

# **The Proposed Emission Standard, Environmental Monitoring & Compliance of Power Generation Plant in Indonesia.**

**Sigit Reliantoro**



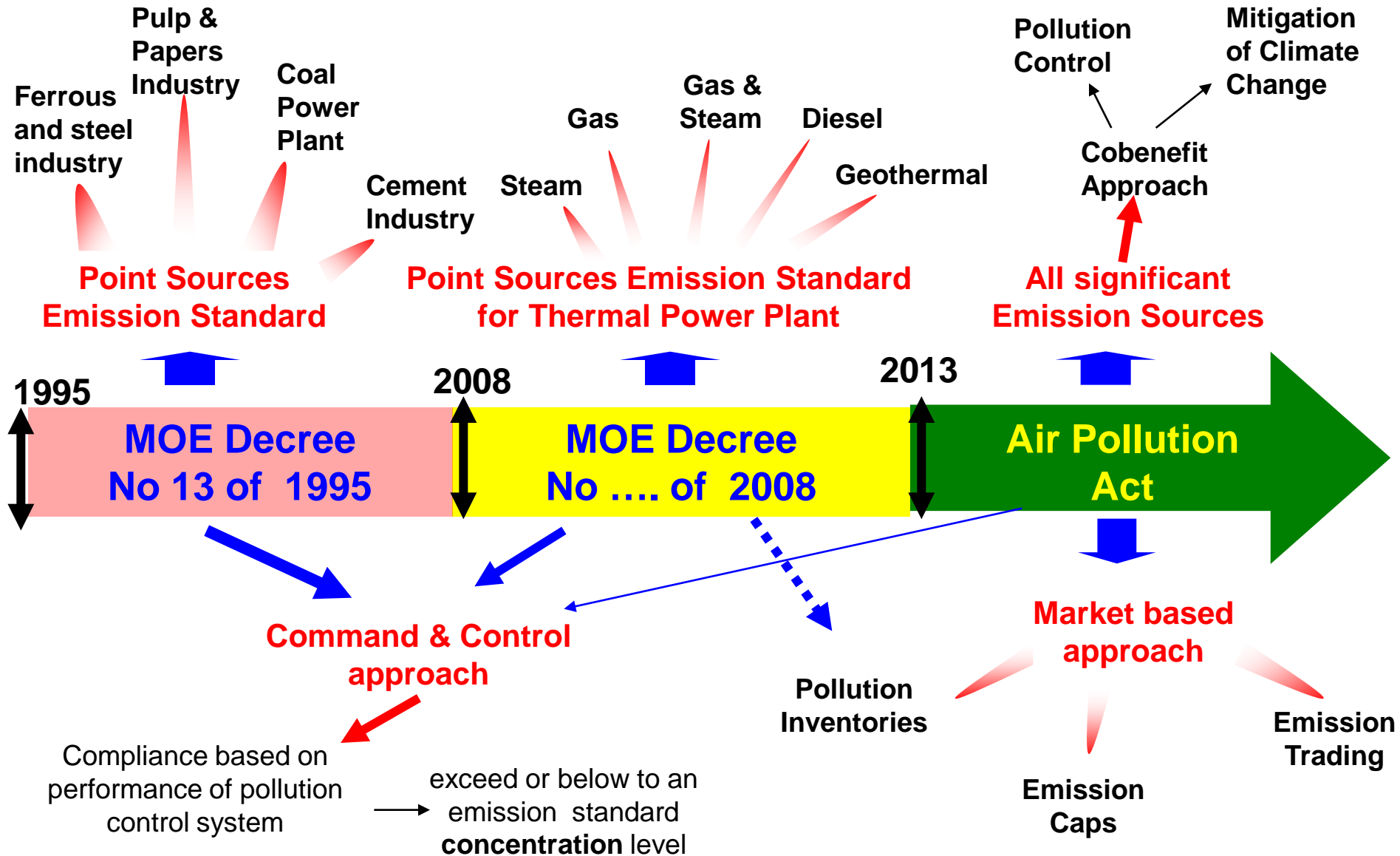
**DEPUTY FOR POLLUTION CONTROL**

**MINISTRY OF ENVIRONMENT  
REPUBLIC OF INDONESIA**

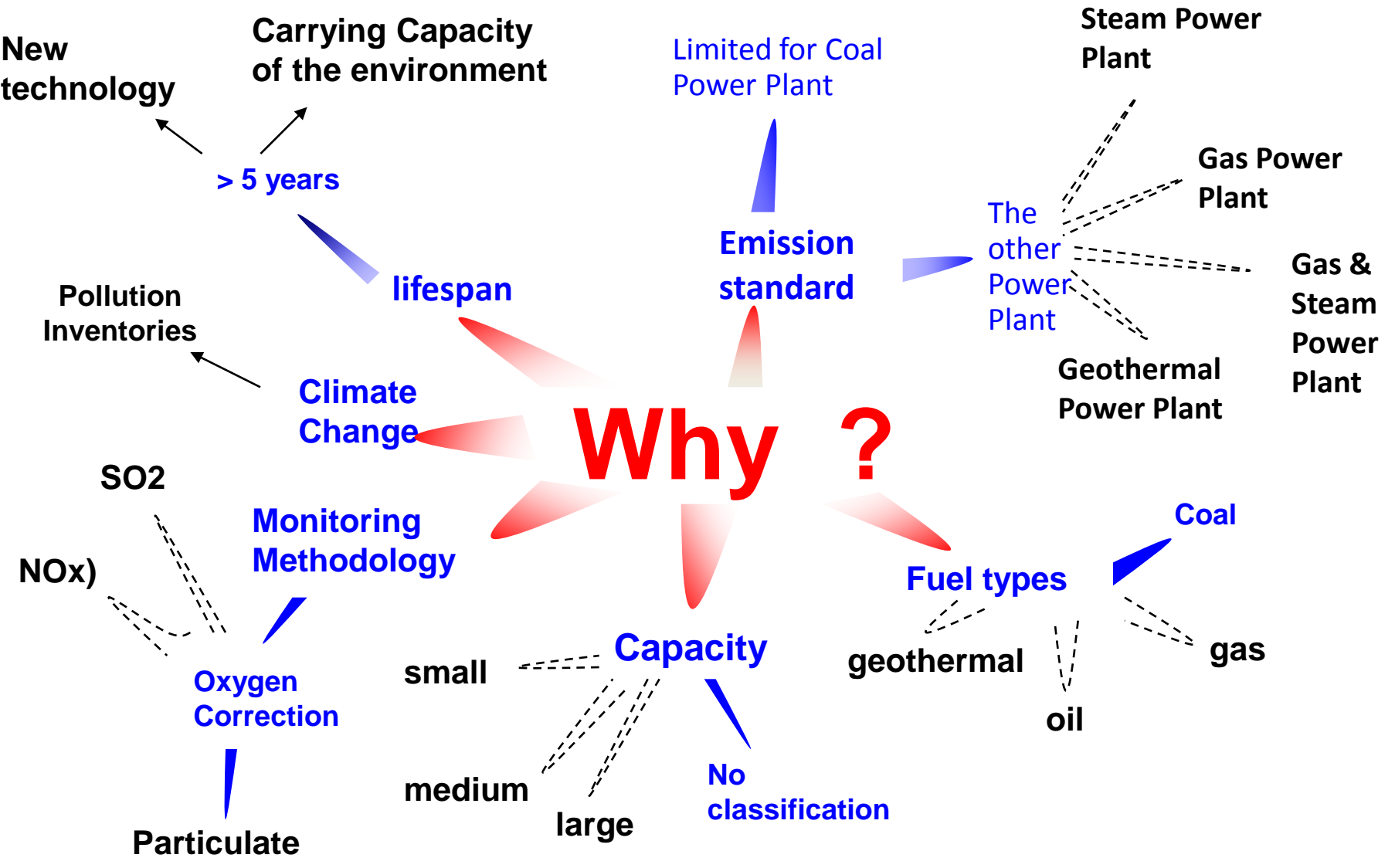
# MAIN TOPIC

- Background
- Why the standard needs to be revised ?
