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Merging Science, Policy, & Business - Building a Network of Sustainable Cities

Merging Science, Policy, and Business: Building a Network of Sustainable Cities

Robert Gottlieb & Simon Ng

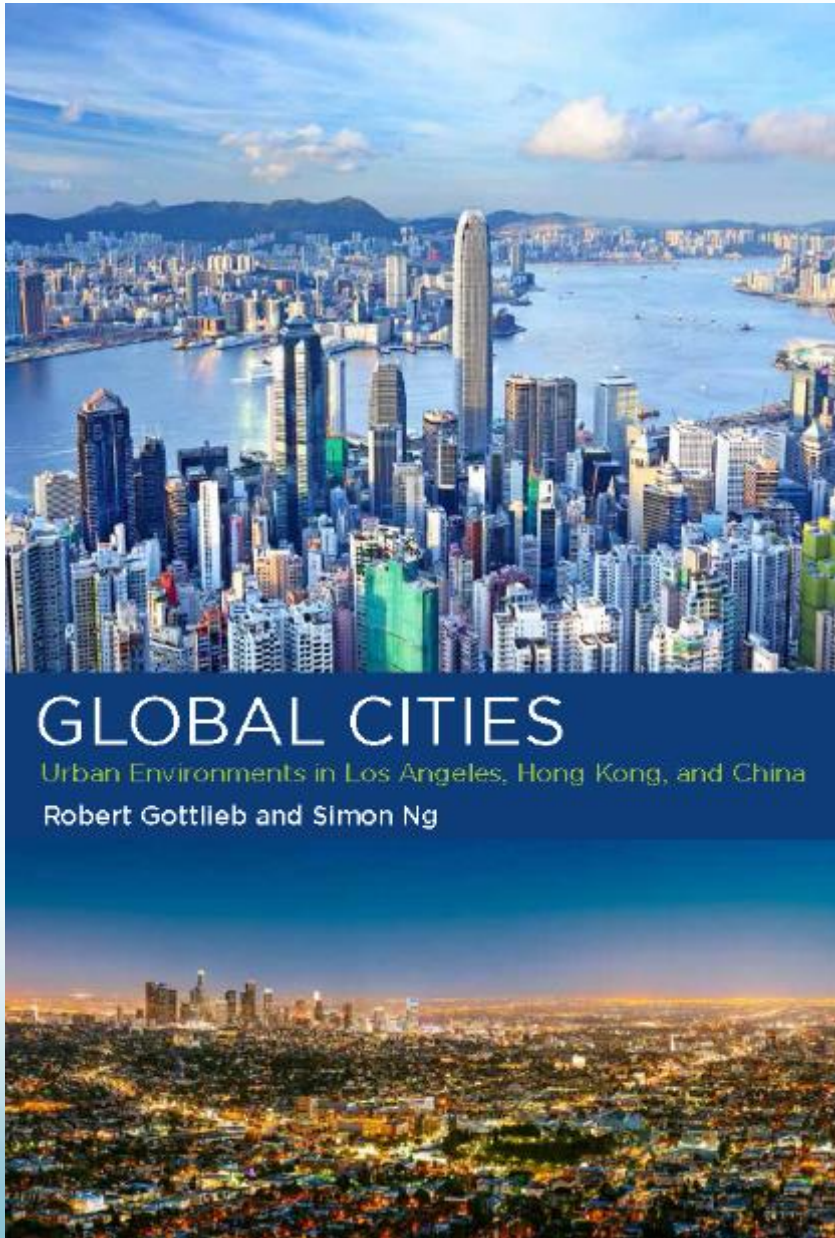
Organizer

Hong Kong University of Science and Technology

