環境保護署
Environmental Protection Department

空氣質素指標檢討

AIR QUALITY OBJECTIVES REVIEW

公眾參與 PUBLIC ENGAGEMENT

第一場論壇
Session 1

28.9.2017

環境保護署
Environmental Protection Department

程序 Program

2:15pm – 2:20pm	開幕辭 Opening Remarks
2:20pm – 2:30pm	空氣質素指標的背景 Introduction to the Air Quality Objectives
2:30pm – 2:45pm	簡介空氣質素指標的檢討 Briefing on the Review on Air Quality Objectives
2:45pm – 4:30pm	回應 / 意見發表時間 Feedback / Q&A Session
4:30pm	論壇結束 End of Forum

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
公眾參與 PUBLIC ENGAGEMENT

環境保護署
Environmental Protection Department

空氣質素指標檢討

AIR QUALITY OBJECTIVES REVIEW

公眾參與 PUBLIC ENGAGEMENT

第二場論壇
Session 2

30.9.2017

環境保護署
Environmental Protection Department

程序 Program

10:00am – 10:05am	開幕辭 Opening Remarks
10:05am – 10:15am	空氣質素指標的背景 Introduction to the Air Quality Objectives 簡介空氣質素指標的檢討
10:15am – 10:30am	Briefing on the Review on Air Quality Objectives
10:30am – 12:30pm	回應 / 意見發表時間 Feedback / Q&A Session
12:30pm	論壇結束 End of Forum

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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空氣質素指標檢討 - 背景
THE AQO REVIEW - BACKGROUND

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空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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背景 Background

1987

香港訂立第一套空氣質素指標

The first set of AQO was established

2006

世界衞生組織(世衞)發放《空氣質素指引》(《指引》)的更新

WHO released updated Air Quality Guidelines (AQG)

2007 - 2009

環保署檢討香港的空氣質素指標及諮詢公眾

EPD commissioned the AQO review and consulted the public

2012 - 2013

政府於2012年1月宣佈採納新的空氣質素指標，並隨後進行修訂《空氣污染管制修例》

The Government announced the adoption of new AQO in January 2012, and amended the Air Pollution Control Ordinance (APCO)

2014

新的空氣質素指標*於1月1日生效

The new AQO* took effect on 1 January

*必須每五年最少檢討一次
Review at least once every five years

2020

目標：大致符合新的空氣質素指標

Target: broadly meet the new AQO

空氣質素指標 vs 世衛的《空氣質素指引》及中期目標
AQO vs WHO Air Quality Guidelines (AQG) and Interim Targets (IT)

綠色方格為現行空氣質素指標
Current AQOs in Green

		世衛中期目標 (微克/立方米) WHO Interim Targets (ug/m^3)			世衛《指引》(微克/立方米) WHO AQG (ug/m^3)
		IT-1	IT-2	IT-3	
二氧化硫 SO_2	10分鐘 min	--			**500**
	24小時 hr	**125**	50		20
可吸入懸浮粒子 RSP(PM_{10})	24小時 hr	150	**100**	75	50
	1年 Annual	70	**50**	30	20
微細懸浮粒子 FSP ($PM_{2.5}$)	24小時 hr	**75**	50	37.5	25
	1年 Annual	**35**	25	15	10
二氧化氮 NO_2	1小時 hr	--			**200**
	1年 Annual	--			**40**
臭氧 O_3	8小時 hr	**160**			100
一氧化碳 CO	1小時 hr	--			**30,000**
	8小時 hr	--			**10,000**
鉛 Pb	1年 Annual	--			**0.5**