- The process of the regulation development
- The Proposed Regulation

# BACK GROUND



# Why ?



# Self Monitoring Report from 35 Power Plants

Chili  
Singapore  
Thailand  
United State  
Germany

**Best Practice of the other countries**

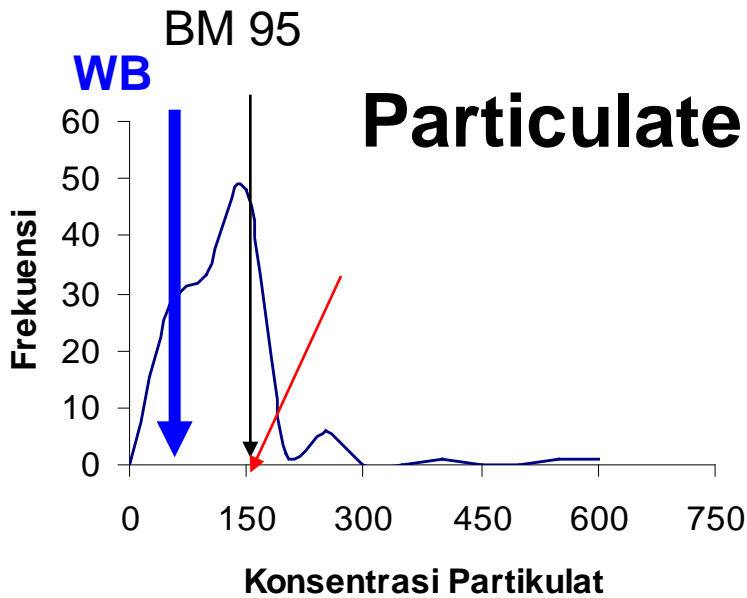
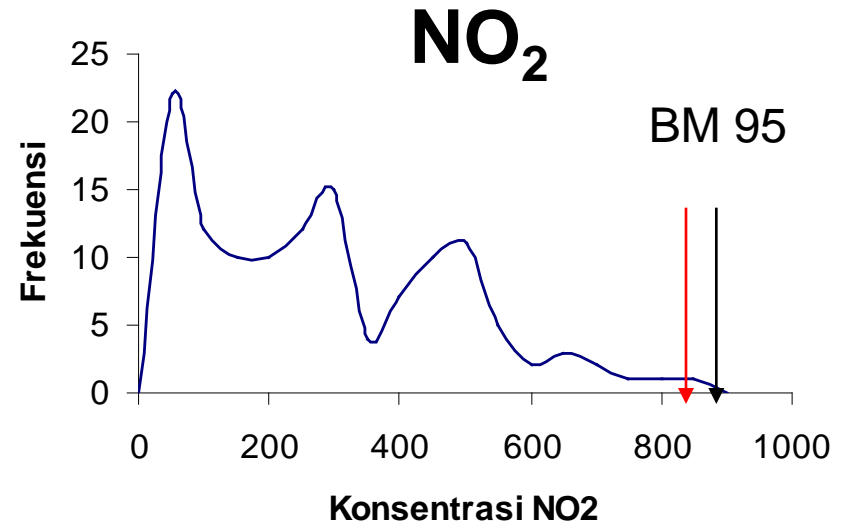
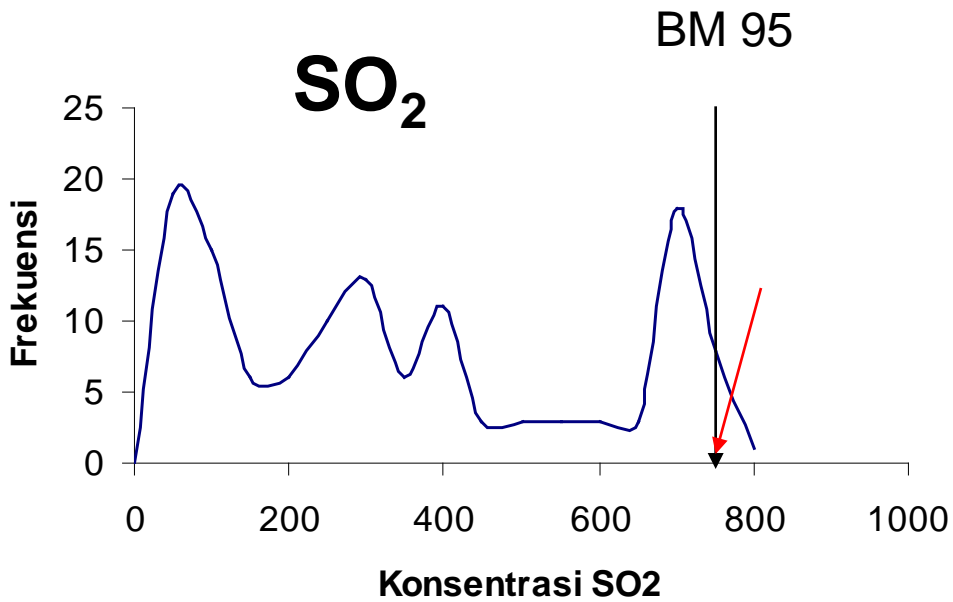
# HOW ?