Supporting organization

Business Environment Council

11 September 2017



Global Cities: Urban Environments in Los Angeles, Hong Kong, and China

Robert Gottlieb and Simon Ng

MIT Press 2017

Acknowledgements





***Goods movement
& global trade***



***Water supply &
water quality***



Transportation



Air quality

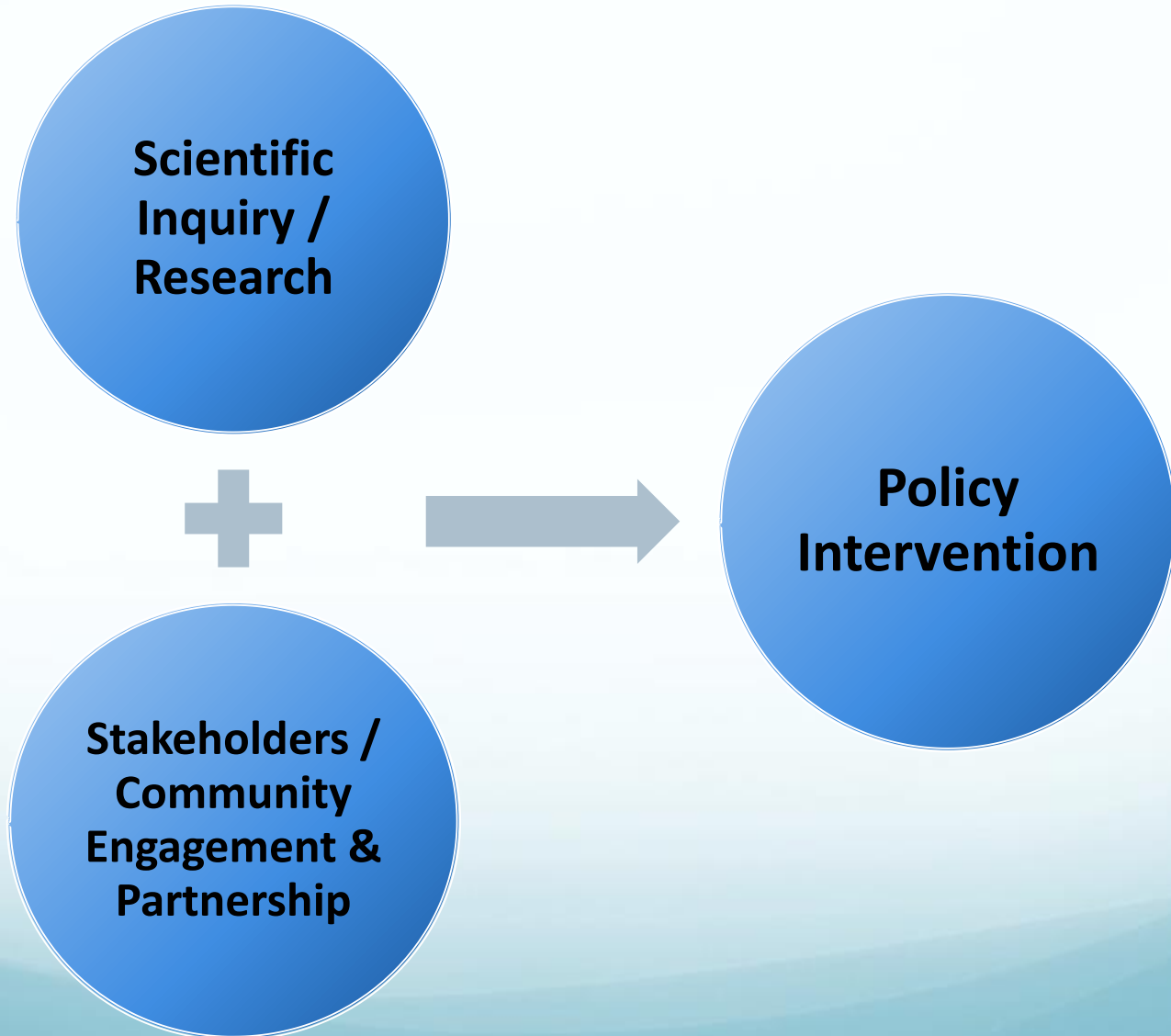


