



Ministry of Environment and
Forestry (Indonesia)

Policy to Reduce Air Pollution and EST in Indonesia

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Ministry of Environment and Forestry

Country: Indonesia

Ulaanbaatar, October 5th 2018

Country profile



Total area of Indonesia: **1,919,440 km²** (826,440 km² of land, 93,000 km² of rivers and lakes) listed as the world's 14th largest country in terms of land area and the 7th largest in terms of combined sea and land area

The current population of Indonesia is **266,444,047**
17,504 officially listed islands within the territory of the Republic of Indonesia, 34 provinces, 1360 tribes, 726 local languages, United in many different religions, beliefs and cultures

Country profile



- ❖ **Major Sector :** Mining (oil, LNG, aluminum, tin), agriculture (rice, rubber, palm oil), industry (wood products, cement, fertilizer)
- ❖ **Climate / Season's :** Weather in Indonesia can be split into two seasons - wet and dry - with warm tropical temperatures averaging 28°C during the day, throughout the year. In most regions, the dry season spans from May to September, with the rains falling between October and April.

HOW TO MONITORING AIR QUALITY IN INDONESIA



Automatic Air
Quality
Monitoring
System

Monitor Air
Quality
Continuously

Placed in
big cities,
prone to
forest fires

Relatively more
expensive and
require regular
maintenance



Manual
Active
Sampling

Often used
by the local
government



Manual
Passive
(diffusive)
Sampling

Used in 400 districts or
cities across Indonesia
with 4 samples in each
city which represents the
location of transportation,
industry, residential, and
office

Relatively low
cost and very
effective for
Indonesia which
has a very wide
area

Passive Air
monitoring is
carried out in the
dry and rainy
seasons



AUTOMATIC AIR QUALITY MONITORING



PM

CO

O

NO

PM

HC

SO

Metrological:

- Wind Speed & Direction
- Solar Radiation
- Temperature
- Air Pressure
- Humidity
- Rainfall

Sitting the AAQMS:

- Palembang
- Jambi
- Palangkaraya
- Padang
- Pekanbaru
- Banjarmasin
- Pontianak
- Kalimantan Utara
- Jakarta
- Manado
- Makassar
- Aceh
- Mataram
- Batam



Outdoor Display



Indoor Display



SITTING AAQMS STATION DEVELOPMENT



 AQMS 2016-2017 (7 City)

 AQMS 2018 (6 City)

 AQMS Plan 2019 (32 Regency/City)

 Jakarta with 5 fix stations and 1 mobile station since 2011

Previous AAQMS is constructed and operated since 2000 in 10 cities, and financed by load, but the equipment are not operated anymore base on discontinued part and technical expert support