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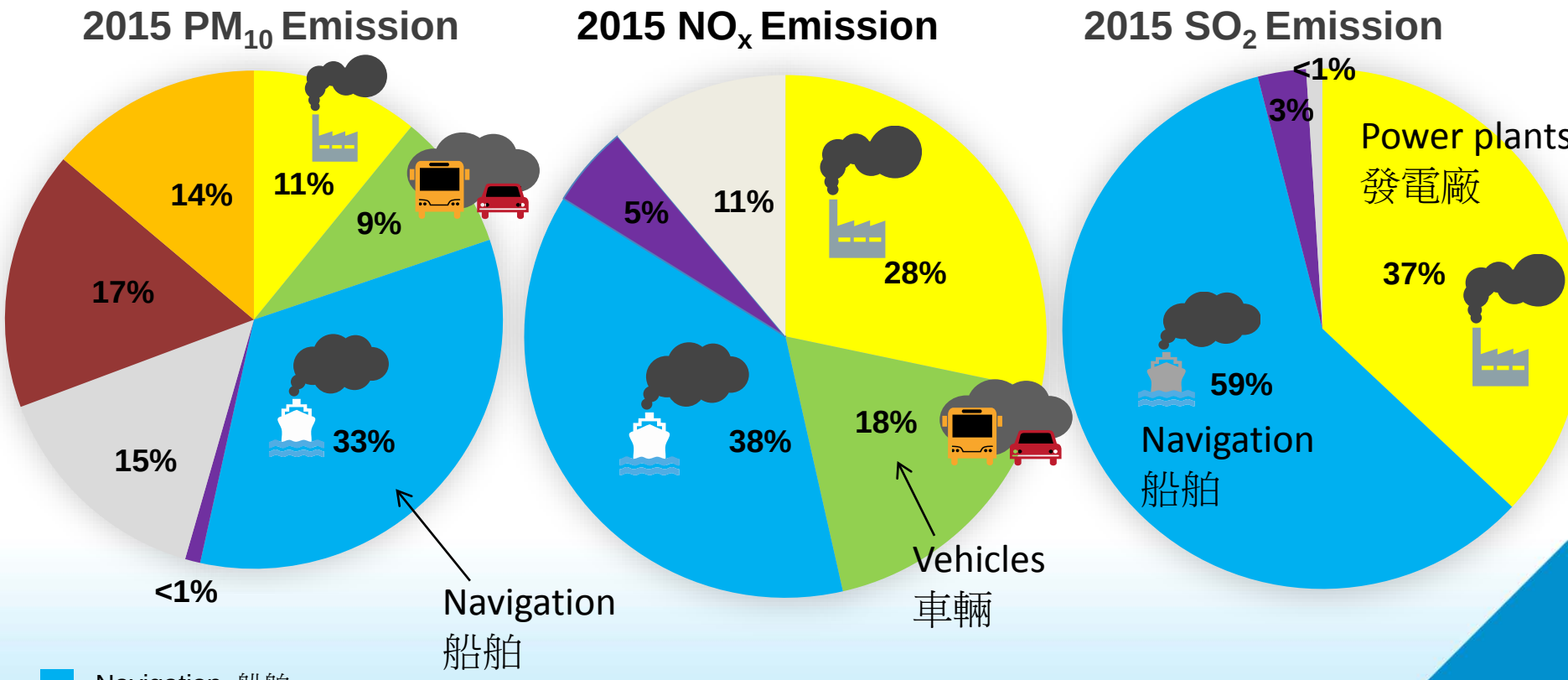
本地主要空氣污染源
MAJOR LOCAL AIR POLLUTION SOURCES



- Navigation 船舶
- Road transport 車輛
- Power plants 發電廠
- Other fuel combustion 其他燃燒
- Non-combustion 非燃燒
- Biomass Burning 生物質燃燒
- Civil Aviation 飛機