**Program for Pollution Control Evaluation and Rating (PROPER) Data Base**

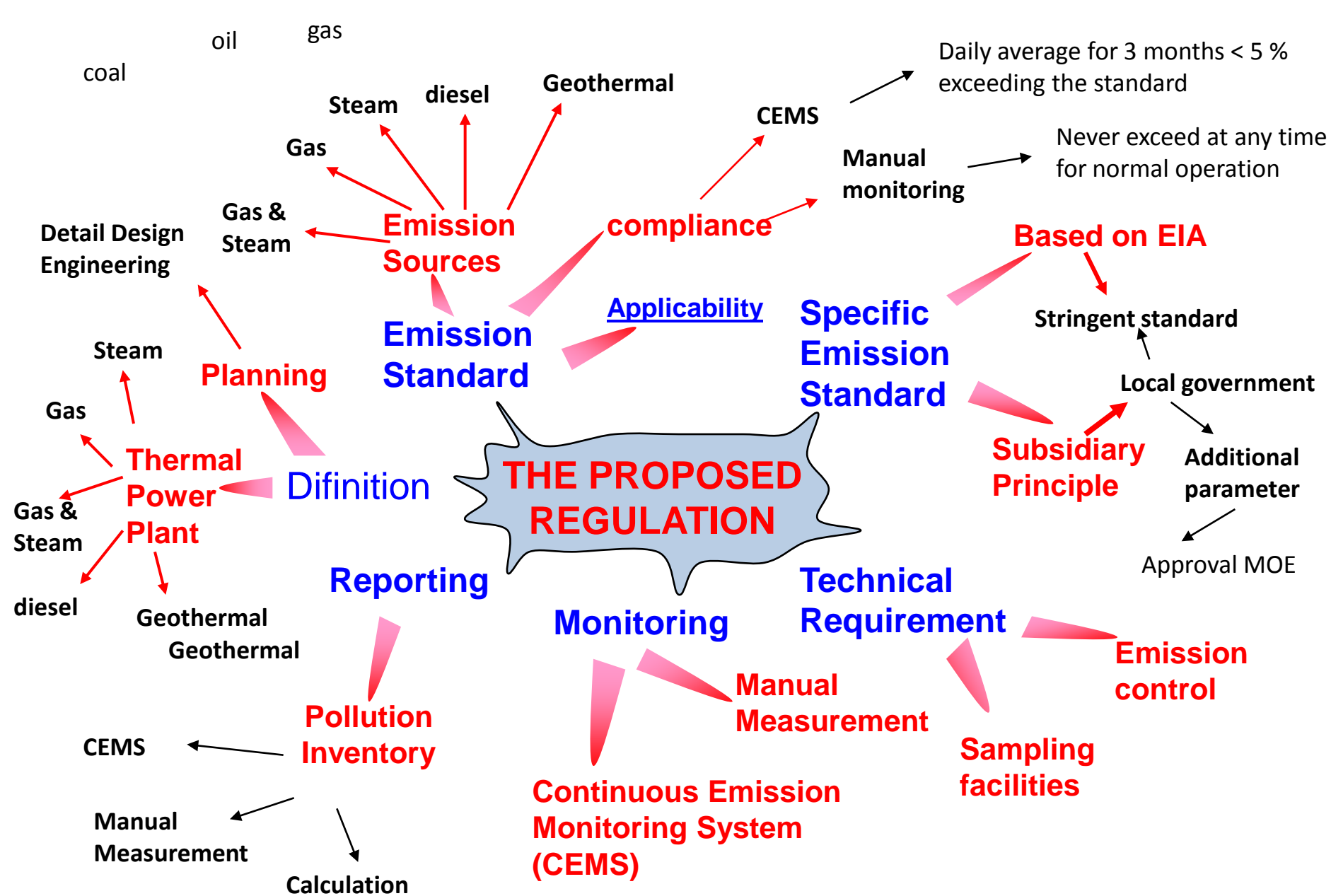
**Emission Measurement from 5 Power Plant**

