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Assessment on equivalence of control level established under the Hong Kong Convention as that established under the Basel Convention

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Declaration

I certify that all the material in this research paper that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this research paper reflect my own personal views, and are not necessarily endorsed by the University.

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Title: **Assessment on equivalence of control level established under the Hong Kong convention as that established under the Basel convention**

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Abstract

This dissertation is an assessment on whether the Hong Kong convention establishes an equivalent level of control as that established under the Basel convention.

First of all, a brief look is taken at ship recycling industry worldwide and health and environmental issues arising from the industry. The focus of the introduction is set on the migration of the industry from developed countries to developing countries, hazardous materials released from ship recycling operations.

Meanwhile, the basic international instruments regulating ship recycling activities, namely the Basel convention and the Hong Kong convention, are examined, and the focus of the investigation is set on the development, key elements and limitations of the two conventions.

Furthermore, the development and the limitation of the assessment criteria proposed by OEWG are investigated, and then previous submissions from party states and relevant stakeholders are also analyzed. Based on the criteria and submissions, a comprehensive assessment is conducted.

Finally, based on the analytical result, the concluding chapter gives the answer on whether the Hong Kong convention establishes an equivalent level of control as that established under the Basel convention.

KEYWORDS: ship recycling, environmental and sound management, Basel convention, Hong Kong convention, equivalent level of control, comprehensive assessment.

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List of Abbreviations

BC	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal,1989
CA	Competent Authorities
CIEL	The Center for International Environmental Law
COP	Conference of the Parties
EC	European Commission
ESM	Environmentally Sound Management
EU	European Union
FIDH	International Federation for Human Rights
FOC	Flag of Convenience
GT	Gross Tonnage
HKC	Hong Kong international convention for the safe and environmentally sound recycling of ships, 2009
ICIHM	International Certificate on Inventory of Hazardous Materials
IHM	Inventory of Hazardous Materials
ILO	International Labour Organization
IMO	International Maritime Organization
IRRC	International Ready for Recycling Certificate
ISRA	International Ship Recycling Association
MEPC	Marine Environment Protection Committee
MOE	Ministry of the Environment, Japan
NGO	NGO platform on shipbreaking
OECD	Organization for Economic Co-operation and Development
OEWG	Open-ended Working Group to the Basel Convention
PCBs	Polychlorinated Biphenyls

PIC	Prior Informed Consent
RO	Recognized Organization
SBC	Secretariat of the Basel Convention
SRF	Ship Recycling Facilities
SRP	Ship Recycling Plan
TBT	Tetra-n-butyltin
UNEP	United Nations Environment Programme
USEPA	U.S. Environmental Protection Agency
WB	World Bank
YPSA	Young Power in Social Action

Chapter Ⅰ Introduction

1.1 Motivation

During the past decades, a large number of obsolete ships were delivered to ship recycling states in South Asia for recycling. However, since beaching method was commonly used in major ship recycling states, it finally led to negative effects on human health and environment and then triggered global concerns. In response to this issue, by Decision VII/26 COP to the Basel convention invited IMO to establish a mandatory requirements that ensure an equivalent level of control as established under the Basel convention and ensure ESM of ship recycling (SBC, 2005, p.64). On 1 December 2005, IMO agreed on New Legally Binding Instrument on Ship Recycling thought Resolution A.981 (24), requesting MEPC to develop mandatory instrument and adopt it during 2008-2009 (IMO, 2005, p.2). On May 2009, the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships was adopted, yet it has not entered into force (Chang, Wang & Durak, 2010, p.1392).

As ship may be identified as waste and then subject to the Basel convention, it gives rise to the possible duplication of regulatory instruments with the same objective. As a result, on June 2008 by Decision IX/30 COP to the Basel convention requested the OEWG to carry out a preliminary assessment on whether the draft ship recycling convention establishes an equivalent level of control and enforcement as that established under the Basel convention (SBC, 2008b, p.56). On May 2010, COP to the Basel convention invited parties and relevant stakeholders to submit preliminary assessment on equivalence according to the criteria developed by the OEWG to the Basel Secretariat (SBC, 2010, p.29). By April 15, 2011, a number of party states and

relevant stakeholders submitted their submission as requested.