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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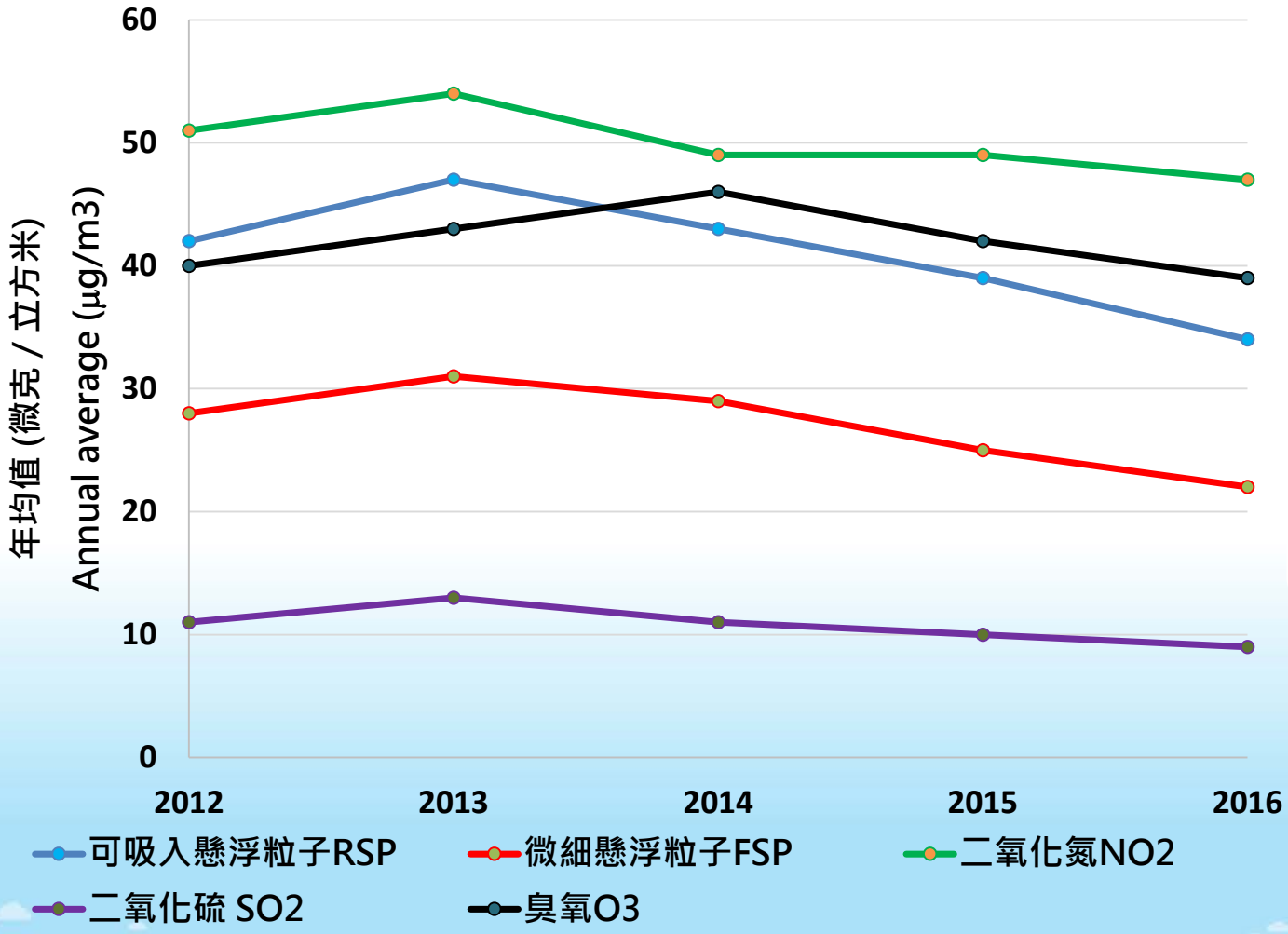
一般空氣質素 Ambient Air Quality (2012-2016)



