area	Inside storage tank stagnant water of general usage inside have many garbage, debris 	Which can lead to mosquito larva breeding	End of this month		No	Mechanical Maintenance	Min Min Zaw

Weekly site-walk conducted

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Feb 2022

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
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
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
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 Feb 2022.	Nil	Done	Zaw/Tin
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

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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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


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
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Date / Time: 28 Feb 2022

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Myingyan 225MW CCPP Project

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	Water treatment plant surround Chemical Storage area	Permanent cover green sheet and warning signs SDS displayed at chemical storage room outside 	Positive Observation	Continue Monitor	Yes		Warehouse Kyaw Thu Latt Soe Thiha	Zaw Myint
2	Water treatment plant surround	All Firefighting equipment and related accessories found good condition 	Positive Observation	Monthly Inspection	Yes		IDG	HSSE

Weekly site-walk inspection conducted.

Sembcorp Myingyan Power Company Limited

ESMP Checklist for March 2022

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
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
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
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 2022.	Nil	Done	Zaw/Tin
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

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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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

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
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Date / Time: 31 Mar 2022

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

Myingyan 225MW CAPP 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 Rectification (Signature / Date)	Verified Personnel (Signature / Date)
					Yes	No		
2	RWI External Outside Electrical Room	Bird Waste massive there 	To Regular Clean 	Regular Clean Up		No	Team D	Wai Lin Phyto Zaw Lin Tun
3	RWI Internal Column & Brace Near Chemical tank	Thick corroded – 	To remove & clean all Rusted Area & Repaint proper including First primer Paint to apply for Safe Structure Painting	End of this month 2022		No	Mechanical Maintenance Ko Ko Aung 5S Team D	Wai Lin Phyto Zaw Lin Tun

Weekly site-walk inspection conducted.

Sembcorp Myingyan Power Company Limited

ESMP Checklist for April 2022

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
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
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
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 29 April 2022.	Nil	Done	Zaw/Tin
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





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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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

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
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Date / Time: 30 Apr 2022

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer), Zaw Moe Aung (HSSE Lead).

15	CMB Gas Skid	Suggested discuss to maintenance for the pumps installation for pipeline crossing on walk way	Required permanent access platform on pipeline cross over way			No	Mech Kyaw Swar Win	Min Min Zaw
								
16	Plant monsoon drain Surrounding & inside the Plant	Water is holding soil and blocked the drain line		20 May 2022		No	Facility	Soe Thiha
								

Weekly site-walk inspection conducted.

Sembcorp Myingyan Power Company Limited

ESMP Checklist for May 2022

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
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
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
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 May 2022.	Nil	Done	Zaw/Tin
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


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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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

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 conducted on 24 May 2022.	Nil		Done	Zaw/Tin
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Date / Time: 31 May 2022

Location: Plant area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead).

7	In front of Cooling Tower	Temporary of diesel tank lay down with support was defected in wood crack		10 May 2022		No	Zaw Min Oo	Kyaw Lin Htike
8	In Front of CT Diesel Tanker	Improper connection and insulation tape for earth cable		Done	Yes		Elc Aung Myo Kyaw	Zaw Lin Tun

Weekly site-walk inspection conducted.

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2022

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
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
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
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 June 2022.	Nil	Done	Zaw/Tin
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

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
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
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
9	Is there implemented HSE inspection program and documented?	Yes		Weekly management site-walk inspection conducted and documented accordingly.	Nil	Done	Zaw/Tin
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
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
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
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

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 conducted on 24 May 2022.	Nil		Done	Zaw/Tin
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Date / Time: 30 June 2022

Location: Plant area

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

7.	Inside Electrical building	2ea Fire Extinguisher displayed signages are no longer stick on the wall	Use proper adhesive to display on the wall.	28 Jun 2022		No	HSSE	Tin Ko Ko
								
8.	Inside Electrical building battery Room	Door seals are not in placed anymore	To rectify to replace the door seal	28-Jun-22		No	Facility UF Contractor	Soe Thiha
								

Weekly site-walk inspection conducted.

Sembcorp Myingyan Power Company Limited

ESMP Check list for Jan 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 March as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 31 Jan 2022

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 March as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 28 Feb 2022

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead)

Semcorp Myingyan Power Company Limited

ESMP Check list for Mar 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 as per planned schedule. See attach Water Quality Monitoring Report.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 31 Mar 2022

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead)

Sembcorp Myingyan Power Company Limited

ESMP Check list for Apr 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 on March. Will be conducted on June as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 31 Apr 2022

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead)

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 on March. Will be conducted on June as per planned schedule.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 31 May 2022

Location: Operation area

Role of Individual Undertaking Monitoring: Tin Ko Ko (HSSE Officer) and Zaw Moe Aung (HSSE Lead)

Semcorp Myingyan Power Company Limited

ESMP Check list for June 2022

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
2	Implement adequate sanitary facilities for onsite personnel.	Yes		Provided sufficient facility	Nil	Done	Zaw/Tin
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
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
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 Sep as per planned schedule. See attach Water Quality Monitoring Report.	Nil	Ongoing	Zaw/Tin
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
7	Implement Awareness program to workforce? (i.e. ESMP Awareness Training to Staff)	Yes		ESMP Awareness Training to Staff is planned to conduct on December.	Nil	Done	Zaw/Tin
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

Date / Time: 30 June 2022

Location: Operation area

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

Sembcorp Myingyan Power Company Limited

ESMP Checklist for Jan 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 31 Jan 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for Feb 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 28 Feb 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for Mar 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 31 Mar 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for Apr 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 30 Apr 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for May 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 31 May 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team

Sembcorp Myingyan Power Company Limited

ESMP Check list for June 2022

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
2	Are waste data records managed in accordance with the requirements?	Yes		Waste disposal data are recorded.	Nil	Done	Zaw/Tin
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
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
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
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
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
8	Are workers being trained on the requirements mentioned in this plan in accordance with the Workers Training Plan?	Yes		ESMP training is planned to conduct on December.	Nil	Done	Zaw/Tin

Date / Time: 30 June 2022

Location: Operation area

Role of Individual Undertaking Monitoring: HSSE and Operation Team