As a result, based on the assessment criteria proposed by OEWG and previous submissions from party states and relevant stakeholders, this dissertation aims to carry out a comprehensive assessment on whether the Hong Kong convention establishes an equivalent level of control as that established under the Basel convention.

1.2 Aims and objectives

In order to achieve the aim, at first the dissertation briefly reviews ship recycling industry worldwide. Meanwhile, current international instruments regulating ship recycling activities, namely the Basel convention and the Hong Kong convention, are examined. Furthermore, the development and limitation of the assessment criteria proposed by OEWG are investigated. Consequently, the objectives of this dissertation are listed as follows:

1) Understanding the background of ship recycling industry and health & environmental issues arising from this industry;
2) Analyzing the development, fundaments and limitations of the Basel convention;
3) Analyzing the development, key elements and limitations of the Hong Kong convention;
4) Analyzing the development and limitations of the assessment criteria proposed by OEWG;
5) Conducting a comprehensive assessment based on the criteria proposed by OEWG and previous submissions from party states and relevant stakeholders.

1.3 Methodology

The primary methods for achieving the aim of this dssertation is qualitative legal analysis. To introduce the development of the ship recycling industry, relevant maritime journals and specialized reports were reviewed. In order to investigate the international instruments regulating ship recycling activities and explore the need to determine the eqivalence, certain conventions, resolutions, conference papers and official documents originating from relevant international institutes, such as UNEP and IMO, were studied. In addition, submissions of preliminary assessment from party states and relevant stakeholders also were analyzed for the sake of achievement of a comprehensive assessment.

1.4 Research scope

The research scope of this dissertation mainly focuses on qualitative legal analysis on the key elements which constitute the basis of control and enforcement mechanism under the Basel convention and the Hong Kong convention, and thus determines the equivalence of the Hong Kong convention based on the analytic result. However, this dissertation does not investigate the current issues related to ship recycling industry in detail, and the further development of regulatory regimes is also not discussed.

1.5 General description of the problem

In the past decades, ship recycling industry greatly contributed to economic development of developing countries in South Asia. However, it also led to adverse impacts on human health and environment. In order to respond to the global concern, IMO developed and adopted the Hong Kong convention in 2009, aiming to achieve

the safe and environmentally sound recycling of ships. However, the duplicity of international instruments regarding ship recycling activities gives rise to the question of coherence and compatibility between the new Hong Kong convention and the existing Basel convention. As a result, the COP to the Basel convention tries to address the question whether the Hong Kong convention provides an equivalent level of control as that of the Basel convention.

Chapter Ⅱ Background

2.1 Ship recycling and human health & environmental issues

Ship recycling refers to the process that an end-life-ship is dismantled so that some of its materials can be recycled. In 1960s, ship recycling industry mainly concentrated in industrialized states, and then it was migrated to India, China, Pakistan, Bangladesh and Turkey at the beginning of 1980s (FIDH, 2002, p.7). By 2011, more than 25 million GT of ships with 98% of the total tonnage worldwide were recycled in above five countries (Mikelis, 2013, p.6). As the ships of 500 GT or above worldwide was around 50000 ships, hereinto on average 1670 ships need to be recycled each year based on an average life-span of 30 years (Mikelis, 2010b, p.2).

Ship recycling industry figures prominently in the national economy of major ship recycling states in South Asia. It not only saves lots of foreign currency, but also provides raw materials for national industry, source of government revenue and employment opportunities (Hossain & Islam, 2006, p.10). For instance, ship recycling industry pays the government of Bangladesh about 700 crore taka annually, and it is also supplying 90% iron materials which were used as building materials to the country (YPSA, 2005, p.15). Nevertheless, since beaching method is commonly used in major ship recycling states, ship recycling operations discharges kinds of pollutants such as liquid, metal, gaseous and solid pollutants, and thus it seriously imperils human health and environment. As a result, a series of hazardous materials are generated during the process of ship recycling and the key hazardous materials include PCBs, Asbestos, Heavy metals, Ozone-depleting substances, Paints and Coatings and Oil (Zhou, 2012, p.3). Since some hazardous substances spill directly

into the soil, it causes serious soil contamination. According to a research by World Bank, soil contamination in ship breaking sites in Chittagong, Bangladesh and Gadani, Pakistan varies at different levels as shown in Table 1.