Industries

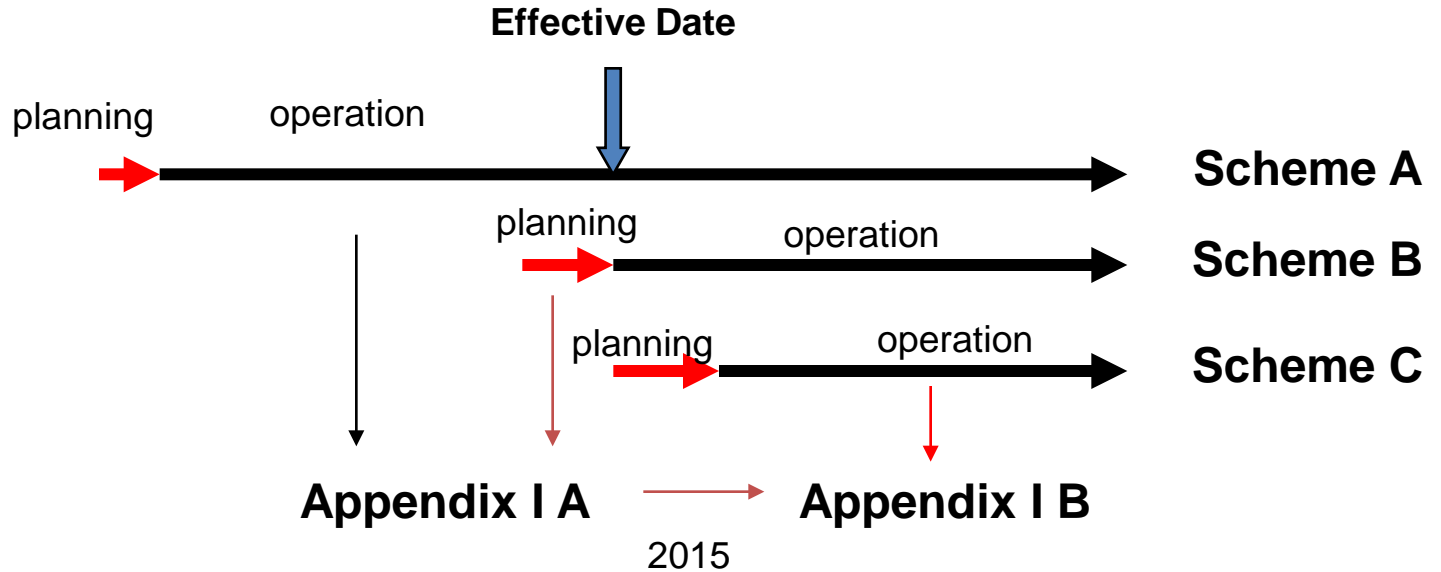
**Stakeholder Consultation**



**Example of Coal Power  
Plant Emission Base  
on PROPER Data Base**



# Applicability



## Point Sources Emission Standard for Steam Power Plant

No.	Parameter	Appendix I A			Appendix I B		
		Max. Concentration (mg/Nm <sup>3</sup> )			Max. Concentration (mg/Nm <sup>3</sup> )		
		Coal	Oil	Gas	Coal	Oil	Gas
1.	Sulfur Dioxide (SO <sub>2</sub> )	750	1500	150	700	650	50
2.	Nitrogen Oxide (NO <sub>x</sub> ) as NO <sub>2</sub>	850	800	400	450	450	320
3.	Particulate	150	150	50	100	100	30
4.	Opacity	20 %	20 %		20%	20%	-

# TECHNICAL REQUIREMENTS

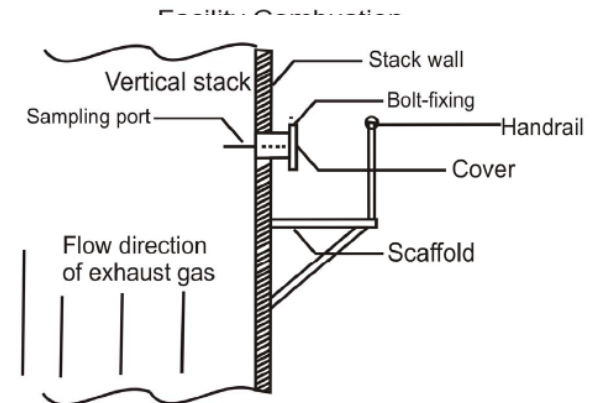
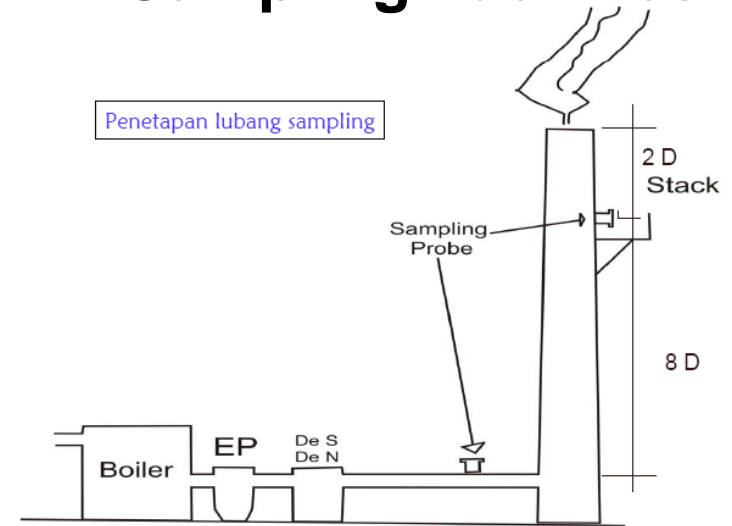
Manage the emission therefore  
It never exceed the emission standard