二氧化氮 NO_2

- ↓ 8%

臭氧 O_3

- ↓ 3%

可吸入懸浮粒子 RSP

- ↓19%

微細懸浮粒子 FSP

- ↓21%

二氧化硫 SO_2

- ↓18%

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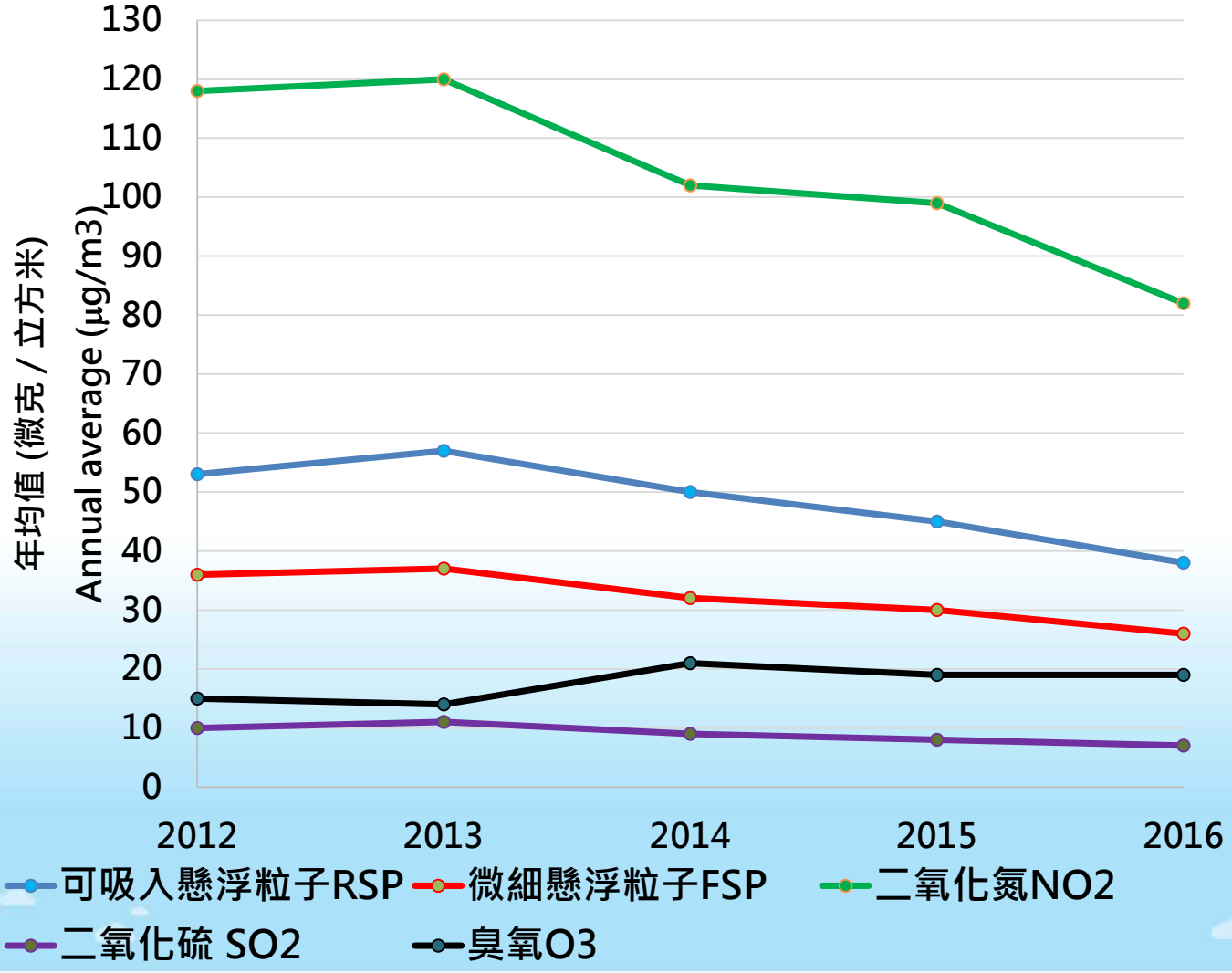
路邊空氣質素 Roadside Air Quality (2012-2016)



二氧化氮 NO_2

- ↓ 31%

可吸入懸浮粒子 RSP

- ↓28%

微細懸浮粒子 FSP

- ↓ 28%

臭氧 O_3

- ↑27%

二氧化硫 SO_2

- ↓30%

AIR QUALITY OBJECTIVES REVIEW
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檢討空氣質素指標
The AQO Review

- 《空氣污染管制條例》訂明
  Requirement in the Air Pollution Control Ordinance (APCO)

- 環境局局長每五年最少檢討指標一次
  Secretary for the Environment to review the AQO at least once every five year

- 向環境諮詢委員會(環諮會)呈交檢討報告
  Submit review report to the Advisory Council on the Environment (ACE)

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
公眾參與 PUBLIC ENGAGEMENT

環境保護署
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檢討的指導原則
Guiding Principles of the Review

(1) 訂定空氣質素指標須**以保障公眾健康為目的**；

the AQOs should be set with a view to **protecting public health**;

(2) 更新空氣質素指標須**以世衛所訂《指引》及中期目標為基礎**；以及

the AQOs should be updated **by benchmarking against the WHO AQGs and ITs**; and

(3) 更新空氣質素指標須採取**循序漸進方式**，並以達致世衛《指引》所訂標準為長遠目標。我們會按照世衛建議，在致力達致目標的過程中參照國際做法，考量最新的技術發展和本地情況。

a **progressive approach** be adopted in updating the AQOs with a view to achieving the WHO AQGs as a long-term goal. The pursuit of such goal will be considered with reference to the international practices, the latest technological developments and local circumstances, as recommended by the WHO.