Food systems



Spaces

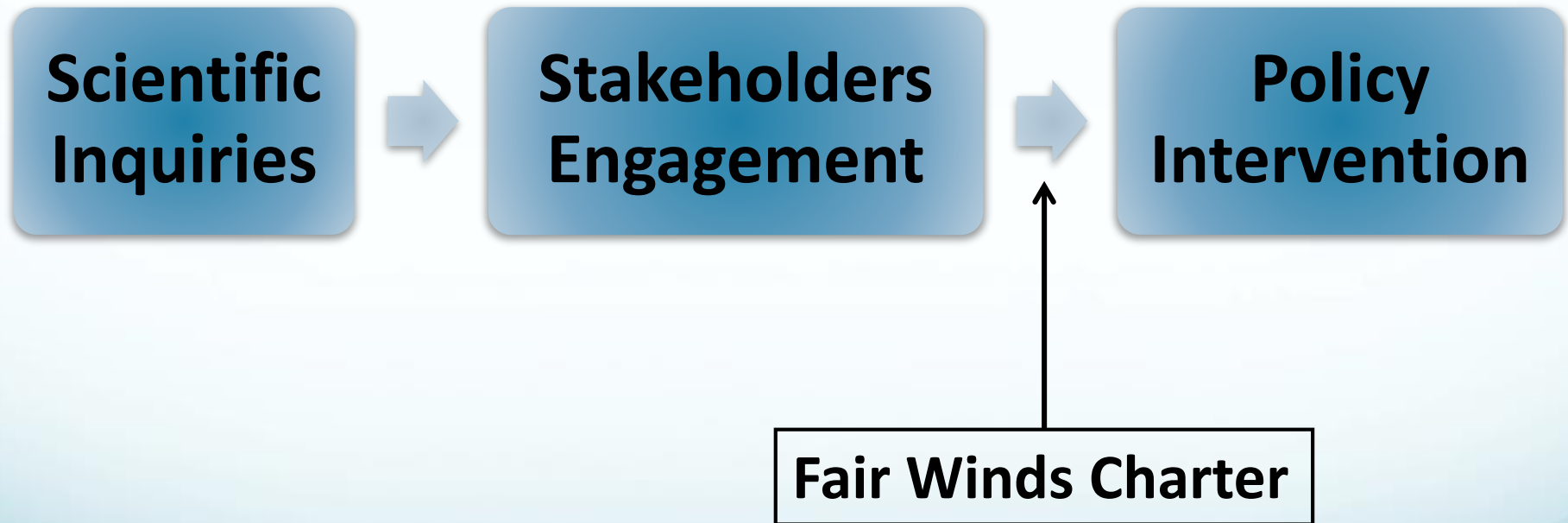
Action research and policy change



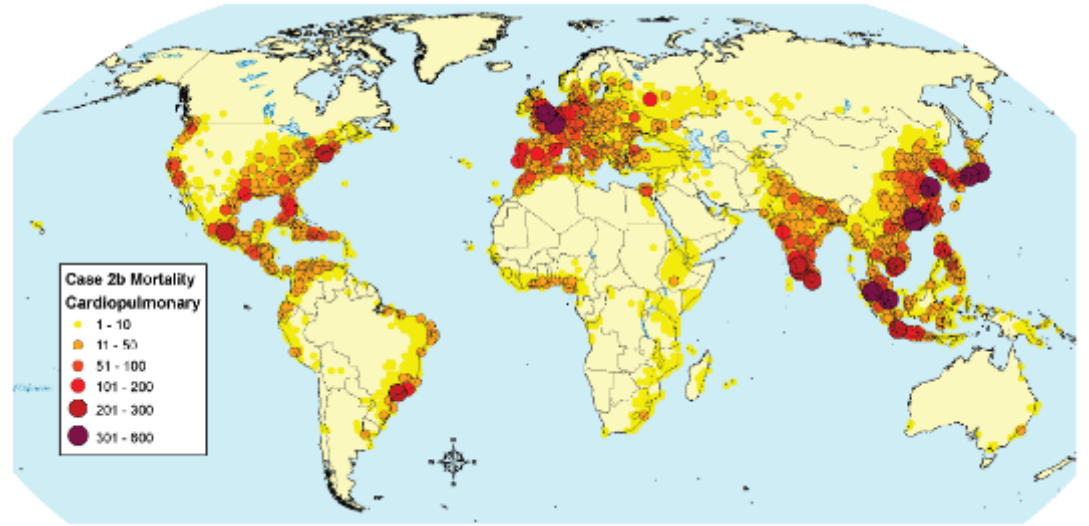
Science + Business → Policy Change

The case of the Fair Winds Charter

The Fair Winds Charter journey



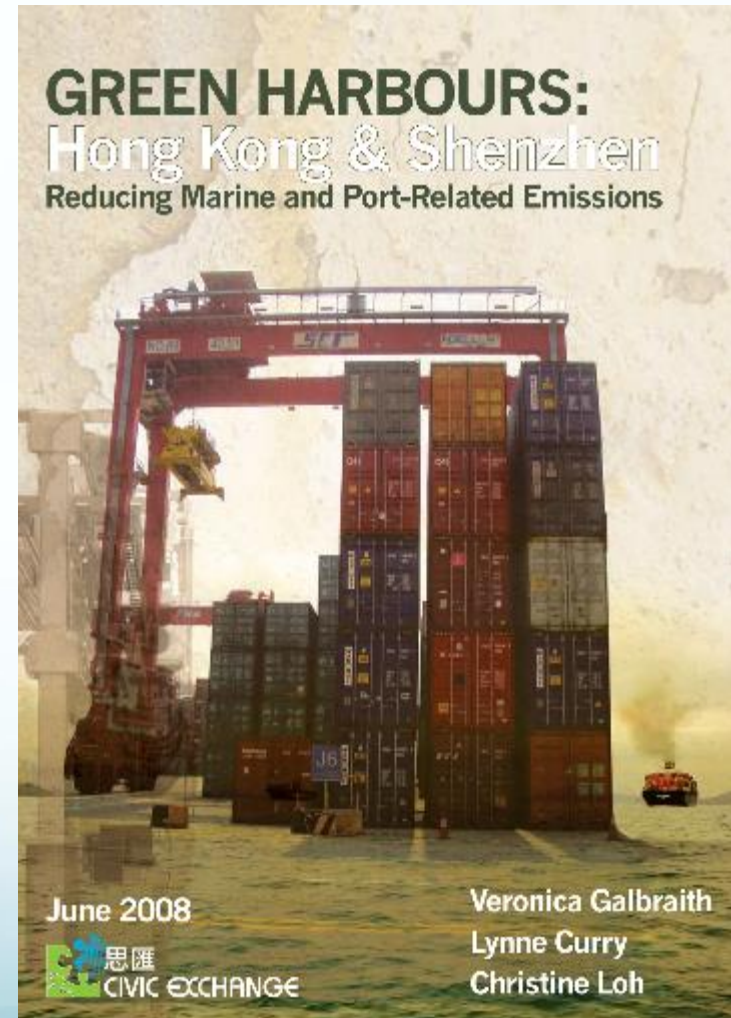
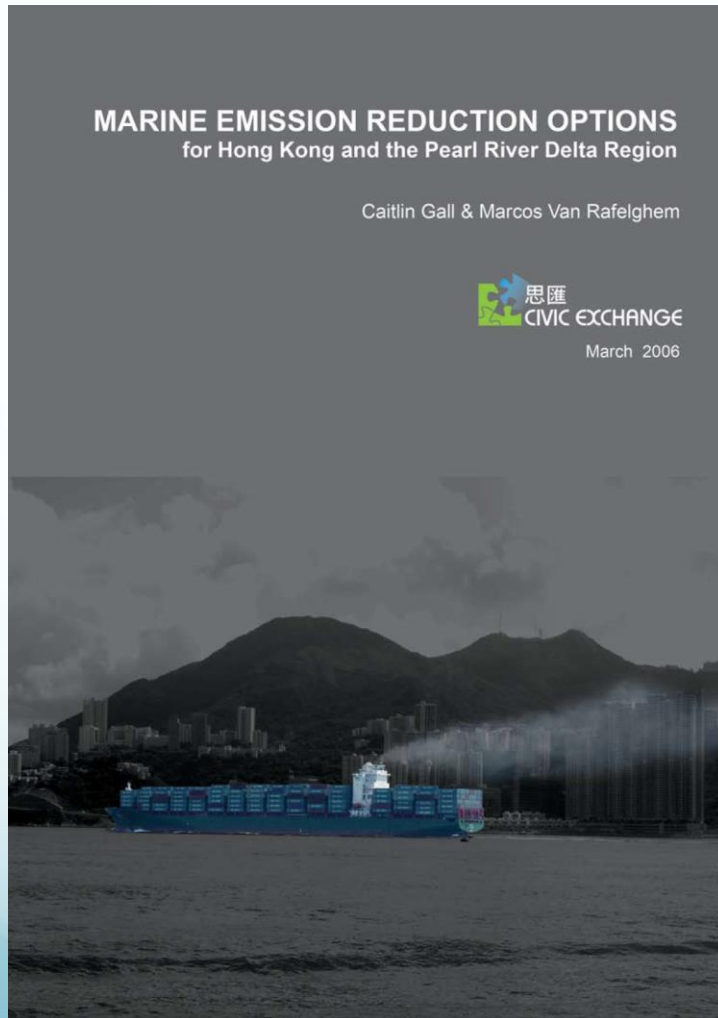
Why ship emissions?



