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**Report of the Bills Committee on Shipping Legislation
(Control of Smoke Emission) (Amendment) Bill 2014**

Purpose

This paper reports on the deliberations of the Bills Committee on Shipping Legislation (Control of Smoke Emission) (Amendment) Bill 2014 ("the Bills Committee").

Background

Existing legislation and enforcement

2. At present, it is an offence for a non-local vessel or a local vessel to emit smoke in Hong Kong waters in such quantity that constitutes a nuisance under Shipping and Port Control Ordinance (Cap. 313) and Merchant Shipping (Local Vessels) Ordinance (Cap. 548) respectively.

3. According to the Legislative Council Brief issued on 26 February 2014 (File Ref.: THB(T)PMLCR 8/10/60/4), the Marine Department ("MD") has been making reference to the Ringelmann Chart, which is a device with four shades of gray of different intensity, to measure the level of smoke emission from vessels (**Appendix I**). The current practice adopted by MD is that if the intensity of emission is found to be as dark as or darker than shade 2 on the Ringelmann Chart and that such emission has lasted for three minutes or more, it will be used as supporting evidence that a nuisance has been caused. Such practice has also been adopted by MD since 2005 as the benchmark in conducting the smoke emission test for local vessels during their applications for the issue or renewal of a certificate of survey.

4. According to the Administration, from 2007 to May 2014, MD has observed a total of 11 881 vessels in 10 visual surveys. Depending on the intensity of the smoke detected during the visual surveys, MD has issued 24 warning letters and 223 advisory letters to the vessels concerned. The number of vessels with visible emission as noted in the monitoring surveys conducted

by MD has dropped from 40.8% in 2007 to 1.4% in 2013. During this period, a total of seven cases (4 in 2007, 1 in 2010 and 2 in 2012) have been successfully prosecuted.

Report of the Public Accounts Committee on Director of Audit's observations in respect of dark smoke control of vessels

5. At his Report No. 59, the Director of Audit urged that in order to provide an effective means to control dark smoke emission from vessels, the Administration should expedite action to seek legislative support to give effect to adopting the Ringelmann Chart as a reference to measure dark smoke emission from vessels.

6. The Public Accounts Committee ("PAC") noted that of the 5 360 vessels surveyed in 2010 and 2011, MD only had one successful prosecution case against the master of a vessel which was found to have emitted dark smoke. Upon PAC's enquiry about the reason for such a low success rate, MD pointed out that under Cap. 313 and Cap. 548, the specified person, e.g. the owner and master/coxswain of a vessel, would only be subject to prosecution if the vessel emitted smoke in such a quantity as to be a nuisance. However, it was difficult to gather sufficient evidence to show that the dark smoke emission was in such a quantity as to be a nuisance for taking prosecution action. In this connection, MD had proposed to the Transport and Housing Bureau ("THB") to introduce legislative amendments to these two Ordinances to give effect to adopting the Ringelmann Chart as a reference to measure dark smoke emissions from vessels.

7. In April 2008, MD consulted the local vessel trade on the introduction of an offence for dark smoke emission by vessels if the intensity of emission is found to be as dark as or darker than shade 1 of the Ringelmann Chart. Having considered the industry's objection and overseas experience (ports in the United Kingdom ("UK") and the United States ("US")), THB and MD had drawn up a revised proposal for consultation with the trade before briefing the Panel on Economic Development on the legislative proposals on 27 May 2013. The legislative proposals were subsequently introduced into the Legislative Council under the Shipping Legislation (Control of Smoke Emission) (Amendment) Bill 2014 ("the Bill").

The Bill

8. The Bill, being first read on 19 March 2014, seeks to amend Cap. 313 and Cap. 548 to re-formulate the offence, so that in future it is the emission of smoke reaching a certain intensity of shade of gray (i.e. as dark as or darker than shade 2 on the Ringelmann Chart) for three minutes or more continuously

at any one time that would constitute an offence. Further, the Bill proposes that –

- (a) for non-local vessels, the maximum fines be increased from the current \$10,000 to \$25,000 for a first conviction of the relevant offence, and from the current \$20,000 to \$50,000 for any subsequent conviction of the relevant offence; and
- (b) for local vessels, the maximum fines will remain unchanged, which is \$10,000 for a first conviction and \$25,000 for any subsequent conviction.

The Bills Committee

9. At the House Committee meeting on 21 March 2014, Members agreed to form a bills committee to scrutinize the Bill. The membership list of the Bills Committee is at **Appendix II**. Under the chairmanship of Dr Hon Kenneth CHAN Ka-lok, the Bills Committee has held two meetings and received views from deputations at one of the meetings. The seven deputations which have given views to the Bills Committee are listed in **Appendix III**.