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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專家和持份者的參與
Engagement of Experts and Stakeholders

能源與發電專家小組
Energy & Power Generation Sub-group

陸路運輸專家小組
Road Transportation Sub-group

空氣質素指標檢討
工作小組
AQO Review Working Group

空氣科學與
健康專家小組
Air Science & Health Sub-group

減排估算及空氣質素模型
專責小組
Emission Reduction Estimation, Air Quality Modelling Task Force

健康和經濟影響評估
專責小組
Health and Economic Impact Task Force

海上運輸專家小組
Marine Transportation Sub-group

空氣質素指標檢討
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專家和持份者的參與
Engagement of Experts and Stakeholders

學者 Academics

專業團體 Professional Bodies

業界 Trade

商會 Chambers of commerce

環保團體 Green groups

政府決策局及部門代表 Government

能源與發電、陸路和海上運輸專家小組
Energy & Power Generation, Road and Marine Transportation Sub-groups

空氣科學與健康專家小組
Air Science & Health Sub-group

政府決策局及部門代表 Government

健康專家 Health experts

環保團體 Green groups

商會 Chambers of commerce

城市規劃專家 Urban planning expert

空氣科學家 Air Scientists

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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環境保護署
Environmental Protection Department

工作展望 Actions Ahead

- **專家小組詳細討論改善空氣質素的可能新措施**
  Sub-groups deliberated a list of possible new air quality improvement measures
- **公眾參與並分享對改善空氣質素的可能新措施的意見**
  Engage public to share their views on possible new measures to improve the air quality of Hong Kong

- **檢視及評估新空氣質素改善措施及排放估算**
  Review & Assess new air quality improvement measures and the emission reduction estimation, etc.

Q4 2017

- **草擬檢討報告**
  Draft review report

Q1 2018

- **環境局局長審議檢討報告**
  Secretary for the Environment to consider the review report

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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工作展望 Actions Ahead

Mid 2018

- **向環境諮詢委員會提交檢討報告及諮詢立法會環境事務委員會**
  Submit a review report to ACE and consult LegCo EA Panel

Q3 2018

- **就檢討建議展開公眾諮詢**
  Public consultation on the review recommendations.

2019

- **確定檢討的最終建議**
  Finalize the review recommendations

2019

- **修訂《空氣污染管制條例》以實施新的空氣質素指標**
  Amendment on the Air Pollution Control Ordinance (APCO) to effect the new AQOs

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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簡介空氣質素指標的檢討
Briefing on the Review on Air Quality Objectives

艾奕康有限公司
AECOM Asia Company Limited

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
公眾參與 PUBLIC ENGAGEMENT

環境保護署
Environmental Protection Department

主要檢討工作
Key Tasks of the Review

- 參考世界衞生組織的建議和其他環保先進國家的做法，主要工作包括：

  In line with World Health Organization's recommendations and the practices of other environmentally advanced countries, key tasks of the review include:

檢討 Review

- 國際空氣質素標準的最新發展
  Latest development of overseas' Air quality objectives / standard

檢視 Assess

- 香港及珠三角地區空氣質素及現行空氣質素改善措施的成效
  Air quality in HK and PRD region and the effectiveness of the implemented measures

探索 Explore

- 改善空氣質素的可能新措施
  Possible air quality improvement measures

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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主要檢討工作
Key Tasks of the Review

模擬 Model

- 預期2025年空氣質素的改善情況
  Potential air quality improvement for the year 2025

分析 Analyse

- 預期實施改善空氣質素新措施對健康和經濟的影響
  Potential health and economic impact of implementing the air quality improvement measures

評估 Identify

- 進一步收緊空氣質素指標的空間
  Possible scope to further tighten the AQOs

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
公眾參與 PUBLIC ENGAGEMENT

檢討結果 Review Findings

- 綜合評估分析，預期在2017年年底提交檢討結果給環境局局長考慮

  The review findings will be assimilated and submitted to the Secretary for the Environment by end of 2017 for consideration