Pollutan Standard Index Website



<http://iku.menlhk.go.id/aqms>

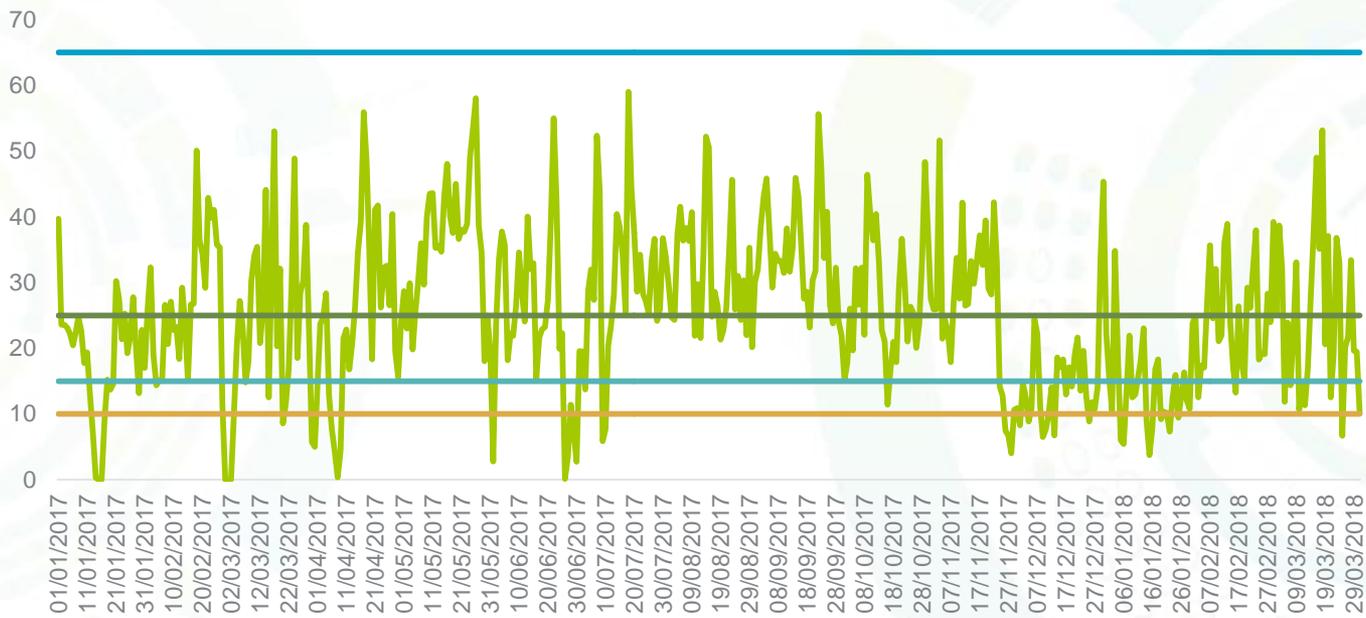


BKMG-DHS KOTA SURABAYA RELASI (PSI) INDIKATOR 9 PM10 LOKASI: Kawasan Kota Baru (KORAB), KOTA SURABAYA BAIK 22-03-2018 15:00:00	KLPH-JABRI KOTA SURABAYA RELASI (PSI) INDIKATOR 10 PM10 LOKASI: Lapangan Jember, SURABAYA BAIK 22-03-2018 15:00:00	BKMG-PLS KOTA SURABAYA RELASI (PSI) INDIKATOR 13 PM10 LOKASI: P. Sempayan BAIK 22-03-2018 15:00:00	KLPH-KALIBANG KOTA SURABAYA RELASI (PSI) INDIKATOR 14 PM10 LOKASI: Kawasan Kota Baru (KORAB), KOTA SURABAYA BAIK 22-03-2018 15:00:00
KLPH-PEKANSARI KOTA SURABAYA RELASI (PSI) INDIKATOR 16 PM10 LOKASI: RT. 04/010-001 BAIK 22-03-2018 15:00:00	KLPH-PADANG KOTA SURABAYA RELASI (PSI) INDIKATOR 17 PM10 LOKASI: P. Jend. Sudarsono, SURABAYA BAIK 22-03-2018 15:00:00	BKMG-EDP KOTA SURABAYA RELASI (PSI) INDIKATOR 21 PM10 LOKASI: Kawasan Kota Baru (KORAB), KOTA SURABAYA BAIK 22-03-2018 15:00:00	KLPH-PORTHAR KOTA SURABAYA RELASI (PSI) INDIKATOR 18 CO LOKASI: RT. 04/010-001 (KORAB) BAIK 22-03-2018 15:00:00
KLPH-PALANGBAYA KOTA SURABAYA RELASI (PSI) INDIKATOR 19 CO LOKASI: Perumahan Jalan Pahlawan SEDANG 22-03-2018 15:00:00	BKMG-DHC KOTA SURABAYA RELASI (PSI) INDIKATOR 19 PM10 LOKASI: Simpang 4, Surabaya (Simpang 4), SURABAYA SEDANG 22-03-2018 15:00:00	KLPH-BANGKALAN KOTA SURABAYA RELASI (PSI) INDIKATOR 18 CO LOKASI: Jalan Cilik PUMPU, RT. 04/010-001 BAIK 22-03-2018 15:00:00	BKMG-WIB KOTA SURABAYA RELASI (PSI) INDIKATOR 17 PM10 LOKASI: J. Tugu Pahlawan BAIK 22-03-2018 15:00:00
BKMG-MSD KOTA SURABAYA RELASI (PSI) INDIKATOR 14 PM10 LOKASI: J. Pahlawan No. 102, Surabaya (Tugu Pahlawan) SEDANG 22-03-2018 15:00:00	DKI-3 KOTA SURABAYA RELASI (PSI) INDIKATOR 10 PM10 LOKASI: Taman Persewaan (KORAB), Kawasan Kota Baru (KORAB) SEDANG 22-03-2018 15:00:00	DKI-5 KOTA SURABAYA RELASI (PSI) INDIKATOR 15 PM10 LOKASI: Taman Persewaan (KORAB), Kawasan Kota Baru (KORAB) SEDANG 22-03-2018 15:00:00	DKI-1 KOTA SURABAYA RELASI (PSI) INDIKATOR 10 CO LOKASI: Duta Banker Pura Pahlawan SEDANG 22-03-2018 15:00:00
DKI-4 KOTA SURABAYA RELASI (PSI) INDIKATOR 17 CO LOKASI: J. Raya Tugu Pahlawan (KORAB), Kawasan Kota Baru (KORAB) SEDANG 22-03-2018 15:00:00	DKI-3 KOTA SURABAYA RELASI (PSI) INDIKATOR 17 CO LOKASI: J. Raya Tugu Pahlawan (KORAB), Kawasan Kota Baru (KORAB) SEDANG 22-03-2018 15:00:00		