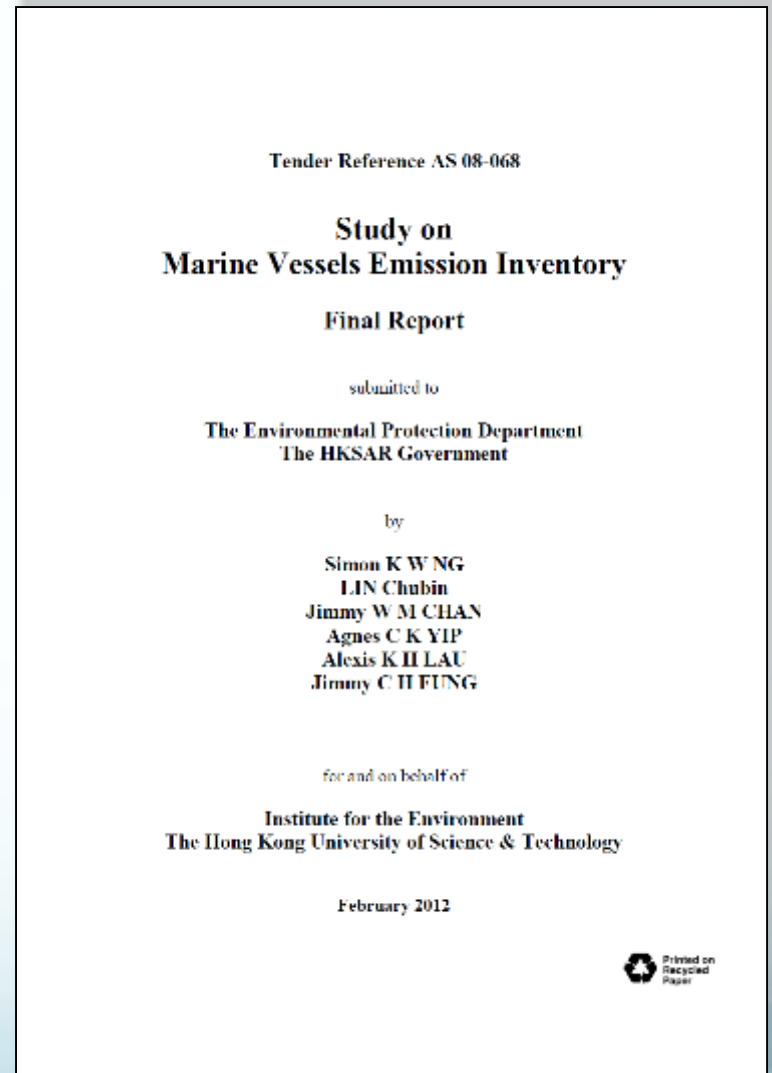
Hong Kong and Asia lagging behind international regulations