**Emission  
control**

Does not specify  
emission control  
equipments

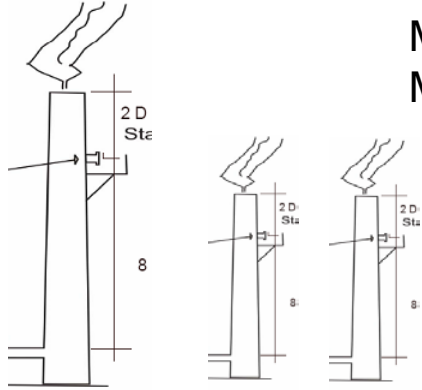
The height of the  
stack, FGD  
requirement,  
emission control  
must be addressed in  
EIA

## Sampling Facilities

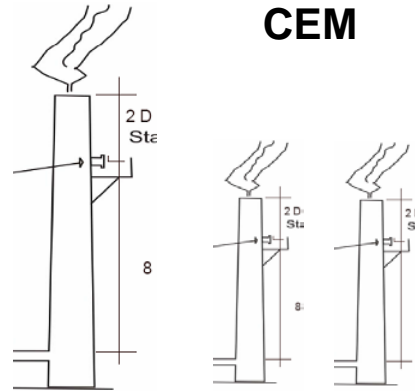


Sampling port and scaffold at a vertical stack

Highest emission load → **CEM**



Manual Monitoring



New plants

existing ←

**Where ?**

# MANUAL MONITORING REPORTING

**What ?**

Actual operation hours

Actual caloric value

Fuel consumption

Emission flow rate

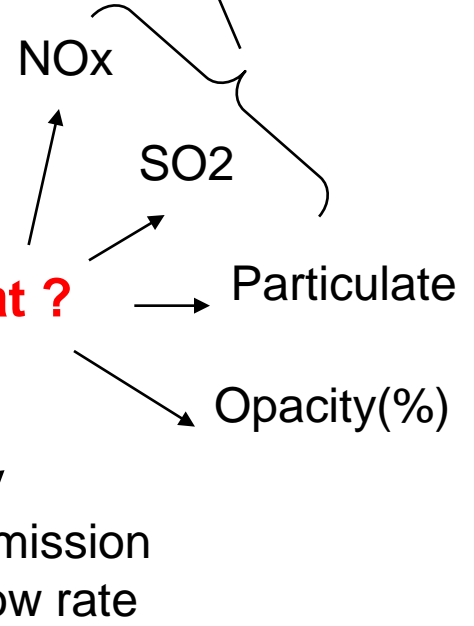
NO<sub>x</sub>

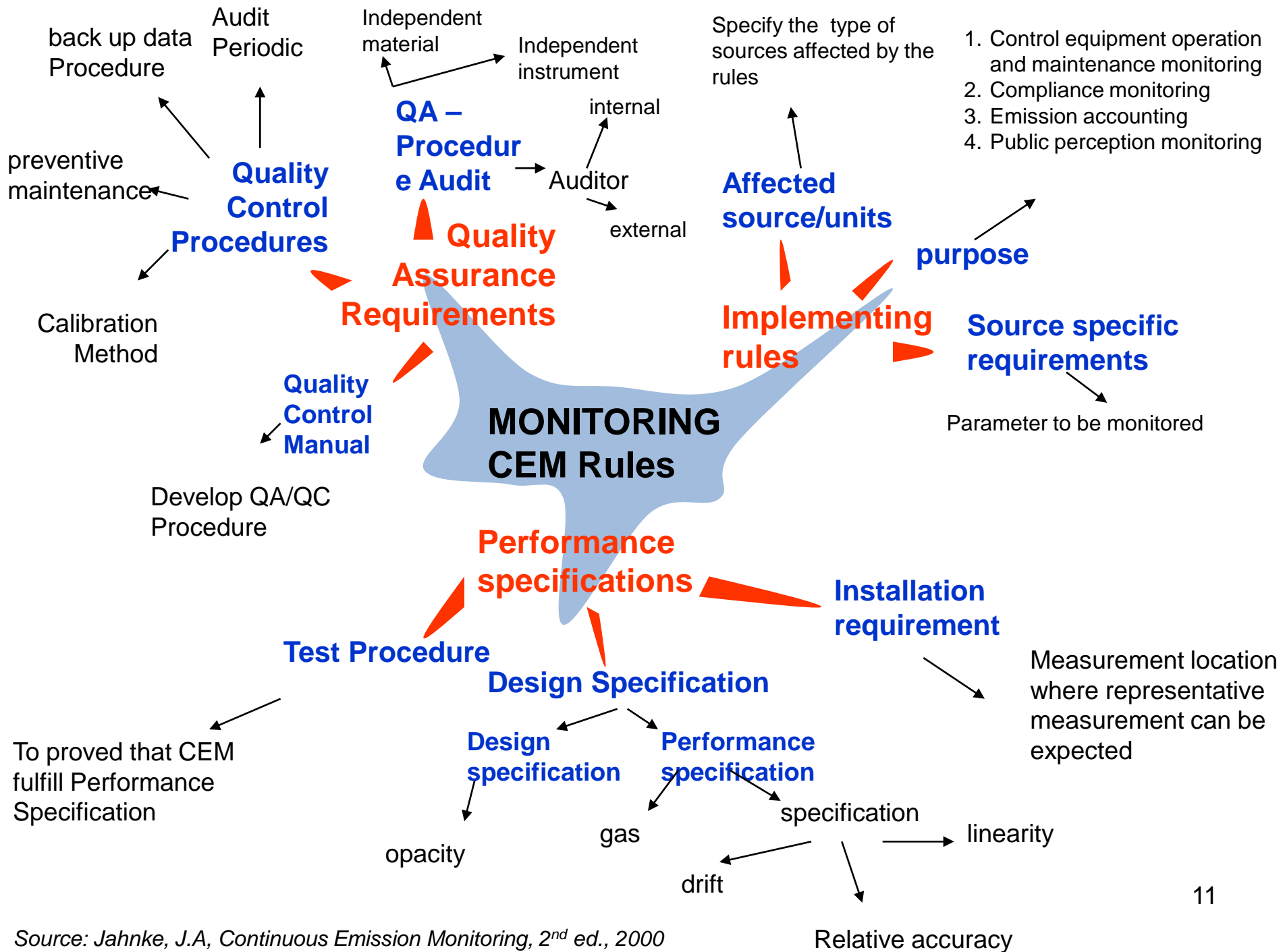
SO<sub>2</sub>

Particulate

Opacity(%)

Oxygen corrected  
measured





Capacity > 25 MW

Capacity < 25 MW, sulphur content in the fuel >= 2 % by weight

**New Power Plant**

**FOSSIL FUEL POWER PLANT**

**Existing**

**CEMS REQUIREMENTS**

**purpose**

1. Control equipment operation and maintenance monitoring
2. Compliance monitoring
3. Emission accounting
4. Public perception monitoring