Deliberations of the Bills Committee

10. The Bills Committee supports the policy direction of the Bill. The issues of concern raised by members in the course of deliberation are summarized in the ensuing paragraphs.

Long title of the Bill

11. According to the long title, the Bill seeks to amend Cap. 313 and Cap. 548 "to enhance the control of emission of dark smoke" from vessels in the waters of Hong Kong. There is a concern that given it is the nuisance caused, e.g. odour of the emitted smoke, rather than the colour of the smoke that is expressly regulated under the existing provisions and the control has shifted from nuisance to colour-based, it may not be entirely correct or objective to describe the amendments as "to **enhance** the control of emission of **dark** smoke".

12. As explained by the Administration, "smoke" is defined in Cap. 313 and Cap. 548 to include "soot, ash, grit and gritty particles emitted in smoke or steam". Dark smoke (which may vary in degree of intensity) contains the substances mentioned in the definition, and as a result causes nuisance and adverse environmental impact. The proposed amendments in the Bill do not

change the fact that dark smoke causes nuisance but enhance the regulation of dark smoke by introducing an objective benchmark for taking enforcement and prosecution actions. The long title therefore accurately captures the objective of the amendments which are to "enhance the control of emission of dark smoke".

The use of Ringelmann Chart

13. Some members have expressed concern that the Ringelmann Chart has been in use for more than 120 years and enquired about the latest technologies/methodologies other than the use of the Ringelmann Chart, which have been adopted by major ports to measure, regulate and control the emission of smoke/dark smoke by vessels.

14. According to the Administration, MD has researched into overseas practice and noted that some ports in the UK and the US have adopted a similar reference standard, viz. shade 2 on the Ringelmann Chart for three minutes or more, as the benchmark for taking prosecution actions against excessive smoke emission from vessels.

15. At the request of the Bills Committee, the Administration has made enquiries with 22 overseas ports on ways to control dark smoke emission from vessels. Based on the response received from the six maritime authorities and those enquired earlier, some ports in the UK and the US have adopted the Ringelmann Chart which is the only tool known to be used in the control of dark smoke emission from vessels. The UK prohibits smoke emission from vessels that is as dark as or darker than shade 2 on the Ringelmann Chart but the maritime authority concerned is not aware of any prosecution cases heard by court in the past ten years. Members also note that the port authority of Hamburg and the European Commission focus their control on the emission of sulphur dioxide ("SO₂") and/or nitrogen oxides ("NO_x") from vessels.

16. According to the Administration, excessive dark smoke emission from vessels is usually an indicator of improper engine operation or maintenance and there is no direct relationship between the emitted dark smoke and the sulphur content of the diesel used. On the regulation of emission of SO₂ and NO_x from vessels in international ports and Hong Kong waters, the Environmental Protection Department ("EPD") has advised that it is currently controlled at source at international ports through the implementation of Annex VI to the International Convention for the Prevention of Pollution from Ships ("Annex VI"). Annex VI caps the sulphur content of marine fuel and imposes standards for NO_x emission from engines of newly built vessels, which help reduce the emissions of SO₂ and NO_x. In Hong Kong, the requirements of Annex VI are implemented through the Merchant Shipping (Prevention of Air Pollution) Regulation (Cap. 413M). To step up control of vessel emissions in Hong Kong

waters, EPD has implemented new regulations since April 2014 to tighten the sulphur content across the board from 0.5% to 0.05% for marine light diesel supplied locally. In September 2012, the Administration has launched a 3-year incentive scheme to reduce by half the port facilities and light dues charged on ocean-going vessels ("OGVs") using cleaner fuel voluntarily when at berth in Hong Kong waters. Further, EPD intends to introduce the switching to cleaner fuel while at berth as a statutory requirement for OGVs and is preparing the relevant legislative proposal which, if approved by the Legislative Council, would come into operation in 2015.

17. Against the above background, some members have queried whether Hong Kong should use the Ringelmann Chart to control the emission of dark smoke from vessels. The Administration has explained that the proposed use of the Ringelmann Chart is intended to address the difficulty in gathering sufficient evidence to show that the dark smoke emission is in such a quantity which constitutes a nuisance and to take prosecution action. Moreover, the proposal conforms with the use of the Ringelmann Chart under existing legislative provisions of regulating smoke emission from facilities on land.