- International Maritime Organization (IMO)
 - International Convention for the Prevention of Pollution from Ships (MARPOL)
 - MARPOL Annex VI: global cap on fuel sulphur content – pre-2012: 4.5%; starting January 2012: 3.5%
 - Emission Control Areas
 - Northern Europe, North America, US Caribbean
 - Pre-2015: 1%; starting January 2015: 0.1%

Preliminary research on international best practices



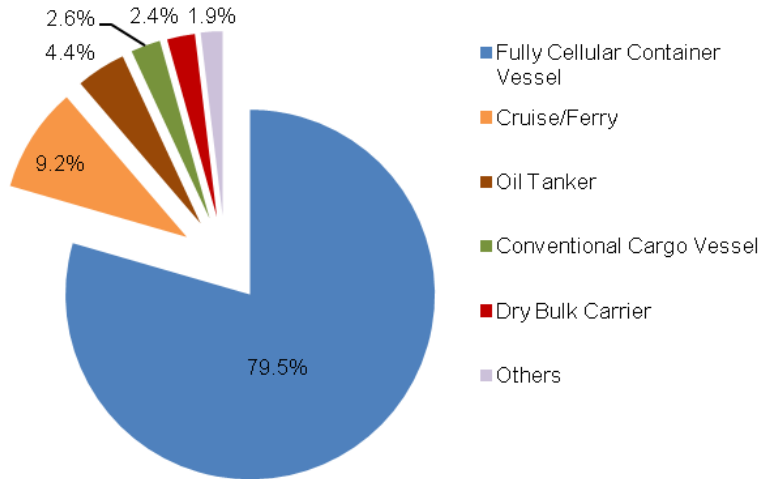
Groundbreaking ship emission inventory...



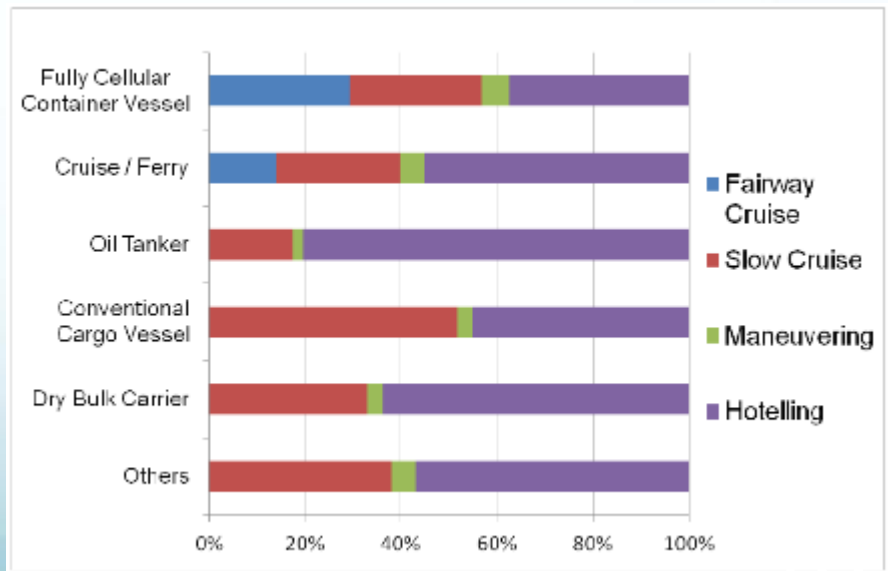
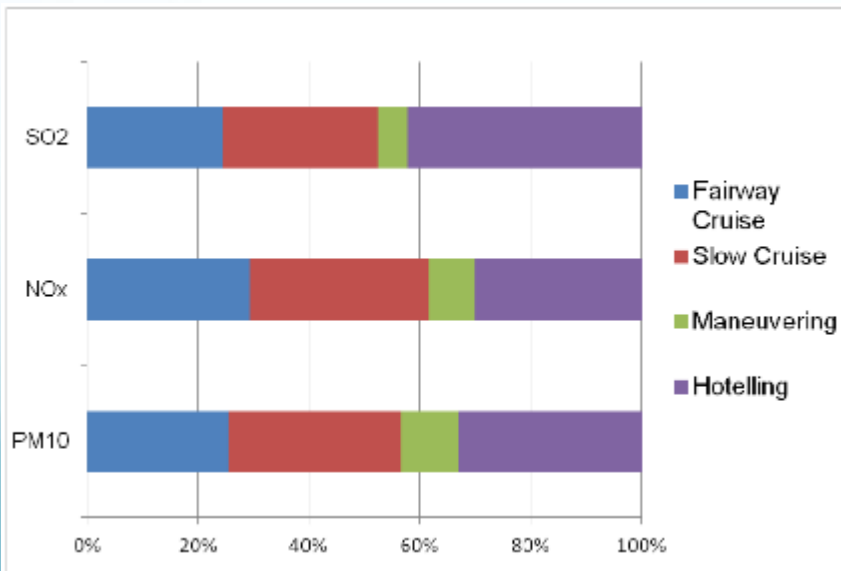
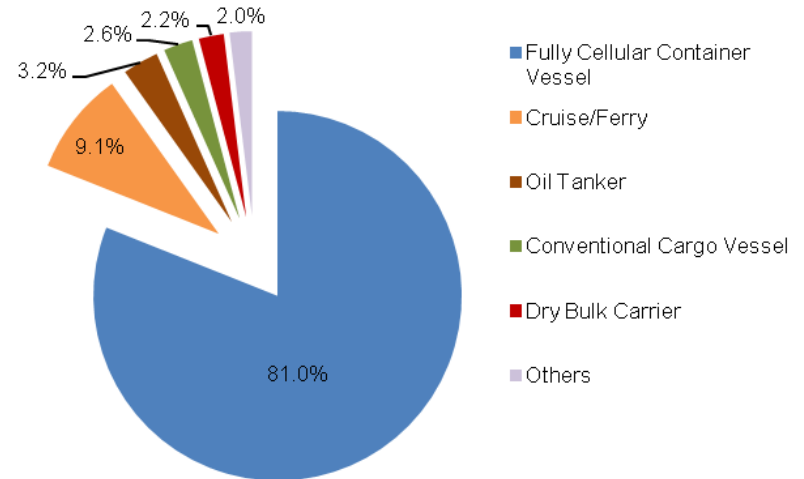
Source: S Ng, et.al. (2012) *Study on Marine Vessels Emission Inventory*, Final Report