Table 1 - Soil contamination detected in the ship breaking sites in Bangladesh and Pakistan.

Substance	**Contamination Level (mg/kg)**
Cadmium	0.6 - 2.2
Chromium	2.42 - 22.12
Lead	11.3 - 197.7
Mercury	0.078 - 0.158
Oil	485 - 4,430

Source: Urano,Y. (2012). *The current picture and the future vision of the ship recycling indusrty: The contributions of Japan to achieving sustainable, safe and environmentally sound recycling of ships*. Unpublished master's thesis, World Maritime University, Malmö, Sweden.

As previously stated, the adverse impacts of ship recycling industry originate from beaching method. According to the statistics, more than 80 % of obsolete ships of 500 GT or above were recycled on tidal beaches in South Asia since 2004 (Ibeanu, 2009, p.7). Unlike ship recycling industry in industrialized and semi- industrialized countries before 1980s, ship recycling in South Asia is a labor intensive industry and relies on heavy manpower without sufficient winch and cranes, protective gear and emergency and treatment system. In addition, ships beached in South Asia have not been decontaminated although pre-cleaning is the first precaution prior to recycling. When the ships are beached, workers cut openings in the hull to let seawater in at high tide, and then oil-contaminated tanks are washed out and toxic and hazardous substances onboard such as hydrocarbon residues, heavy metals and cargo residues are directly released into the environment, causing seawater, soil and groundwater

contaminating (FIDH, 2002, pp.25-26). In the following ship recycling operations, other hazardous substances such toxic gas from paints containing TBT release into the environment and thus cause harm to workers. Moreover, downstream operations result in further discharge of hazardous substance due to lack of standard waste management and treatment facility. Take Bangladesh and Pakistan as an example, the principle disposal amount of hazardous wastes from ship recycling industries during the period from 2010 to 2030 is shown in Table 2.

Table 2- Principle disposal amounts of hazardous wastes from ship recycling yards and other recycling industries, 2010-1030.

Hazardous material (unit)	Remain at yard/ in beach sediment	Sold with equipment or as item	Re-rolling mills	Waste disposal site (formal)	Unknown or informal waste disposal site
Bangladesh					
Asbestos (t)	37,525	3,950	0	0	37,525
PCB mainly in cables (t)	24,000	216,000	0	0	0
ODS (PU foam) (t)	42,000	2,100	0	0	165,900
Paints (metals, TBT, PCB) (t)	3,460	3,460	58,820	0	3,460
Heavy metals (t)	169.5	169.5	339	0	0
Waste liquid organic (m^3)	1,978,000	0	0	0	0
Miscellaneous (sewage) (m^3)	107,000	0	0	0	0
Waste liquids inorganic (t)	193	389	0	0	193
Reusable liquids organics (t)	33,750	607,500	0	0	33,750
Pakistan					
Asbestos (t)	4,940	260	0	0	0
PCB (mainly in cables) (t)	1,600	14,400	0	0	0
ODS (PU foam) (t)	13,860	140	0	0	0
Paints (metals, TBT, PCB) (t)	455	228	3,867	0	0
Heavy metals (t)	22.5	22.5	0	0	0
Waste liquid organic (m^3)	130,000	0	0	0	0
Miscellaneous (sewage) (m^3)	7,000	0	0	0	0
Waste liquids inorganic (t)	25.5	25.5	0	0	0
Reusable liquids organics (t)	2,210	39,780	0	0	2,210

Source: World Bank. (2010). *Ship breaking and recycling industry in Bangladesh and Pakistan*. Washington, DC: Author.

2.2 The Basel convention

With the global awakening of environmental consciousness and tightening environmental regulation in the 1970s and 1980s, the public called for stringent controls on the disposal of hazardous wastes in order to combat the toxic trade as it was termed. Againist this background, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal was negotiated in the late 1980s and adopted in 1989 (hereinafter the Basel convention). Susbsequently, it entered into force in 1992.