Capacity > 25 MW

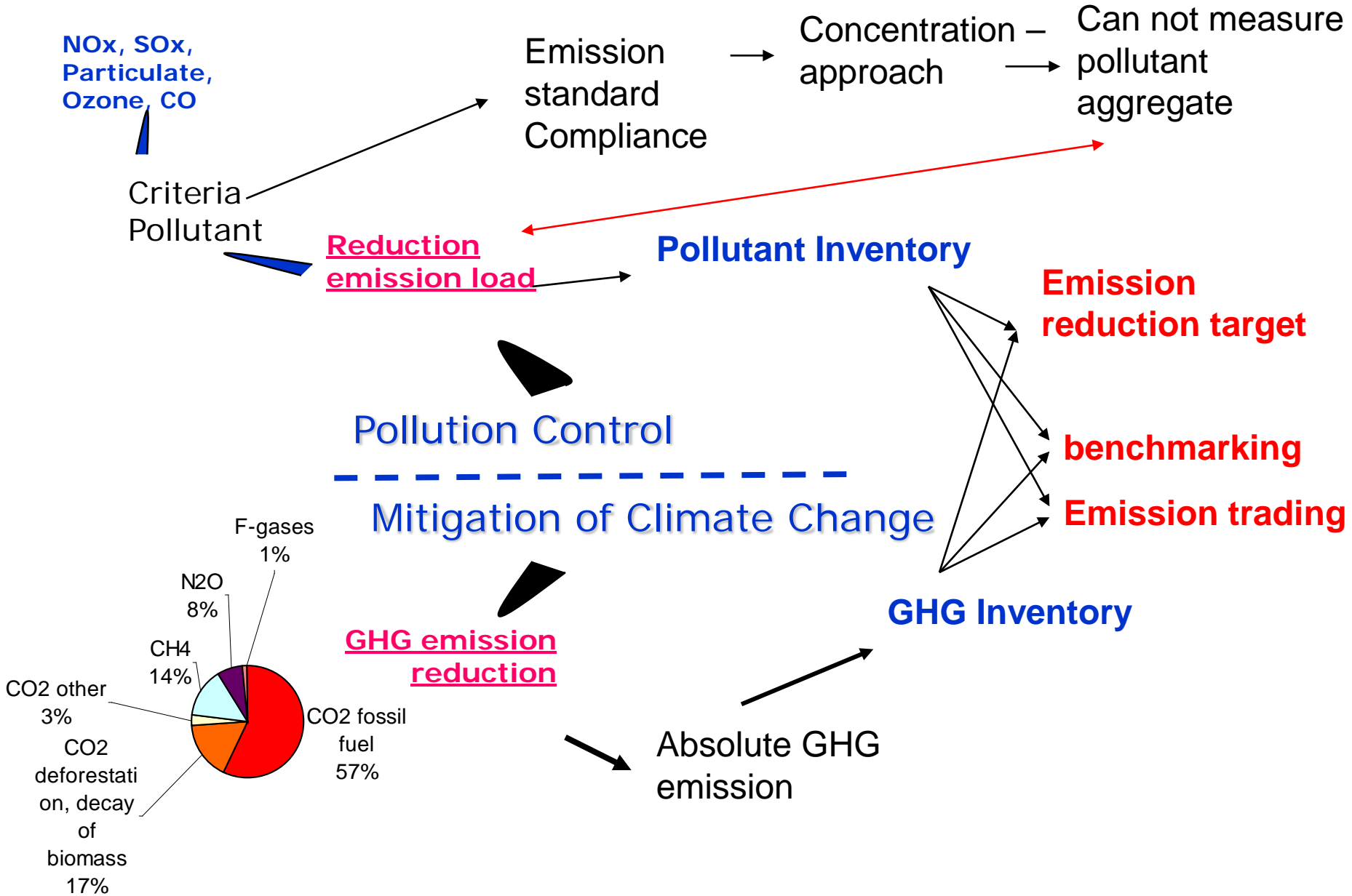
**reporting**

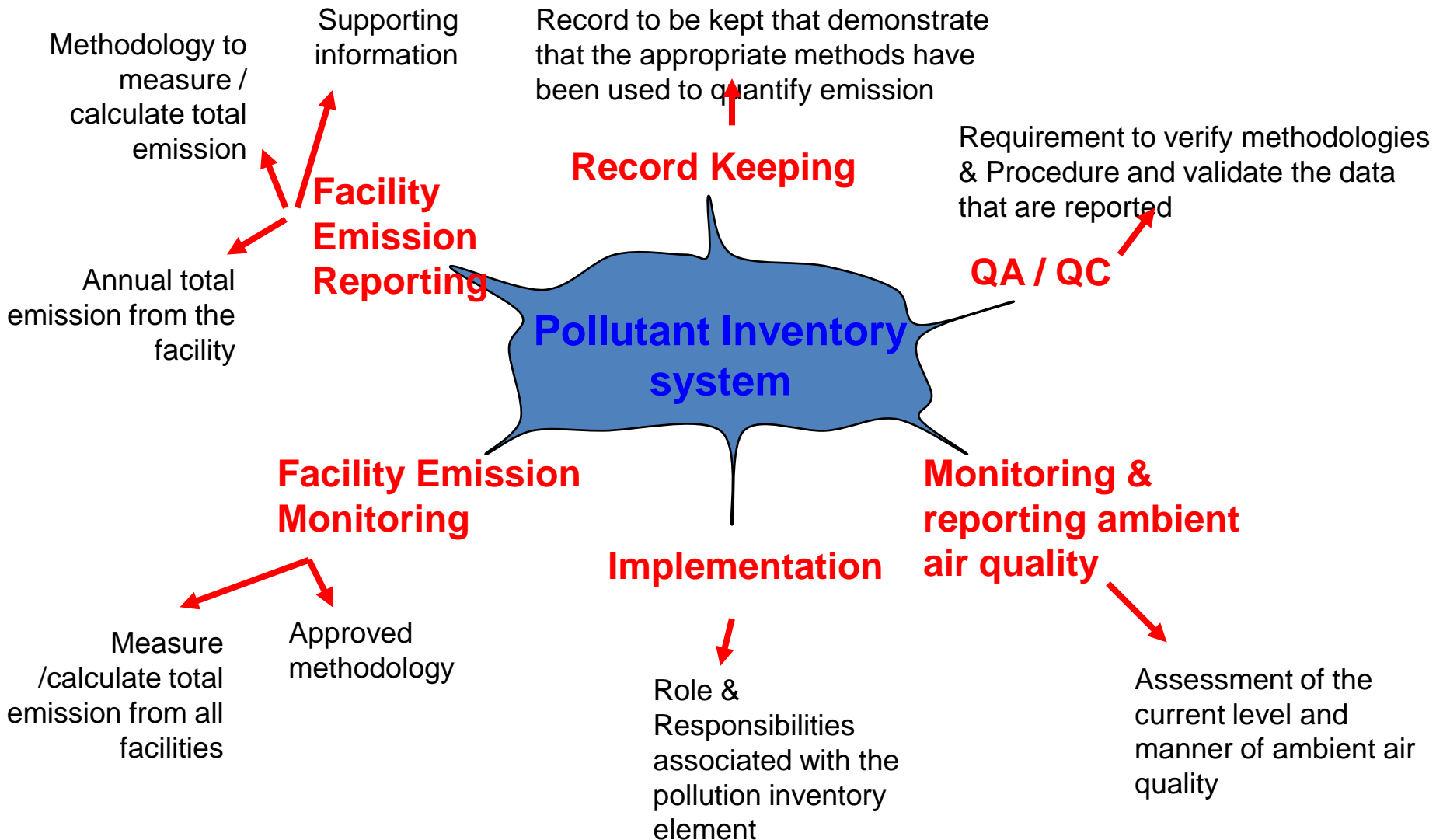
Daily average

% exceed Emission Standard

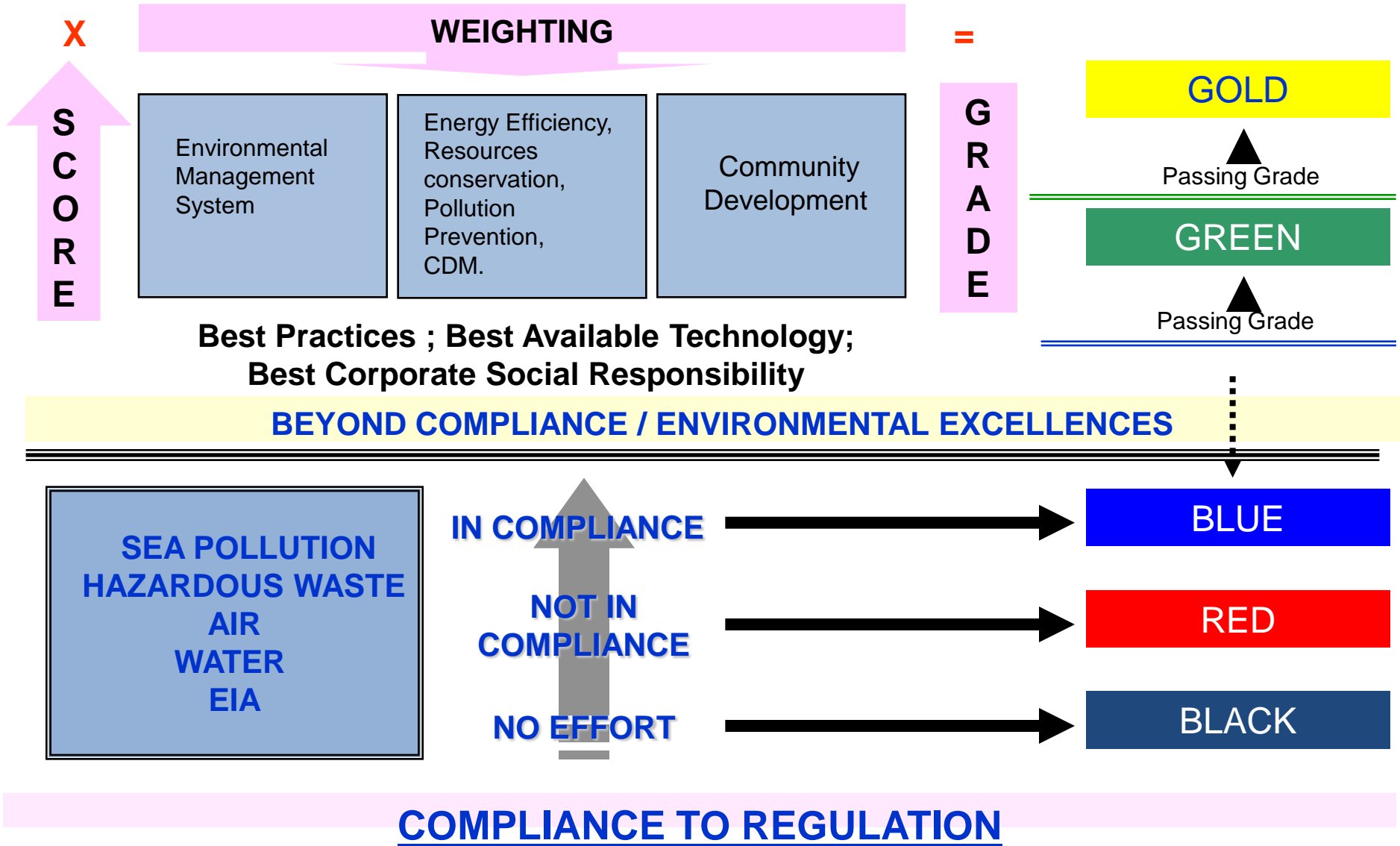
% CEM is not operated