Enforcement

Investigation, enforcement and prosecution procedures

18. Members note that the Harbour Patrol Section ("HPS") of MD is responsible for the enforcement of Cap. 313 and Cap. 548, including those provisions on smoke emission. Since 2007, the establishment of HPS has been maintained at around 70 patrol officers with a fleet of 25 patrol launches.

19. On enforcement, the Administration has explained that after passage of the Bill, MD officer(s) on board the launch would conduct survey of vessels in Hong Kong waters either randomly or upon receiving complaints, observe the emission, if any, time the duration of the emission which is as dark as or darker than shade 2 on the Ringelmann Chart, and, as supplementary information, take photographs and/or videos of the smoke and the vessel with a digital camera. The MD officers, if suspect that there is a breach of the relevant legislation by the vessel concerned, would board the vessel concerned to collect information and take statement from the vessel's master/coxswain about the vessel's operating conditions which may lead to the emission. If there is no evidence which can be found on the vessel in respect of any breach of the relevant legislation, MD would make an enquiry with the complainant regarding e.g. the intensity of the dark smoke that has been emitted from the vessel which the complainant has observed with reference to the Ringelmann Chart and the duration of such emission. If there is sufficient evidence to substantiate the commission of the relevant offence, HPS would compile a prosecution case file containing all the evidence collected and submit the case file to MD's

Prosecution Unit for examination and prosecution actions. If it is decided that prosecution actions should be taken, the relevant summons/notice specifying a date for court hearing would be issued to the vessel's master/coxswain, the vessel's owner and his agent. If there is no sufficient evidence to substantiate the commission of the relevant offence, MD would consider issuing a warning letter or advisory letter to the vessel depending on the darkness and duration of smoke emitted.

20. Some members have expressed concern about using different models of cameras to capture dark smoke which is emitted by a vessel, which may give rise to pictures that depict a different intensity of the smoke for the same smoke emission and lead to disputes in this respect. As such, the members have suggested that the Administration should consider designating a model to be used by the trade and MD with a view to avoiding such dispute. In response, the Administration has stressed that statement by the responsible MD officer/the witness is the most important evidence, and that photographs or videos of the smoke emission would serve as supporting information to facilitate a better understanding of the on-site situation.

Stepping up enforcement

21. Members note a deputation's call for the Administration to step up enforcement and expedite training for MD officers. The Administration has advised that it would step up enforcement as necessary. MD officers have received training on the use of the Ringelmann Chart and have all along been making reference to the Chart when conducting visual survey of vessels and enforcing the current provisions in Cap. 313 and Cap. 548.

Other concerns

22. There is a concern about the absence of a provision in Cap. 313 for an authorized officer¹ to direct the owner or master of a non-local vessel to deliver the vessel to the Director of Marine for ascertaining whether dark smoke emits from the vessel, as in the case of local vessels under Cap. 548. According to the Administration, since non-local vessels, including OGVs and cross-boundary passenger ferries, are manned at all times by qualified engineer officers who will be able to take immediate action to rectify the problem of emitting dark smoke, there is no need for such a provision.

¹ An "authorized officer" (獲授權人員) is respectively defined in Cap. 313 and Cap. 548 to mean -
(a) the Director of Marine and any public officer of Marine Department of or above the rank of Marine Inspector Class II;
(b) any police officer of or above the rank of Sergeant; and
(c) any public officer authorized in writing in this behalf by the Director.

23. The Bills Committee notes the objection of a deputation to the proposed amendment to Cap. 313 of holding the agent of a non-local vessel equally liable in case the owner commits an offence of excessive emission of dark smoke. The Administration has explained that given the owners of OGVs and river trade vessels are not in Hong Kong, the owner's agent, who acts on behalf of the owner and must ensure that the non-local vessel is properly maintained to avoid any contravention of the law, should be held equally liable should the vessel contravene the proposed requirements. This is in line with the current Cap. 548 under which the owner, the owner's agent and the coxswain of a local vessel are held liable to the proposed offence. The coxswain has the responsibility of informing the owner the operation and maintenance needs of the local vessel and not to operate the vessel concerned should it emit dark smoke.

Proposed penalties

24. There is a concern that, at present, the same maximum fines are imposed in relation to local and non-local vessels upon first conviction but under the Bill, heavier maximum fines will be imposed in relation to a non-local vessel.