Publishing 24 hours PSI

www.iku.menlhk.go.id

CONCENTRATION OF PM2,5 IN CENTRAL JAKARTA JANUARY 2017 - MARCH 2018



Concentration of PM2.5

ITRA

Indonesia Air Quality Standard (Hour)

Indonesia Air Quality Standard (Year)

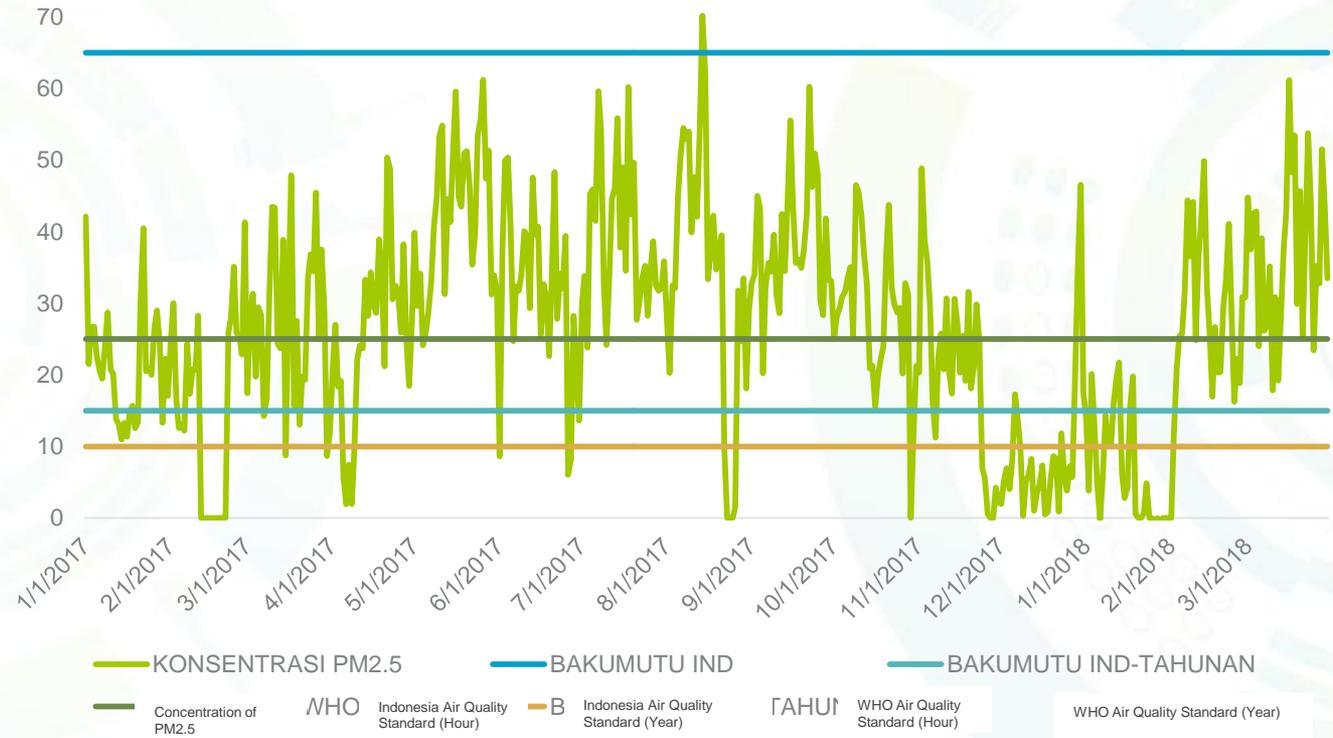
WHO Air Quality Standard (Hour)