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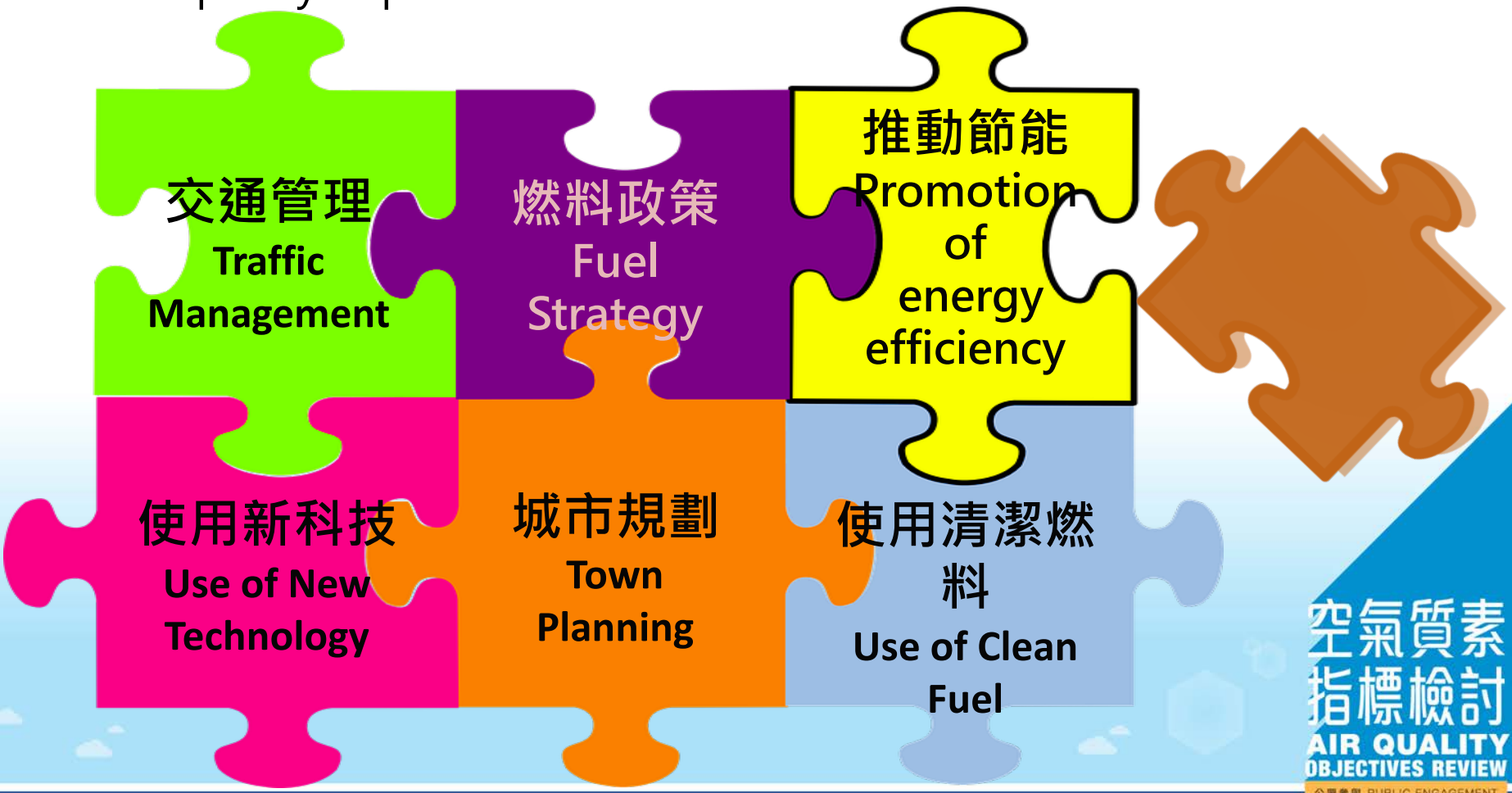
改善空氣質素的可能新措施
Possible New Air Quality Improvement Measures

- 專家小組討論了一系列改善空氣質素的可能新措施

  The Sub-groups have deliberated on a number of possible new air quality improvement measures



空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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改善空氣質素的可能新措施
Possible New Air Quality Improvement Measures

- 審議實施可能新措施的可行性時，考慮了多方面的因素，包括：

  A wide range of factors have been considered in assessing the practicability of implementing the possible new measures, including:

  - 新技術的成熟程度及使用趨勢

    technical maturity of new technology and the trend of usage
  - 國際間監管條例的發展

    international regulatory development
  - 成本效益

    cost effectiveness
  - 業界反應

    trade reaction

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改善空氣質素的可能新措施
Possible New Air Quality Improvement Measures

實施改善空氣質素的可能新措施的可行性類別
Categories of Practicability for Implementing Possible New Air Quality Improvement Measures

短期措施 **Short term**	有關措施可能在2025年或以前可見成效 Likely to produce results by 2025 or earlier
中期措施 **Medium term**	有關措施會於下一次檢討期間再作考慮 Maybe ready for consideration in the next AOQ Review period
長期措施 **Long term**	有關措施需要更詳細規劃或進一步研究以確定在下一個檢討期以後的實施可行性 Require detailed planning or further study to ascertain the practicability for implementation beyond the next Review period
其他 **Others**	有關措施非切實可行、不具改善空氣質素的效益或合乎是次檢討範圍 Considered as not practicable, short of air quality benefits or not suitable to be considered under the current scope of the review