2.2.1 The fundaments of the Basel convention

In order to protect human health and the environment against adverse effects generated from transboundary movements of hazardous wastes, the Basel convention exercises strict controls on the transboundary movement of hazardous wastes. To this end, the Basel convention strives to achieve three principal aims: (i) minimization of the production of waste at the source; (ii) environmentally sound management and disposal of waste (hereinafter ESM); (iii) minimization of transboundary movements of hazardous wastes and other wastes through national self-sufficiency in waste management (Peiry, 2010, p.4).

The Basel convention in no sense pursues thorough prohibition of the transboundary movement of hazardous waste. Actually, it imposes stringent controls on transboundary movement of hazardous wastes based on Prior Informed Consent (PIC) procedure. Under the Basel convention, State of Export is obliged to prohibit export if it is believed that the wastes will not be managed with environmentally sound manner. Meanwhile, the State of Export is also required to prohibit the export of hazardous waste to State parties that have prohibited the importation of such wastes. Furthermore, the convention requires Party States to introduce appropriate legislation to criminalize

and punish illegal traffic of hazardous waste. Moreover, State of Export is required to take back or adequately dispose of hazardous waste that was illegally exported as a result of conduct on the part of the exporter or generator (Bhattacharjee, 2009, p.206). Figure 1 reveals how transboundary movement of hazardous wastes are regulated under the Basel convention.

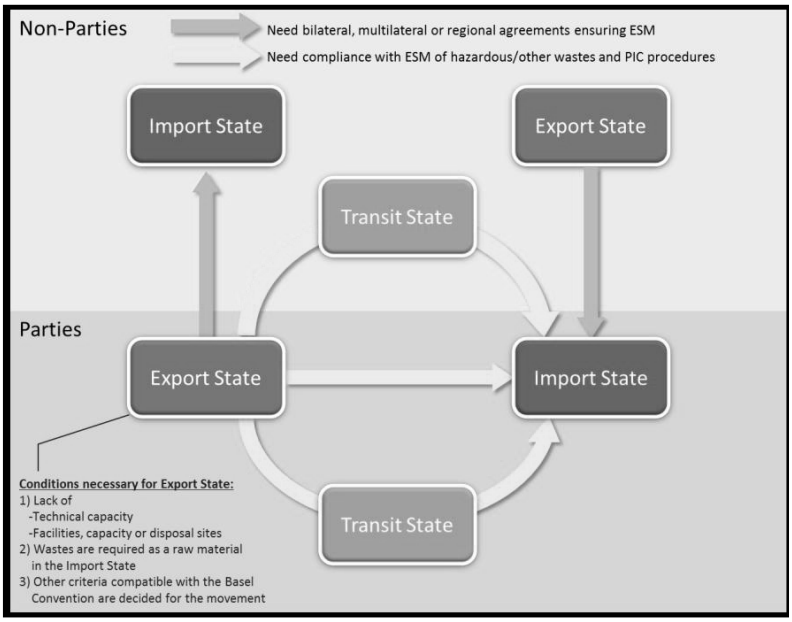

Figure 1- Transboundary movement of hazardous wastes and other wastes under the Basel convention

Source: Urano,Y. (2012). *The current picture and the future vision of the ship recycling indusrty: The contributions of Japan to achieving sustainable, safe and environmentally sound recycling of ships*. Unpublished master's thesis, World Maritime University, Malmö, Sweden.

As previsouly stated, developing countries greaatly benefit from ship recycling industry in respect of raw materials, government revenue and employment opportunities. Nevertheless, Parties to the Basel convention still express great concerns on the imports of hazardous wastes from developed countries to developing

countries without compliance with ESM. As a result, by Decision III/1Decsion the Basel Ban Amendment 1995 was adopted, requiring Parties listed in Annex VII to prohibit transboundary movements of hazardous wastes to states not listed in Annex VII (SBC, 1995). Although the Basel Ban does not enter into force, yet it is applicable in EU.