... with detailed findings

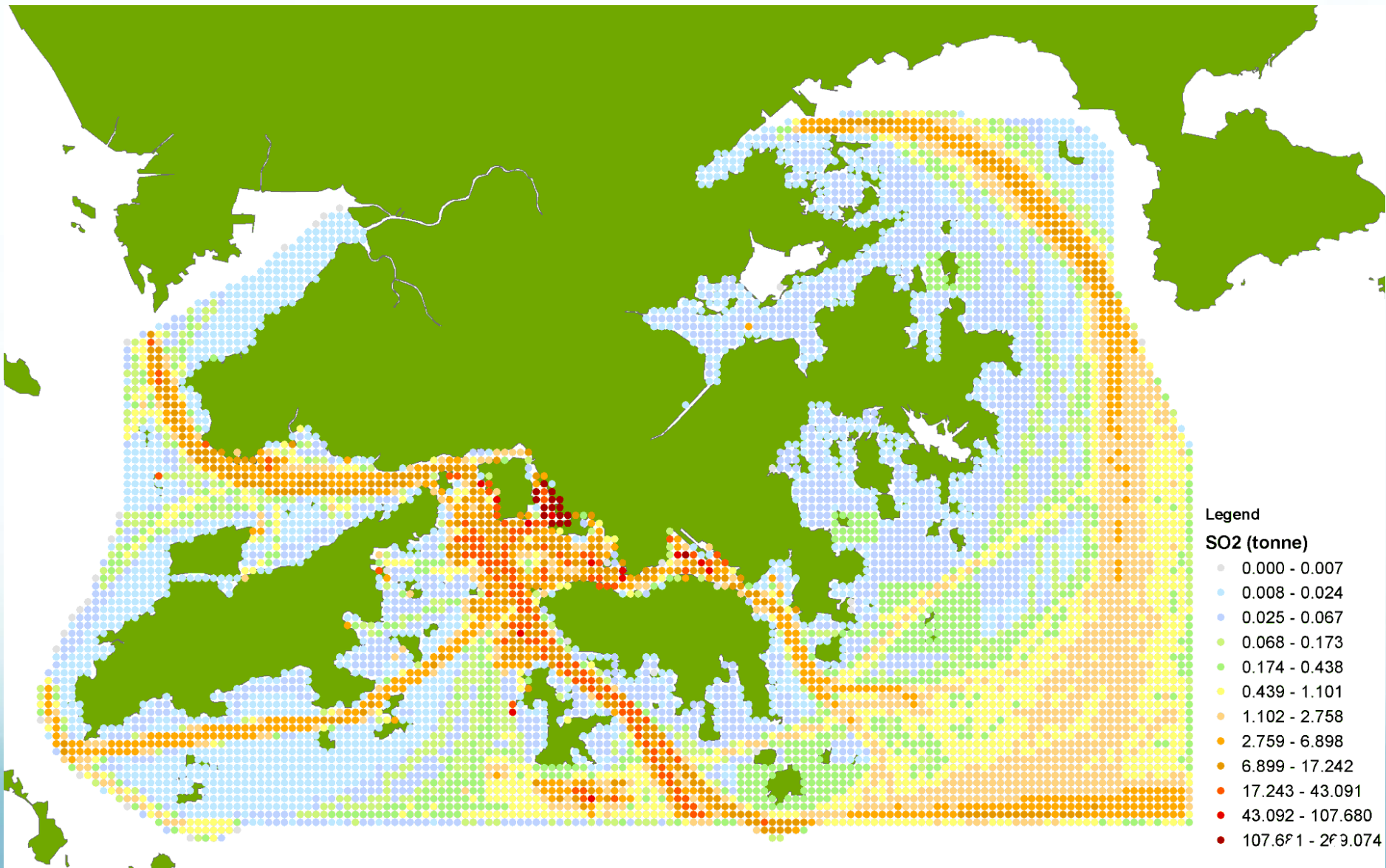
OGV SO₂ Emission by Vessel Type (%)



OGV PM₁₀ Emission by Vessel Type (%)



Ship emissions in Hong Kong



Source: S Ng, et.al. (2012) *Study on Marine Vessels Emission Inventory*, Final Report.