25. According to the Administration, the Bill proposes a higher maximum fine for non-local vessels, which are predominately OGVs. As the power ratings of engine fitted on board OGVs are relatively larger than that of local vessels and hence emitting greater amount of dark smoke in the event of improper engine maintenance, the proposed higher fine is to commensurate with the greater severity of pollution problem caused by OGVs. For local vessels, the Administration considers that the levels, which were set in 2007, are still reasonable and effective in deterring against dark smoke emission from local vessels. The decision on whether to impose the maximum fine rests with the court having regard to the circumstances of individual cases.

26. There is a suggestion of raising the maximum penalty for convictions in respect of any subsequent offence to imprisonment to achieve deterrence and consistency with the penalty under the relevant legislation which regulates dark smoke emissions from vehicles and chimney stacks. The Administration explains that since the impact of dark smoke emission from vessels, being farther away from residential area, is smaller than that of onshore facilities and given the significant drop in the number of vessels with visible smoke emission from 2007 to 2013, it does not see the need to introduce the penalty of imprisonment for the time being. In addition, EPD has advised that in the past ten years, there is no record of imprisonment under the Air Pollution Control (Smoke) Regulations (Cap. 311C), the legislation regulating dark smoke emissions from chimney stacks and relevant plants.

Publicity and education

27. The Bills Committee notes that since January 2006, MD has been distributing leaflets about the prevention of excessive dark smoke emission and the penalty concerned to the vessel owners and masters/coxswains, and informing them that the Ringelmann Chart has been used for reference in the enforcement of the relevant provisions in Cap. 313 and Cap. 548. A member has suggested that the Ringelmann Chart should be distributed to the vessel owners during vessel surveys for issuance or renewal of vessel licences.

28. Members note the deputations' views that the Ringelmann Chart should be made available for those members of the public who are prepared to report excessive smoke emissions from vessels. As the Administration has indicated that it will not distribute the Ringelmann Chart to the public at large, the Bills Committee hence seeks alternative means which may facilitate the public's reporting of the proposed offence. According to MD, after the passage of the Bill, it will prepare publicity leaflets containing the new legal requirements as well as the photographs of dark smoke of various shades shown in the Ringelmann Chart for distribution to the trade and the general public for reference. MD will also implement the following measures to make known the new legal requirements to the general public and port users –

- (a) uploading the photographs of smoke of various shades as shown in the Ringelmann Chart and the publicity leaflets on the website of MD;
- (b) making the publicity leaflets available at various district offices of the Home Affairs Department for public distribution;
- (c) issuing an MD Notice to help the general public and port users understand the new legal requirements;
- (d) co-organising seminars with district organisations, relevant trades and various business associations to brief members of the public, vessel owners, vessel masters/coxswains and vessel operators on the new legal requirements; and
- (e) distributing the publicity leaflets to the persons on board during routine patrol to remind them not to let vessels emit dark smoke.

29. As regards the concern that consideration should be given to the recommendation of the Audit Commission to re-launch the Spotter Scheme, MD advises that should the emission of dark smoke from vessels aggravate after the passage of the Bill, it will consider re-launching the Spotter Scheme.

Other issues

30. The Bills Committee has also taken note of other issues concerning air quality raised by some deputations, including –

- (a) installation of onshore power supply facilities at the Kai Tak Cruise Terminal, Ocean Terminal and container terminals to facilitate vessels switching to electric power while berthing;
- (b) the setting up of Low Emission Zone and Emission Control Area in the Pearl River Delta waters and related ports in collaboration with the Guangdong Provincial Government;
- (c) requiring speed reduction of vessels within ports in Hong Kong waters; and
- (d) providing subsidy to vessel owners to replace the engines of their vessels.