UT

WHO Air Quality Standard (Year)

SOURCE: AIRNOW.GOV

AVERAGE PM2,5 : 26.00

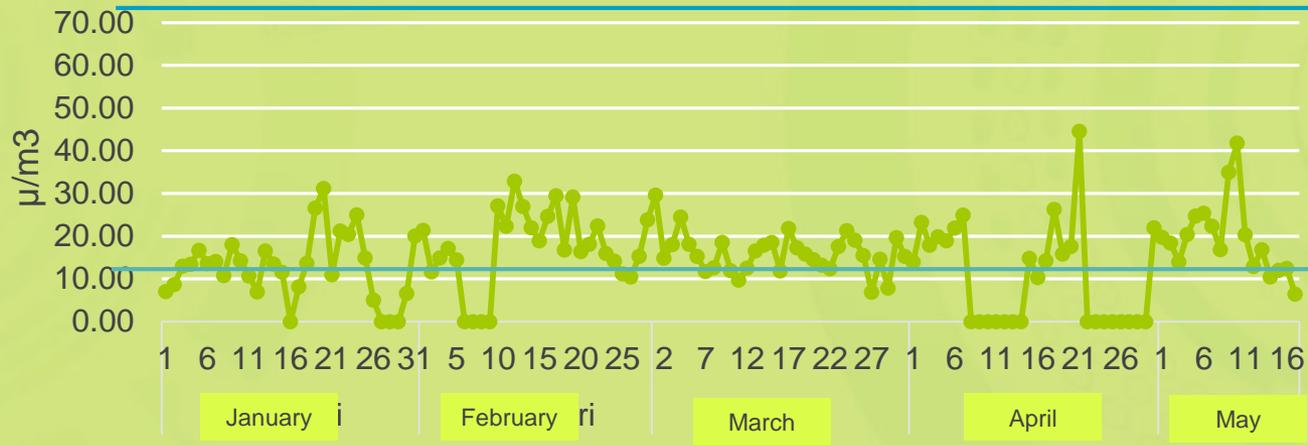


SUMBER DATA : AIRNOW.GOV

AVERAGE PM2.5 : 27.00



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MAY 2018 JAMBI STATION



Indonesia Air Quality Standard
(Year)

Indonesia Air Quality Standard
(Hour)

SOURCE : DIT PPU - KLHK

AVERAGE PM_{2,5} : 14.62



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MARCH 2018 PALEMBANG (SOUTH SUMATERA) STATION



Indonesia Air Quality Standard (Year)