2.2.2 The limitations of the Basel convention

Although the Basel convention acts as the principal international instrument regulating the transboundary movement and disposal of hazardous wastes, two major limitations, namely identification of waste and identification of State of Export, undermine its effective application to export of ships for recycling.

1. Identification of Waste

The exact moment when ship becomes waste is important, since it determines whether the Basel convention applies and then determines the various responsible bodies, including State of Export. Under Article 2 of the Basel convention, waste is defined as substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law (BC, 1989, p.16). Since special natures of transboundary movement of ships for recycling are not specified in official documents, ship for recycling is subject to the general definition of waste. Therefore, ships become waste once the intention to dispose is formed. As a result, identification of intention to dispose constitutes the prerequisite for identifying when ship becomes waste.

However, there is considerable ambiguity over practical identification of intention to

dispose. As ships often carry cargo even in last voyage for recycling or change the ownership on the voyage, therefore it is difficult to identify when the intention to dispose is formed. Meanwhile, shipowners often are reluctant to identify their ships as waste in order to evade the transboundary waste legislation. Since ships are able to easily navigate across boundaries, it enables the shipowners to avoid obligations arising from the Basel convention by hiding the intention to dispose until the ships are transferred into the high sea or waters under the jurisdiction of the ship recycling state（Bhattacharjee, 2009, p.214）.

2. Identification of State of Export

State of Export is crucial to effective implementation of control elements estbalished under the Basel convention, such as PIC procedure. However, difficult in identification of waste derives difficult in identification of the State of Export. Under Article 2.10 of the Basel convention, State of Export means a party from which a transboundary movement of hazardous wastes or other wastes is planned to be initiated or is initiated （BC, 1989, p.17）. In case waste refers to ship for recycling, State of Export may be the state where the intention to dispose is formed, and thus it is doutbful whether the port state where ship calls at a final port before heading for the recycling may deem to be State of Export. Meanwhile, based on producer responsiblity principle, the responsibility of the generator of the waste, namely the state of the shipowner, is also worth considering. Once the intention to dispose of ship is formed on high seas and the ship directly navigates towards ship recycling state, this question is even more awkward（Bhattacharjee, 2009, p.215）.

In practice, difficult in identification of the State of Export impedes effective

implementation of PIC procedure and certain export ban. For instance, the European Waste Shipment Regulation prohibits the export of hazardous wastes to non-OECD countries (EC, 2006). Suppose the ban is in force within a member state, but the ship has left its territorial waters and then the intention to dispose is formed outside its territorial waters. Consequently, such export ban becomes a mere scrap of paper.

As discussed above, the two major limitations in the effective implementation of the Basel convention help to bring about a separate mandatory international instrument and thus contribute to the introduction of the Hong Kong Convention.

2.3 The Hong Kong convention

On May 15, 2009, the Hong Kong international convention for the safe and environmentally sound recycling of ships, 2009 (hereinafter the Hong Kong convention) was adopted by the IMO Assembly at the international conference. Under Article 1.1 of the Hong Kong convention, its goal is to prevent adverse effects on human health and the environment generated from ship recycling activities, and enhance ship safety and protection of human health and the environment throughout a ship's operating life (HKC, 2009, p.2).

2.3.1 The development of the Hong Kong convention

In 1998, ship recycling issue was first brought to the IMO at MEPC 42. Since then, it was generally agreed that IMO should play an active role in regulating ship recycling activities. In March 2002, the MEPC 47 agreed on the development of recommendatory guidelines. When it came to July, 2003, the MEPC 49 finalized the IMO Guidelines on Ship Recycling and adopted it by Resolution A.962 (23).

Subsequently, on 1 December 2005 Resolution A.981 (24) on New Legally Binding Instrument on Ship Recycling was adopted by IMO Assembly, requesting the MEPC to develop a mandatory instrument related to ship recycling activities (Mikelis, 2006, p.2).

At MEPC 54, a working group on ship recycling was convened to develop a draft text, and the representatives from the ILO and the Secretariat to the Basel convention were also included in the working group. In October 2008, the MEPC 58 finalized the text of the convention. Finally, the Hong Kong international convention for the safe and environmentally sound recycling of ships was adopted at the diplomatic conference held in Hong Kong, China, from May 11–15, 2009（Chang, Wang & Durak, 2010, p.1391）.