Monitoring Requirement (units required)	Required CEM Monitoring Parameter					
	SO <sub>2</sub>	NO <sub>x</sub>	Flow	Opacity	O <sub>2</sub>	Data Handling
SO <sub>2</sub>	Yes		Yes			Yes
NO <sub>x</sub>		Yes			Yes	Yes
Opacity(%)				Yes		Yes
CO <sub>2</sub>			Yes		Yes	Yes



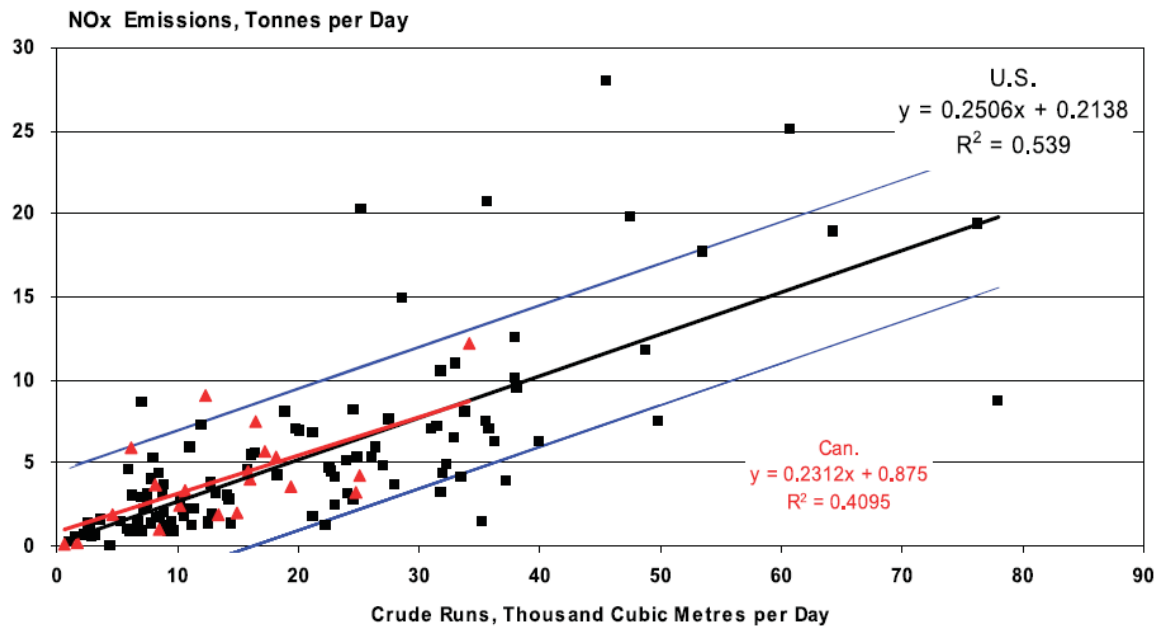


# PROPER EVALUATION CRITERIA



# BENCHMARKING

Energy Efficiency, Resources conservation, Pollution Prevention, CDM.



THANK YOU