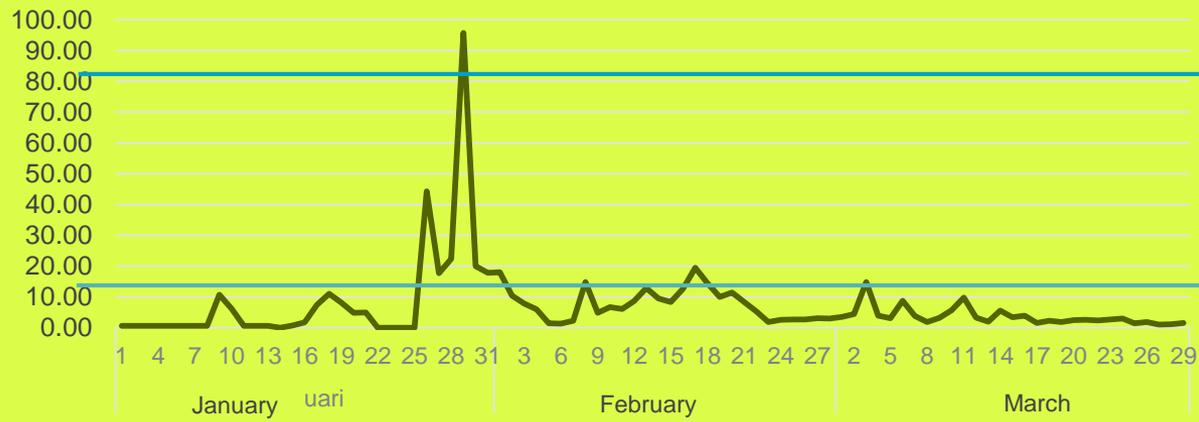
Indonesia Air Quality Standard (Hour)

SOURCE : DIT PPU - KLHK

Average PM_{2,5} : 9.45



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MARCH 2018 PALANGKARAYA (CENTRAL KALIMANTAN) STATION



Indonesia Air Quality Standard
(Year)

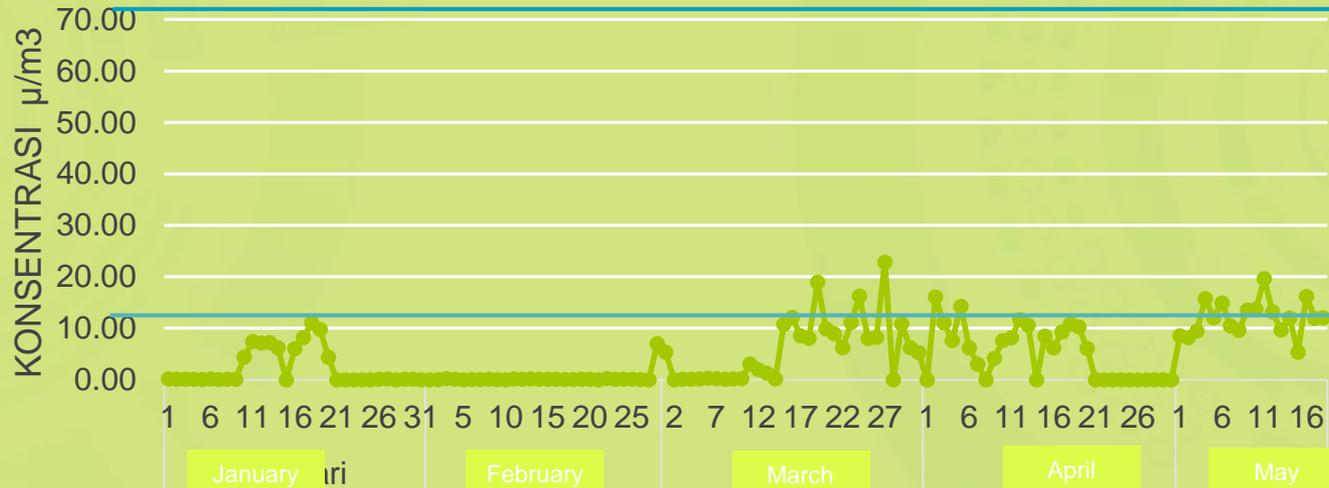
Indonesia Air Quality Standard
(Hour)