2.3.2 The key elements of the Hong Kong convention

Some key elements of the regulatory mechanism are introduced into the Hong Kong convention, and a review on these key elements would facilitate understanding the control level established under the Hong Kong convention（Bhattacharje, 2009, pp.216-219）.

1. Control over design, construction and operation

With the introduction of new concept, namely from cradle to grave, the Hong Kong convention seeks efficient management of hazardous wastes covering various aspects of the ship's lifespan. Consequently, it regulates the design, construction, operation and preparation of ships in order to reduce the amount of waste and hazards involved in ship recycling and thus facilitate culminating recycling. Under Regulation 4, it

requires parties to prohibit and/or restrict the installation or use of Hazardous Materials listed in Appendix 1 onboard ships that fly their flag, or whilst in their ports, shipyards, ship repair yards, or offshore terminals (HKC, 2009, p.15).

2. Inventory of hazardous materials, survey and certification

Under Regulation 5, every ship is required to develop and maintain an Inventory of Hazardous Materials (IHM), and update it throughout ship's operational life. Meanwhile, the inventory should be subject to verification by the flag state, and every ship has to comply with the survey and certification requirements stipulated by flag state. In addition, new ships are mandated to equip with the inventory from commencement of their operations, while existing ships are given a grace-period of five years (HKC, 2009, p.15). While under Regulation 10 and 11, various surveys throughout different stages of ship recycling are specified in the convention for certification, including initial survey, renewal survey, survey after any change, replacement or significant repair of the structure and final survey (HKC, 2009, pp.19-21).

3. Authorization for ship recycling facilities

Under Article 4.2, it requires parties to ensure that the ship recycling facilities comply with the requirements of the convention. While under Article 6, it requires each party to ensure that ship recycling facilities operating under its jurisdiction are authorized in accordance with the regulations. Subsequently, under Regulation 16 it requires ship recyling facility to be authorized by CA or RO, and the authorization shall include all the required verification documentation.

4. **Notification and reporting obligations**

Under Regulation 23, authorized SRF shall report to the CA any incident, accident, occupational diseases and so forth. Under Regulation 24, shipowners are obliged to inform their states of the intention to ship recycling, and such notification initiates the survey and issuance of the International Ready for Recycling Certificate (IRRC). For ship recycling facility, it should report the intention to receive a ship for recycling and planned start date for recycling to its CA when the ship has acquired the IRRC. While under Regulation 25, a statement of completion is issued by ship recycling facility to report CA and flag state upon completion of ship recycling (HKC, 2009, pp.28-30).

5. Information sharing with the IMO

Under Article 12, it requires parties to submit to the IMO a list of authorized SRF, annual lists of ships that are recycled or deregistered to be recycled, as well as information on violations of the convention and actions taken against ships and SRF, while the dissemination of information relies on IMO (HKC, 2009, p.7).

6. Inspection of ships by port states

Under Article 8, ships in ports and offshore terminals would be inspected by authorized officers. The inspection is normally limited to only verifying that there is a valid ICIHM or IRRC onboard. However, it also introduces the possibility to conduct a detailed inspection when certain circumstances stipulated in the convention occur, for instance, the ship does not carry a valid certificate (HKC, 2009, pp.4-5).

7. Regulatory enforcement and detection of violations

Under Article 9, parties are expected to cooperate in the detection of violations. Meanwhile, investigations on violation of convention would be undertaken at ports, and parties are entitled to warn, detain, dismiss or exclude a ship from their ports as a result of violation. If any sufficient evidence indicates violation of the convention of a SRF, the Party with jurisdiction over it should make an inspection and report its findings. While under Article 10, Parties are required to establish sanctions which is adequate in severity to discourage violations of the convention (HKC, 2009, pp.5-6).

As a result, these key elements constitute the basis of the control and enforcement mechanism established under the Hong Kong convention, and Figure 2 illustrates how the control mechnism established under the Hong Kong convention fucntion.

