Source of PM and Health Impacts in Bangkok

Ms Termsiri Chongpoonphol,
Director of Air Quality and Noise Management Division
Department of Environment
Bangkok Metropolitan Administration (BMA)
Scopes of Presentation

1. Air Quality Situation in Bangkok
2. Source and Health Impact of PM
3. PM2.5 Challenges
Introduction to Bangkok City

- **Total Areas**: 1,568.737 km²
- **Average Ground Level**: +0.50 to +1.50 m MSL
- **Temperature**: 17.6 - 39.3°C
- **30-year Average Annual Rainfall**: 1,648 mm/year
- **Populations**
  - Registered: 5.69 million persons
  - Non Registered: 2.08 million persons
- **Density Populations**: 3,626 persons/ km²
Particulate Matter (PM10)

which is still a problem along the main roads
Particulate Matter (PM2.5)

which is still a problem along the main roads
Trend of PM 2.5 during the year

Air Pollution Episode

Standard

ค่ามาตรฐาน 50 มคก./ลบ.ม.
2. Source and Health Impact of PM

Air Pollution

Mobile Source

Registered Vehicles: 9.78 million

- Diesel: 2.49 million
- Petrol: 6.33 million
- LPG: 0.58 million
- CNG: 0.24 million
- Other Fuels: 0.14 million

Stationary Source

Permitted Building Construction: 7 million m²

Open Burning > 3,000 times/yr
Grilled food > 1,000 vendors

PM2.5, PM10, CO, HC, NOx

TSP, PM10, VOC, SO₂
2. Source and Health Impact of PM

- **Vehicles**

  Number of Vehicle Registered in Bangkok as of December 31, 2017

  9,778,681 Vehicles
2. Source and Health Impact of PM

- Open Burning

Biomass Open-burning

- Solid Waste
- Agricultural Residues
- Forest Fires
3. PM2.5 Challenges

- Health Impact from PM2.5

- The rising in number of the patients with respiratory diseases
  - In 2016, 227,841 cases visiting BMA Health Service Center with respiratory diseases

Surveillance diseases: respiratory tract disease, cardiovascular disease, conjunctivitis and dermatitis
3. PM2.5 Challenges

PM2.5 : PM as a Disaster Draft Plan for PM2.5 Management

- **Before** (Nov.)
  - Integrate data to forecast and inform the public

- **During** (Dec-Mar.)
  - Strictly Reduce Emission at Source
  - Reduce Pollutants in Ambient
  - Monitoring and Informing PM2.5 Situation
  - Monitoring and Reducing Health Impact

- **After** (Apr.)
  - Summarize PM2.5 situation and actions
  - Lessoned learnt to revise measures for preparation in next year
3. PM2.5 Challenges

PM2.5 : PM as a Disaster

Draft Plan for PM2.5 Management

- Reduce Emission at Source
- Reduce Pollutants in Ambient
- Monitoring and Reducing Health Impact
- R&D on How to Control at Source

Long-Term Measures
Thank you for your kind attention

For more information
www.bangkok.go.th/environment