SOURCE : DIT PPU - KLHK

Average PM_{2,5} : 4.39



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MAY 2018 BANJARMASIN (SOUTH KALIMANTAN) STATION



Indonesia Air Quality Standard (Year)

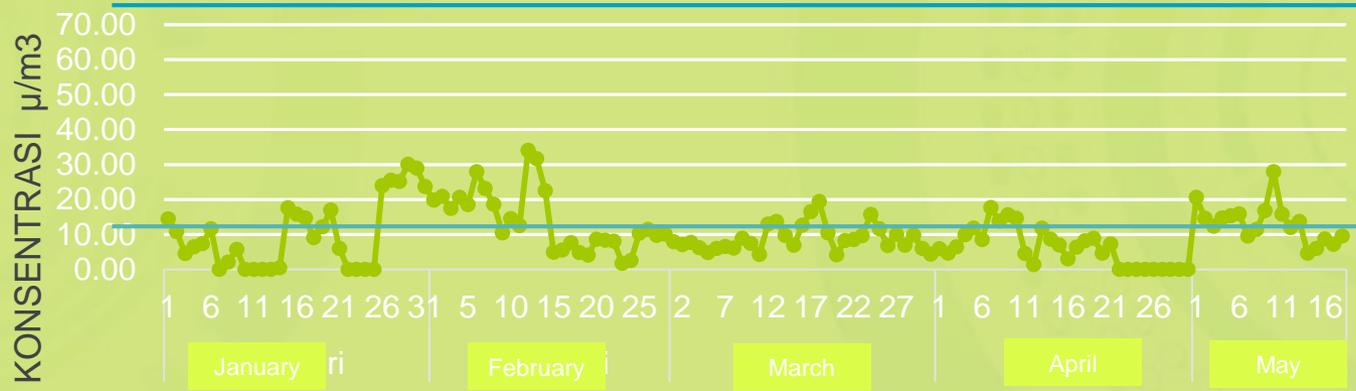
Indonesia Air Quality Standard (Hour)

SOURCE : DIT PPU - KLHK

Average PM_{2,5} : 4.60



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MAY 2018 PADANG (WEST SUMATERA) STATION



Indonesia Air Quality Standard
(Year)

Indonesia Air Quality Standard
(Hour)

SOURCE : DIT PPU - KLHK

Average PM_{2,5} : 10,12



GRAPHIC OF PM2,5 CONCENTRATION JANUARY - MAY 2018 PEKANBARU STATION



Indonesia Air Quality Standard (Year)

Indonesia Air Quality Standard (Hour)