陸上運輸 Road Transportation

- 隧道的收費政策及模式
  Tunnel toll policy and toll collection method
- 車輛尾氣排放系統維修保養
  Maintenance and repair of vehicle exhaust system
- 推動「行人友善」及「單車友善」環境
  Fostering a "pedestrian-friendly" and bicycle-friendly" environment
- 推動低排放的交通模式
  Promotion of low-emission transport mode
- 運用智能運輸系統
  Utilisation of intelligent transport systems
- 土地及運輸基建規劃
  Land use and transport infrastructure planning
- 管理路面空間
  Managing road space
- 其他建議
  Land use and transport infrastructure planning

可能短期措施的例子
An Example of Possible Short-term Measures

車輛尾氣排放系統維修保養	Maintenance and repair of vehicle exhaust system
• 建立車輛尾氣排放系統的維修數據平台	• Establish a maintenance information database of vehicle tailpipe emission system

可能中期措施的例子
An Example of Possible Medium-term Measures

土地及運輸基建規劃	Land use and transport infrastructure planning
• 全面檢討陸路運輸建設的發展和道路網絡(如興建新的隧道和道路)，以配合人口的增長，改善塞車問題	• Conduct comprehensive review on the development of road transportation infrastructure and networks (such as construction of new tunnels and roads) to cope with population growth and to tackle road traffic congestion

可能長期措施的例子
An Example of Possible Long-term Measures

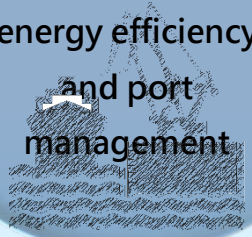
推動低排放的交通模式	Promotion of low-emission transport mode
• 推出單一路線電動車試驗計劃，將指定路線的現有車隊轉換為電動車	• Electric vehicles pilot schemes - switching the existing vehicle fleet of selected routes to electric vehicles

海上運輸 Marine Transportation

使用清潔燃料
Use of Clean Fuel

技術性措施
Technical Measures

節省燃料、能源效益及港口管理
Fuel economy, energy efficiency and port management



其他建議
Other Suggestions

可能短期措施的例子
An Example of Possible Short-term Measures

使用清潔燃料	Use of clean fuel
• 遠洋船停泊時須使用含硫量上限不超逾0.1%的船用柴油	• Ocean-going vessels at berth to use marine diesel with lower fuel sulphur content, e.g. not exceeding 0.1%

可能中期措施的例子
An Example of Possible Medium-term Measures

技術性措施	Technical measures
• 為本地船隻舷外引擎訂立排放標準	• Impose emission standards on outboard engines of local vessels

可能長期措施的例子
An Example of Possible Long-term Measures

使用清潔燃料	Use of clean fuel
• 研究使用混能、柴油電力和電動船	• Explore the use of hybrid, diesel electric and electric vessels

