APPLICATION FORM FOR THE DEVELOPMENT OF PREDICTIVE EMISSION MONITORING SYSTEM (PEMS) AT INDUSTRIAL PREMISES

> **IMPORTANT:**
>
> **FEASIBILITY STUDY MUST BE CARRIED OUT AND THE TEST REPORT MUST BE ATTACHED TOGETHER WITH THIS APPLICATION FORM.**

A) INDUSTRIAL DETAILS

1. Industrial Name [   ]

2. Address [   ]

3. Plant Location [   ]

4. Telephone No. [   ] Fax [   ]

5. Plant ID [   ]

6. Plant Sector [   ]

7. Reasons of PEMS Installation

   EIA Approval Condition ☐ EQ (Clean Air) Regulations 2014 ☐

   DOE Directive ☐ Others ☐ (Please specify:)

8. Type of Application

   Existing installation ☐   Upgrading/Changes of Plant Operation ☐

   New Installation ☐   Changes from CEMS to PEMS application ☐

   Others ☐   (Please Specify:)

9. Total Stack At Plant [   ]

10. Contact Person [   ]

11. Job Position [   ]

12. Mobile Phone Number [   ]

13. Email [   ]

B) SOURCE OF STACK EMISSIONS
(FOR THE PURPOSE OF PEMS APPLICATION)

14. Type of Activity / Process: [   ]

15. Description of Industrial Process:
    (Attach as Appendix, if required) [   ]

16. Details of Specified Equipment Related to the Specified Chimney:

a) Type of Equipment: [   ]
    (e.g. Boiler, Waste Incinerator, Furnace, Thermal Heater, Turbine etc.)

b) Capacity (if applicable): [   ] MWe or kg/hr

c) Type of fuel (gas / solid / liquid)

    - Main fuel [   ]
    - *Alternative fuel (if any): [   ]

        *Explanation about the alternative fuel usage:

        [   ]

d) Fuel Quantity / Fuel load:

    - Main fuel [   ] kg/hr
    - Alternative fuel [   ] kg/hr

17. Type of Air Pollutant Monitored

Gases ☐ Total Particulates Matters (TPM) ☐ Opacity ☐

18. Parameters To Be Monitored From the Specified Chimney:

Applicable Limit Value ☐
(e.g. : Activity A1: Boilers of EQ (Clean Air) Regulations 2014)

NO.	PARAMETERS	CONCENTRATION (mg/m³)	LIMIT VALUE (mg/m³)

Notes:

a. *Pollutant concentration is based on the stack monitoring result or based on the approved design of plant operation and stack release*

b. *Emission limit value for each parameter may subject to the values mentioned in the EQ (Clean Air) Regulations 2014 / Environmental Management Plan (for EIA project)/ EIA Approval Condition /DOE Directive*

19. Stack Information

a) Type of stack   Round ☐   Square/ Rectangular ☐

b) Stack Number   ☐

c) Stack Height   ☐ mm/m

d) Outer Stack Diameter   ☐ mm/m

e) Inner Stack Diameter   ☐ mm/m

Downstream: ☐ mm/m   Upstream: ☐ mm/m

(From the gas inlet duct to port)   (From port to chimney outlet)

20. Stack Flue Gas Information (During Normal Plant Operation)

a) Temperature [ ]

b) Moisture Content [ ]

c) Oxygen Content [ ]

d) Air Flow Rate [ ]

e) Pressure [ ]

f) Stack Velocity [ ]

21. Written Approval / Notification Status of Fuel Burning Equipment (FBE)

a) FBE Serial/Ref/Model Number: [ ]
   (Please attach the relevant document)

b) DOE Letter Reference Number & Date: [ ]
   (Please attach the relevant document)

22. Written Approval / Notification of Air Pollution Control System Information(APCS) (eg Cyclone, Scrubber, Bag Filter etc):

a) APCS Serial/Ref/Model Number : [ ]
   (Please attach the relevant document)

b) DOE Letter Reference Number & Date : [ ]
   (Please attach the relevant document)

C) INFORMATION OF MOBILE CEMS EQUIPMENT

23. Description of mobile CEMS
   *Please specify the information of mobile CEMS equipment with the relevant catalog or product reference

a) Type:

[ ] Extractive System

[ ] In Situ System

b) Technique/Principal of Detection
(e.g.: UV Flourescence, GFC, NDIR,FTIR,DOAS etc.)

c) Model

d) Certification
(MCERT/TUV (QAL1) - (EN: 14181, EN:15267-1,EN :15267-2,EN:15267-3)

e) Certificate Renewal Date

24. Quality Assurance Plan (QAP) of PEMS
   *Please attach as an Appendix

25. PEMS Development and Operation Planning Schedule
   *Please attach the proposed schedule

D) INFORMATION OF PEMS DATA COMMUNICATION

26. Connectivity Type
27. Domain Name / I.P No.
28. TCP Port No.
29. Phone Number
30. User ID
31. Password

E) INFORMATION OF IN-HOUSE PEMS PERSONEL

32. Name
33. Position
34. Email
35. Certification
36. PEMS Relevant Training Information
   *Please provide training certificate

F) INFORMATION OF PEMS PROVIDER

37. Name of Company

38. Address & Email

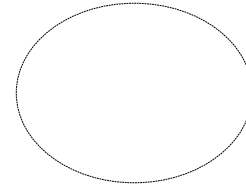39. Person In charge & Mobile Phone No.