SOURCE : DIT PPU - KLHK

Rata-Rata PM2.5 : 20,11



GRAPHIC OF PM_{2.5} CONCENTRATION JANUARY - MAY 2018 PONTIANAK (WEST KALIMANTAN) STATION

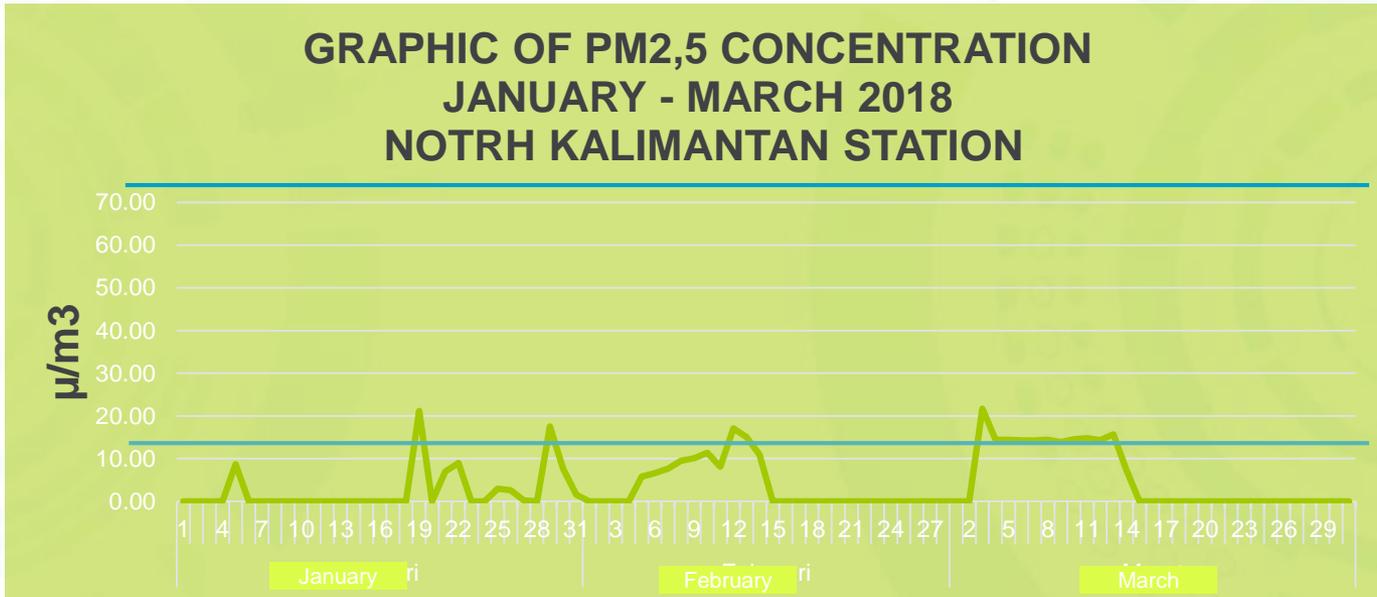


SUMBER : DIT PPU - KLHK

Rata-Rata PM_{2.5} : 2.41



GRAPHIC OF PM_{2,5} CONCENTRATION JANUARY - MARCH 2018 NOTRH KALIMANTAN STATION



Indonesia Air Quality Standard (Year)

Indonesia Air Quality Standard (Hour)

SOURCE : DIT PPU - KLHK

Average PM_{2,5} : 3.94



Policy, Regulation and Program on Air Pollution Reduction



Regulations related to Air Pollution Control





POLICY, REGULATION AND PROGRAM

Emission Standard

EURO 4 : Vehicle Emission Standard

Specific Emission Quality Standard, such as:

- Cement (State Minister of Environment Decree No. 19/2017)
- Power Plant (State Minister of Environment Decree No. 21/2008)
- Oil and Gas (State Minister of Environment Decree No. 13/2009)
- Ceramic (State Minister of Environment Decree No. 17/2008)
- Fertilizer (State Minister of Environment Decree No. 133/2004)



Effort to Reduce Air Pollution



Mitigation Action for Energy

Develop on
grid
renewable
Energy

Develop
POME
Biogas

Fossil Fuel
Substitution



Develop off
grid
renewable
Energy

Energy
Efficiency

Mitigation Action for Transportation

Develop
Intelligent
Transport
/ System/
Area
Traffic
Control
System

Replace
The
Armada of
Public
Transportation

Smart
Driving



Transit
System
Reform -
BRT
System,
MRT,
LRT

Car
Free
Day

Parking
Management

Some key issues on developing EST strategy in cities in Indonesia.



Issues on Health and Environment Affected by Transportation

- High contamination level from emission and noise
- Decreasing environment quality from changes in land use planning
- Increasing mortality rate due to respiratory diseases and cardiovascular diseases
- Lack of supporting data on health for quantifying the impacts

Issues on Maintenance and Monitoring Road Side Air Quality

- Lack of/no roadside air quality monitoring station
- Insufficient condition of monitoring station in most cities in Indonesia
- Minimum monitoring frequency
- Uneven distribution of monitoring spots and not in ratio with land space
- Reliable time series data are difficult to collect because of limited frequency and locations of monitoring spots which are altered annually
- Monitoring method that has not met the procedure
- Lack of continuous monitoring
- Non standardized monitoring report system

Issues on Controlling and Standardizing Transport Emission



- Transport emission control has not been fully executed because the regulation is still under discussion.
- The rules associated with vehicle emissions are not evenly distributed, although they have started in several cities (DKI Jakarta, Surabaya)

Issues on Transport Inspection and Maintenance

- Insufficient number of standardized workshop for transport inspection and maintenance.
- Low awareness of transport owners to periodically check their vehicle.