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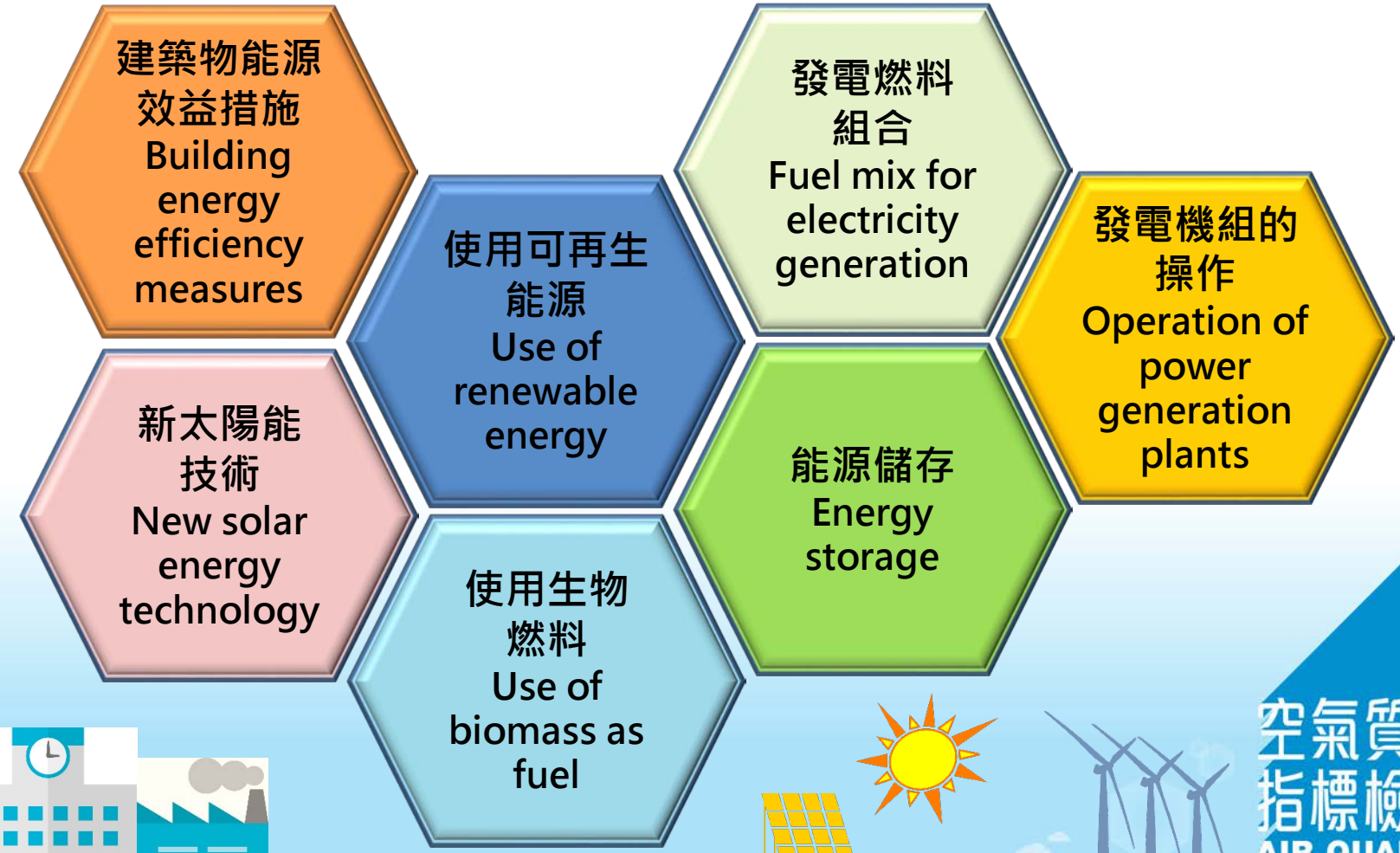
能源與發電
Energy and Power Generation



Energy and Power Generation
能源與發電

空氣質素指標檢討
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可能短期措施的例子
An Example of Possible Short-term Measures

建築物能源效益措施	Building energy efficiency measures
• 對並未納入《建築物能源效益條例》的舊建築物，探討採用建築物能源效益措施	• Explore building energy efficiency measures for old existing buildings which are not covered by the Buildings Energy Efficiency Ordinance

可能長期措施的例子
An Example of Possible Long-term Measures

建築物能源效益措施	Building energy efficiency measures
• 鼓勵主要電力用戶減少高峰期的電力需求，以減少燃煤機組為應付電力高峰需求的運作及排放	• Encourage major electricity users to reduce peak load demand so as to reduce the operation and emissions from coal-fired generating units for coping with peak load demand

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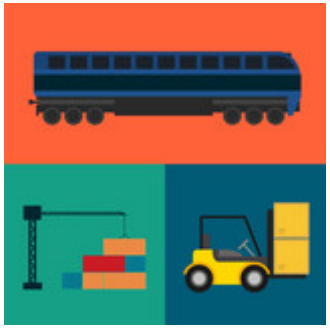
其他排放源
Other Emission Sources

含揮發性有機化合物的產品

VOC-containing Products

非道路移動機械

Non-Road Mobile Machinery



煮食油煙

Cooking Fumes

民用航空

Civil Aviation

空氣質素指標檢討
AIR QUALITY OBJECTIVES REVIEW
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分享你的意見 Share Your Views

- 由現在至**2017年10月14日**，歡迎你就以下問題分享意見：

  From now until **14 October 2017**, you are welcome to share your views with respect to the following questions:

1. 對於檢討中討論的改善空氣質素的可能新措施,你有何意見?
   Any views and comments on possible new air quality improvement measures discussed during the reviews?

2. 你對改善空氣質素的可能新措施有其他建議嗎?
   Any other suggestions on possible new air quality improvement measures discussed during the reviews?

空氣質素指標檢討
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回應 / 意見發表時間
Feedback / Q&A Session