However, there are practical difficulties in its effective fulfillment. For instance, flag state is envisaged to control ships under their flag by means of issuance of ICIHM and IRRC. Nevertheless, shipowners are able to easily evade this control by changing flag to state with less stringent control on certification, more generally, the Flags of Convenience (FOC) states (Fang & Mejia Jr, 2012, p.93).

In addition, some key elements under the Hong Kong convention establish a low level of control and enforcement and undermine its effective implementation, such as the narrower application scope, absence of duty to re-import and no criminalization of illegal traffic and so forth. These limitations are also relevant to determine equivalence and will be analyzed in detail as below.

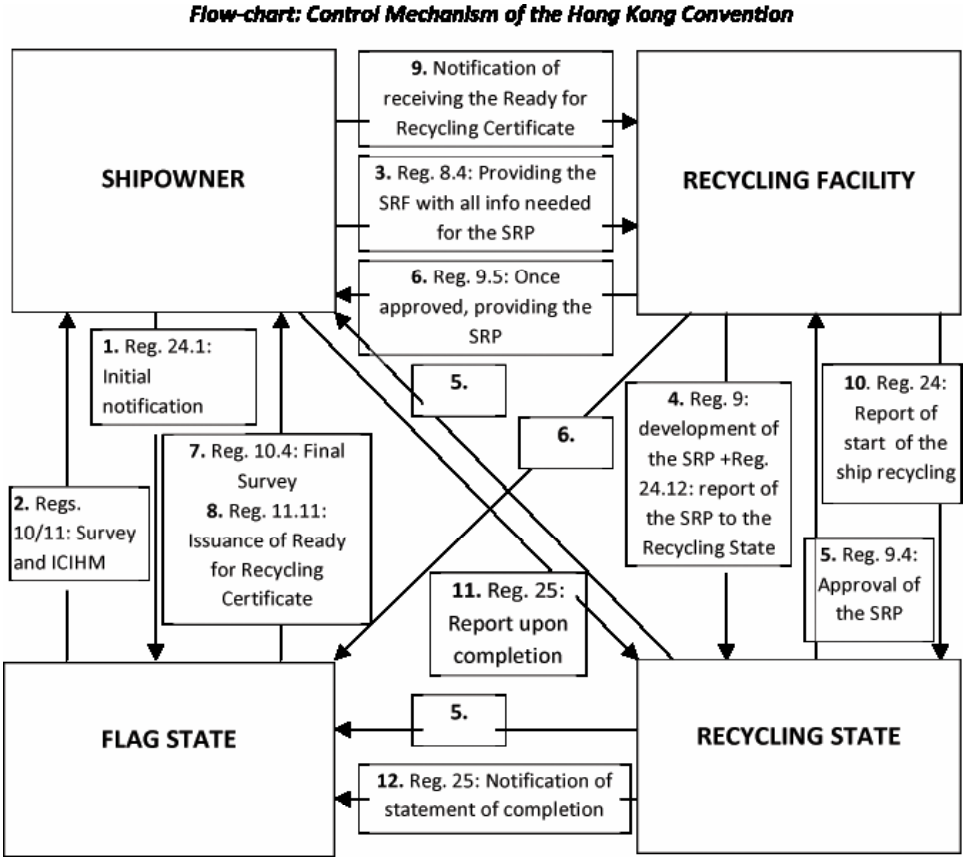

Figure 2 – The control mechanism established under the Hong Kong convention

Source: The Center for International Environmental Law. (2011). *Shipbreaking and the Basel convention: Analysis of the level of control established under the Hong Kong convention*. Retrieved May 10, 2013 from World Wide Web: http://archive.basel.int/ships/oewg-vii12-comments/comments/ciel.doc.

2.4. Conclusion

As stated above, ship recycling industry greatly contributes to the economic development of ship recycling states in South Asia. However, it also gives rise to negative impacts on human health and environment and triggers global concerns. In response to this issue, the Basel convention was developed in 1980s and later adopted in 1989, acting as the principal instrument regulating ship recycling activities. Yet, the Basel convention has limitations on identification of waste and

identification of State of Export. Subsequently, the IMO developed and adopted the Hong Kong convention in 2009, aiming to ensure safe and environmentally sound recycling of ships. The key elements, such as control over design, construction, operation of ships, constitute the basis of the regulatory regime established under the Hong Kong convention. As a result, the duplication of international instruments which both cover ship recycling issues raises the need to confirm the question whether the Hong Kong convention establishes an equivalent level of control as that established under the Basel convention.