Stakeholders engagement

- Ongoing engagement: since 2008
 - 1 major conference
 - Over 10 cross-sector workshops
 - Hundreds of smaller events (meetings, briefing sessions, presentations, etc)



Broad and inclusive engagement

- Cross-sector engagement
 - International shipping lines
 - Container terminal operators
 - Local craft operators (such as barges & tugs)
 - Truck owners and operators
 - Shippers (cargo producers)
 - Fuel providers
 - Government agencies
 - Academia and research groups
 - NGOs and general public

Message from the industry

- Industry support shows commitment to be part of the solution
- Voluntary action a good starting point, but regulation always the best way to clean up
- Want regulation consistent with MARPOL Annex VI
- Regulation creates a level playing field within the sector and across the region

Industry-led voluntary action

The Fair Winds Charter 2011 - 2012

As international carriers, we recognize the emissions from our ships affect air quality in Hong Kong and the Pearl River Delta region. As responsible businesses, WE VOLUNTARILY COMMIT TO :

- Switching to a fuel containing 0.50% sulphur content or less ("low sulphur fuel") while at berth (at the terminal or at anchorage) in Hong Kong, to the maximum extent possible;
- Undertaking this voluntary initiative between 1 January 2011 and 31 December 2012;
- Collaborating within our sector and with the Hong Kong SAR and Guangdong Governments to introduce regulation on ship emissions, consistent with international standards.

In support of the HKLSA FAIR WINDS CHARTER, WE :

- Urge the Hong Kong SAR Government to take a lead and work with the Guangdong Government to regulate the use of low sulphur fuel in the Pearl River Delta region by 31 December 2012. Urge the Hong Kong SAR Government to encourage broader industry participation by providing incentives, as it has done with other transport modes.
- Encourage the container terminals to support this initiative by offering advantages to participating ships, as well as by addressing emissions from cargo handling equipment, and the trucks and local craft that service the terminals.
- Encourage ocean-going passenger liners and other maritime users of the Port of Hong Kong to use low sulphur fuel while at berth in Hong Kong.
- Encourage cargo producers and buyers to favour participating shipping lines as a way of meeting their sustainable supply chain commitments.
- Welcome the support of end consumers who purchase the goods that the shipping industry carries.



Crystal Cruises



EVERGREEN LINE

HAMBURG SÜD



CHINA NAVIGATION



Prestige Cruise Holdings



Bring the Government to the table...

Public Consultation
Study Reports
Guidelines & References
Advanced Search

Port Facilities and Light Dues Incentive Scheme For Ocean Going Vessels using Cleaner Fuel

Port Facilities and Light Dues Incentive Scheme

[Background](#)
[Eligibility](#)
[Registration](#)
[List of Registered Vessels](#)
[Application](#)
[Fuel Switch Log Sheet](#)
[News and Events](#)
[References](#)
[Further Information](#)

Background

Ocean going vessels (OGVs) run on residual oil, whose sulphur content is 2.8% on average. The emission of OGVs while at berth accounts for about 40% of their total emission within Hong Kong waters. To reduce marine emissions, the Government is encouraging OGVs to use fuel with sulphur content not more than 0.5% while at berth in Hong Kong waters by a 3-year incentive scheme that reduces the port facilities and light dues of OGVs that have adopted this green practice. The use of low sulphur fuel can substantially reduce air pollution at locations close to their berthing areas.

(1/20/2012)

A CLEAN AIR PLAN FOR HONG KONG

Environment Bureau in collaboration with
Transport & Housing Bureau
Food & Health Bureau
Development Bureau



March 2012

二零一三年施政報告 2013 Policy Address

香港 | 英文

經中求變 務實為民 Seek Change Maintain Stability Serve the People with Pragmatism



W3C W3C-A4 W3C 2.0

First Asian city to regulate ship emissions

- Air Pollution Control (Ocean Going Vessels) (Fuel at Berth) Regulation became effective starting from 1 July 2015.
- Hong Kong is the first city in Asia to regulate ship emissions through marine fuel used by ocean going vessels
- The government extended the port facilities and light dues incentive scheme for ocean-going vessels until March 2018
- 12% of total SO_2 and 6% of PM_{10} will be reduced

Ingredients for success

- A platform for partnership with the business sector
- Leaders to champion the course
- Transparency and willingness to share views
- Scientific evidence to support actions
- Voluntary initiatives leading to regulation
- Mutual trust and respect
- Common goals and vision

