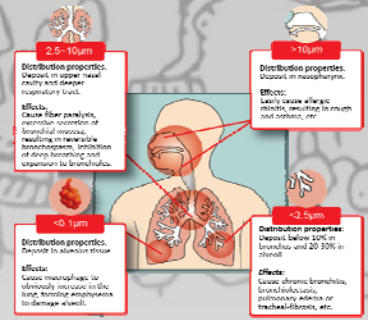


# Clear and Bright Air in Tainan Guard Citizens' Health



## Background

- The occurrence of poor air quality in Tainan City is easy to mainly concentrate on every October to next March. Being affected by northeast monsoon and Central Mountains topography during this period, atmospheric diffusion easily forms a bad environment, causing that various pollutants will be transported with the northeast monsoon across the regions, including local pollution sources to influence on air quality.
- There're lots of pollutants in the air, in which fine particulate matters (PM<sub>2.5</sub>) are well known to the public as small particle size is easy to enter the human body along with the breath. Medical field has confirmed the influence of PM<sub>2.5</sub> on health, whether long or short-term exposure may increase the risk of respiratory illness and death.
- According to scalable models and simulations from Environmental Protection Agency (EPA), Executive Yuan, it shows PM<sub>2.5</sub> percentage contribution in Tainan City, including offshore impact accounts for 36%, cities/counties outside Tainan impact 26% and Tainan City's own impact 39%; to improve the city's air pollution, the city government presented "Particulate Matters Reduction and Control Plan for Clear & Bright Sky in Tainan City" on June, 2014 to integrate 18 related departments and offices into the management from the sources.



The influence of particulate matters on human body

## Strategic Planning and Division of Labor

- According to Taiwan emissions database (TEDS 9.0) released by EPA, sources and quantity of PM<sub>2.5</sub> emissions in the City is estimated that major sources of pollution in order are factories accounting for 18.5%, diesel vehicles 16.9%, cars and motorcycles 12.1%, open ground 10.9%, the construction site 9.2%, the road dust 9.1% and agricultural operation 8.4%, as well as other sources, e.g. open burning and cooking oil fume about 14.9%.
- Based on cross-department cooperation, departments and offices integrate their energy working together to control air pollution. "Air Pollution Reduction Task Force" is established, served as convener by Secretary General of Tainan City Government, jointly handled by 18 departments and offices, and working results in each department and office are controlled by Research, Development and Evaluation Commission.



PM<sub>2.5</sub> Pollution sources and control strategies in Tainan City

## Innovations

### Air quality and protection information from multiple channels

- Air quality real time information on official homepage;
- The installation of poor air quality forecasting and response system by (Cultural Affairs Bureau);
- The installation of air quality information push demonstration station at schools, elderly nursing centers, hospitals and parks;
- Combine marquees and electronic blackboards in about 900 institutions and schools under 13 departments and offices of city government with marquees of 415 garbage trucks to play air quality and public protection information.



Tainan City Government official homepage



Environmental Protection Bureau of Tainan City Government official homepage



Environmental Protection Bureau of Tainan City Government air quality flag



schools, elderly nursing centers, hospitals and parks

## Results Presentation

- Since the Plan for Clear & Bright Sky in Tainan City was promoted, improvement rate of PM<sub>2.5</sub> concentration has reached 31% from 2013 to 2017, in which improvement rate in 2017 was up to 5.3% higher than that in 2016. Average PM<sub>10</sub> concentration has been lower than air quality standard since 2015. EPA is scheduled to announce this year (2018) that Tainan City is Class 2 control area in consistent with air quality standard.
- Lots of effects and data prove that the Plan for Clear & Bright Sky in Tainan City succeeds in the improvement of issues on particulate matters, which a significant milestone for Tainan City.