40. PIC Email and Mobile Phone No.

G) DECLARATION

41. I …………………………………………………………………….. the authorized PEMS consultant of the owner/occupier who is given rights to develop the PEMS, hereby declare that I will be responsible on the proposed complete PEMS system that are submitted for this application.

_____
Signature   Company's Seal

Name   :
NRIC No.   :
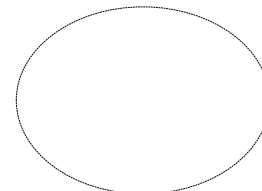Position   :
Date   :

42. I ……………………………………………………………………………….the owner/occupier, hereby declare that all the information given in this application is to the best of my knowledge and belief true and correct.

_____
Signature   Company's Seal

Name   :
NRIC No.   :
Position   :
Date   :

MINIMUM REQUIREMENTS FOR THE
PEMS FEASIBILITY STUDY REPORT FORMAT

NO.		INFORMATION	DESCRIPTION	
1.	1.1	Introduction	a.	Introduction about the consultant who will carry out the PEMS modeling.
			b.	Description of the type of PEMS modeling to be developed (Predictive Method).
	1.2	Objectives	a.	A description of the purpose of this feasibility study.
			b.	Type of study that will be conducted.
			c.	Type of information to be reported in this report.
	1.3	Scope of Study	a.	Description of the premises and facilities that will be involved in the use of PEMS.
2.		PEMS Methodology	a.	A description of the methods and workflows that will be involved in the development of PEMS.
			b.	PEMS model approach that will be used.
			c.	The proposed data collection period and the loading variation to be used.
			d.	PEMS development implementation schedule until the initial certification process (RATA).
3.		Process Description	a.	Description of the facility/ equipment process that will be involved with PEMS modeling (capacity, fuel type, process layout, contaminants to be released).
			b.	Historical data trend of the facility/equipment involved in PEMS development (minimum 1 year data).
4.		Process Input Data	a.	List of all potential data input processes (typical PEMS Input Parameters) that can be used to develop PEMS.
			b.	Classification of process input data (critical, secondary, tertiary).
			c.	List the data input process selected to develop PEMS.
			d.	Quality assurance and quality control of instrumentation/input sensor.

NO.	INFORMATION	DESCRIPTION
		e. Instrumentation diagram - the location and sensor input ID for the selected data input process must also be stated.
5.	Emission Monitoring Data	a. Description of the type of emission monitoring data available on the premises either CEMS data or manual sampling data. b. Summary of pollutant release results.
6.	Standard Reference Measurement	a. A description of the methods to be used to implement SRM. b. Information on the type and model of sampling equipment to be used as well as a description of the overall system. c. Engineering drawing showing the location of the measurement point for data collection/RM according to the guideline criteria.
7.	Preliminary analysis	a. Make an analysis between Process Input Data vs Assured Historical Data/SRM Data. b. Show the correlation between data input process and historical data emission and a description of it.
8.	Conclusion and recommendation	a. Conclusions obtained from the study conducted on the suitability of PEMS development. b. Other matters that need to be taken into account for the use of PEMS in the facility.

Note : The content of the report is not limited to the above mentioned information.

Important Notes:

- All technical drawings must have reference number, title and endorsement by the applicant and CEMS Consultant.
- All drawings must be submitted in A1/A2/A3 (whichever that is appropriate) paper size.
- Please ensure a complete application document is provided and submitted to :

  Pengarah Bahagian Udara
  Aras 4, Jabatan Alam Sekitar
  Precint 4, 62574 Putrajaya

IMPORTANT NOTICE FOR ALL INDUSTRIAL PREMISES

1. All PEMS data need to be sent to DOE via iREMOTE system. The applicant is required to ensure the procedure of PEMS registration in the iREMOTE system is completed once PEMS approval letter issued for this application is received.
2. PEMS audit need to be carried out once PEMS system is completely developed and operated.
3. All requirements as stipulated in the Volume 1: Guideline for the Installation and Maintenance of CEMS for Industrial Premises or Facilities, Version 7.0, June 2019 (whichever applicable to PEMS), USEPA references for PEMS as specified by the DOEM and Volume 2: Guideline for the Continuous Emission Monitoring Systems – Data Interface System (CEMS-DIS) (Version 7.0) Mac 2014 must be executed and complied.