III. Strategies to Improve transport practices and technologies

- **Set progressive, appropriate, and affordable standards. The MoEF is also addressing emissions from new and in-use vehicles by produce several Ministry Regulation :**
 - ✓ **National Law No. 32/2009 on Environmental Protection and Management**
 - ✓ **National Law No. 22/2009 on Traffic of Road Transport**
 - ✓ **Government Regulation No. 41/1999 on Air Pollution Control**
 - ✓ **Ministerial Regulation No. 05/2006 of Emission Standard for In-Use Vehicles**
 - ✓ **Ministerial Regulation No. 10/2012 of Emission Standard for Motorcycle of L3 Category.**
 - ✓ **Ministerial Regulation No. P.20/2017 of Emission Standard of New Type Vehicles of M, N and O categories**

○ **Inspection and maintenance (I/M)**

- ✓ **The Ministry of Environment and Forestry is preparing a revision of Government Regulation No. 41/1999 on Air Pollution Control. In the draft of this regulation will be put obligation of each vehicle to pass emissions test prior to vehicle registration renewal. It is to encourage people to be more attention to vehicle maintenance.**

○ **Adopt Intelligent Transportation Systems (ITS)**

- ✓ **The development of ERP (Electronic Road Pricing) in Jakarta.**

IV. Cross-cutting strategies

- **Adopt a zero-fatality policy**
 - ✓ **Establish zero-fatality accident road map**
- **Promote monitoring of the health impacts from transport emissions and noise**
 - ✓ **MoEF has executed Blue Sky Program since 1992. This program aims to control air pollution, including the one from mobile source. The program is used to reward the performance of city/regency government in controlling air pollution from transport sector, by developing an assessment system which delivers Blue Sky Award**
- **Establish air quality and noise standards**
 - ✓ **MoEF has issued a ministerial regulation on noise, which is rule number 14/2003, and now being revised.**

Implement sustainable low-carbon transport initiatives to mitigate the causes of global climate change and to fortify national energy security

- **Encourage Automotive Producers to develop Low Cost and Green Car vehicles.**
- **Issued Ministry Regulation Number P.20/MenLHK/Setjen/Kum.1/3/2017 about Emission Standard for New Type Vehicles in M, N and O Categories. This regulation is more strict almost 50% than the old version.**
- **Implementation of Eco Driving Program in Indonesia.**
- **Supporting for developing of Electrical Vehicles**
- **Supporting for implementation of biodiesel as substitution for common solar.**



BRT in Jakarta and oth



Busway - BRT Lane



LRT under construction:
Jakarta and Palembang



MRT under construction In Jakarta





Electric Train
to link the Airport:
Jakarta
Palembang
Medan
Padang



NMT
Non Motorized Trasport:
Walking and Cycling



Clean and Green City



Appropriate Side-walk



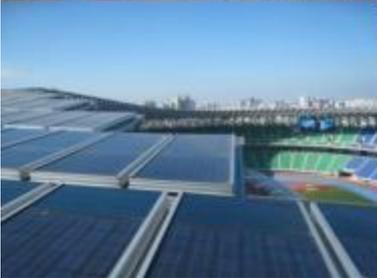
Green Zone and
Public Area



Green and Clean
Kampung



Solar panel

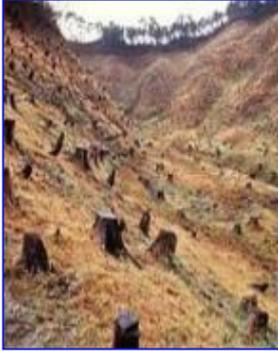


Roof-top Solar Panel at the GBK Jakarta Stadium
"Welcome to Asian Games 2018"



djebtkc

Wind power



THANK YOU

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