Food Networks and Sustainable Cities

LA Food Policy Council

STRATEGIC OBJECTIVES

We build the GOOD FOOD MOVEMENT by collaborating and leading on the following strategic objectives:

CLOSE THE GAP IN ACCESS to healthy food and food assistance programs for underserved communities

GROW FAIR AND LOCAL FOOD ECONOMY by supporting socially and environmentally responsible economic models

STRENGTHEN LOCAL, CLIMATE RESILIENCY and protect environmental resources in our food system

BUILD DIVERSE LEADERSHIP CAPACITY for a multi-sector food movement that will be able to make progress on the above objectives

LA Food Policy Council

ENVISIONING PROGRESS: WHAT DOES IT LOOK LIKE IN 5 YEARS?

Close the Gap in Access	<p>Measurable progress toward all Angelenos living within ½ a mile of fresh food access or food assistance.</p> <p>Reduction in diet-related health disparities facing low-income, communities of color in LA.</p>
Grow a Fair Food Economy	<p>Measurable progress for food workers and sustainable farmers within LA’s food supply.</p> <p>Stronger local food economy providing quality jobs and ownership opportunities, especially for people of color and low-income residents.</p> <p>Measurable improvement in municipal food programs serving food insecure residents and benefiting local and mid-sized high-road business.</p>
Strengthen Climate Resiliency and Protect Environmental Resources	<p>Measurable reduction of food waste from landfills; increase in composting, healthy soils and food recovery programs across City of LA.</p>
Build Diverse Leadership Capacity	<p>Proliferation of diverse participation in Good Food organizations and enterprises across region.</p> <p>Better connectivity between urban and rural communities on Good Food for All Agenda.</p> <p>Increased participation of most impacted stakeholders.</p>

Center for Good Food Purchasing

- Create a food system based on values
- Increase transparency along the food supply chain
- Procurement strategies for public institutions
- Establish a system for standards and verification
- Provide a verification seal to institutions that meet baseline requirements



Good food purchasing values

- Local economies
 - Support small and mid-sized agricultural and food processing operations within the region
- Environmental sustainability
 - Producers employ sustainable production systems that reduce or eliminate synthetic pesticides and fertilizers; avoid use of hormones, routine antibiotics and genetic engineering; conserve soil and water; protect and enhance wildlife habitats and biodiversity; reduce on-farm energy and water consumption, food waste and greenhouse gas emissions; and increase menu options that have lower carbon and water footprints.

Good food purchasing values (cont'd)

- Valued workforce
 - Provide safe and healthy working conditions and fair compensation for all food chain workers and producers from production to consumption.
- Nutrition
 - Promote health and well-being by offering generous portions of vegetables, fruit, whole grains and minimally processed foods, while reducing salt, added sugars, saturated fats, and red meat consumption, and eliminating artificial additives.
- Animal welfare
 - Provide healthy and humane care for farm animals

The good food purchasing standards

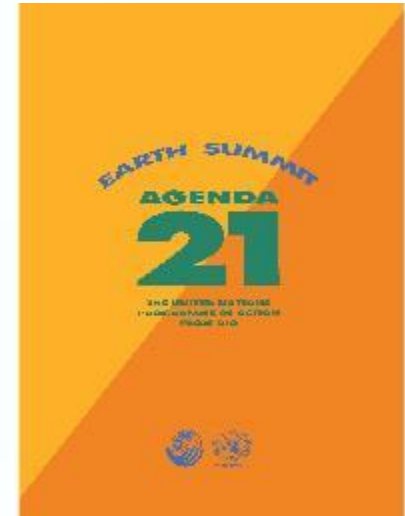
- The Center for Good Food Purchasing provides annual independent analysis of an institution's purchasing data and provides a verification seal with individualized, branded materials to institutions that meet baseline requirements across the five value categories.
- Certification and product claims included in the Good Food Purchasing Standards are carefully considered by a panel of issue area experts and reviewers. To be included, certifications and product claims are ranked according to rigor, auditing process, and alignment with the Program's vision for change.
- The Good Food Purchasing Standards undergo a regular review and update process that includes extensive stakeholder outreach and input to ensure the Standards reflect the most up-to-date knowledge in the field and industry standards.

Verification and scoring

- **Baseline standard**
 - Each of the five value categories has a baseline standard. To become a Good Food Provider, an institution must meet at least the baseline (equal to one point) in each of the five values.
- **Certification-based**
 - Standards are based off of third party certifications that have been identified as meaningful and ranked by national experts in each category.
- **Flexible, tiered point system**
 - More points are awarded for achievement at higher levels in each category, allowing institutions to raise their score by emphasizing their high priority categories
- **Aggregation of points and star rating**
 - Points earned in each category are added together to determine overall number of points earned. A star rating is awarded.

The new municipalism

- Agenda 21
- C40 cities
- Fearless cities



FEARLESS CITIES



Sustainable cities

- Uneven policies
- Regional – Global