Committee Stage amendments

31. No Committee Stage amendments to the Bill have been proposed by the Administration or the Bills Committee.

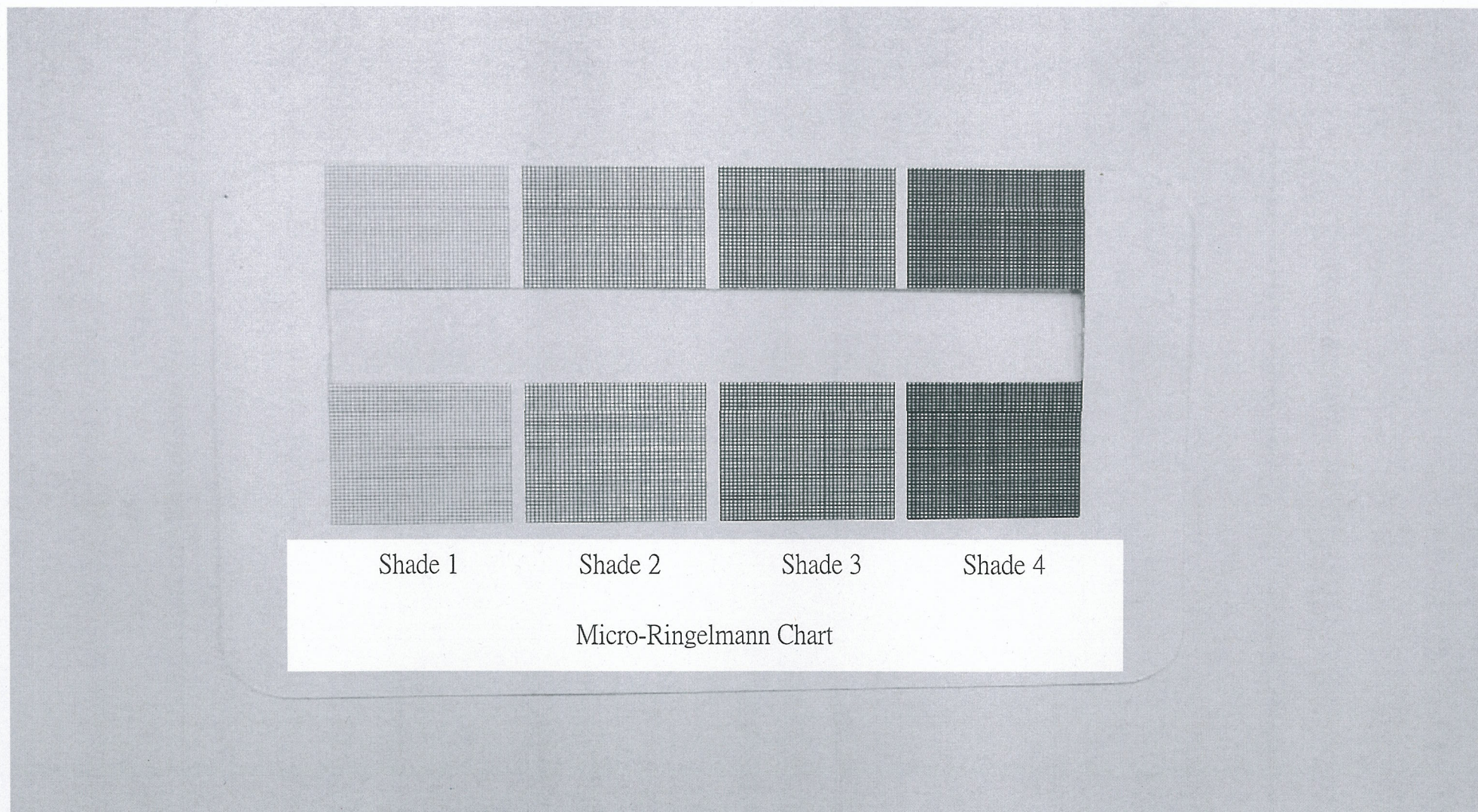
Recommendation

32. The Bills Committee supports the resumption of the Second Reading debate on the Bill on 9 July 2014.

Consultation with the House Committee

33. The Bills Committee reported its deliberations to the House Committee on 20 June 2014.

34. On 26 June 2014, the Administration has informed the Bills Committee that the copyright in the Ringelmann Chart no longer subsists and it will distribute the chart to the general public and port users in the publicity campaigns following the passage of the Bill (LC Paper No. CB(4)877/13-14(01) issued on 27 June 2014).



Shade 1

Shade 2

Shade 3

Shade 4

Micro-Ringelmann Chart

**Bills Committee on Shipping Legislation (Control of Smoke Emission)
(Amendment) Bill 2014**

Membership list

Chairman Dr Hon Kenneth CHAN Ka-lok

Members Hon Cyd HO Sau-lan, JP
Hon Steven HO Chun-yin
Hon Frankie YICK Chi-ming
Hon Kenneth LEUNG
Hon SIN Chung-Kai, SBS, JP

(Total : 6 members)

Clerk Ms Debbie YAU

Legal Adviser Miss Evelyn LEE

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(Amendment) Bill 2014**

**List of organizations/individuals that have given views to the
Bills Committee**

1. Civic Party*
2. China Classification Society Hong Kong Branch*
3. Clean Air Network
4. Designing Hong Kong
5. Friends of the Earth*
6. Guangdong and Hong Kong Feeder Association Limited*
7. Hong Kong & Kowloon Floating Fisherman Welfare Promotion Association

* Submission only