Chapter Ⅲ Assessment criteria

By Decision VIII/11, COP to the Basel convention invited IMO to ensure that the draft ship recycling convention establishes an equivalent level of control as that established under the Basel convention (SBC, 2007, p.39). Subsequently, by Decision IX/30 it required OEWG to conduct a preliminary assessment on the equivalence of level of control and enforcement of the Hong Kong convention (SBC, 2008b, p.56). Consequently, the development of the assessment criteria constitutes the basis of preliminary assessment and became a task of top priority.

3.1 The interpretation of Article 11 of the Basel convention

Under Article 11 of the Basel convention, it allows parties to enter bilateral or multilateral agreement regarding transboundary movement of hazardous wastes provided that such agreements or arrangements do not derogate from the ESM of hazardous wastes as required by this convention (BC, 1989, p.33). As a result, it derives the demand for equivalent level of control, and thus a proper interpretation of Article 11 would greatly facilitate understanding equivalent level of control.

Although there are different types of interpretation, it asserts a liberal interpretation on the term of equivalent level under Article 11. The term equivalent indicates that it is not necessary to insist on identical level of control. Consequently, it does not require exact replication of the elements of control provided by Basel convention into the Hong Kong convention, but requires that the net practical effect of the Hong Kong convention should not compromise on ESM of hazardous wastes provided in the Basel convention.

Meanwhile, since it only stipulates the minimum standards under Article 11, the Hong Kong convention need surpass the minimum standards and overcome the limitations identified in the Basel convention for sake of its effective implementation. Moreover, it is submitted that equivalence is not just limited to key elements of control established under the Basel convention, but it should also cover the basic principles of the Basel convention, such as definition of hazardous wastes, prior informed consent procedures and criminalization of illegal traffic, etc (Bhattacharjee, 2009, pp.220-221).

3.2 Development of the assessment criteria

On request, certain states and NGO submitted comments on assessment criteria to Secretariat to the Basel convention. On one hand, the submissions of comments have something in common. For instance, the most common criteria found in the submissions include PIC by ship recycling state, mandatory standards, authorization and certification to ensure ESM of wastes, information sharing, no transboundary movement of wastes between Parties and non-Parties, etc (CIEL, 2011, p.40).

On the other hand, these submissions also have something different. Based on its submission, the EU considered the term equivalent level of control does not stick to an identical level of control, therefore it does not require the ship recycling convention to necessarily incorporate the same control elements as that eatablished under the Basel convention. However, the net result should be the same whatever control elements is applied. As a result, the EU asserts that the measurement for equivalence should be the achievement of the overall objective of the Basel convention, namely protecting human and environment from adverse affects generated from the transboundary movements of hazardous wastes (SBC, 2008a, p.13). When it comes to the NGO

Platform on Shipbreaking, equivalence primarily means replication of fundamental elements, namely scope, fundamental principles, rights of parties and key objectives. Secondly, equivalence means achievement of net practical effect of non-fundamental elements, such as specific obligations and requirements to implement the objectives and principle, even the actual requirements might differ. As a result, it asserted that the measurement for equivalence should be achieved by checking whether the Hong Kong convention replicates or possibly exceeds the fundamental elements and achieves the net practical effect of non-fundamental elements established under the Basel convention (SBC, 2010, pp.14-16).

Based on these submissions, the OEWG came to an agreement on the assessment criteria and documented it in the Annex to Decision OEWG-VII/12 (UNEP/CHW/OEWG/7/21) (see Appendix 1). As elaborated below, the assessment criteria consitutes the basis of following preliminary assessment.

3.3 The limitations of the assessment criteria

Although the assessment criteria developed by OEWG covers the core contents of submission from parties and relevant stakeholders, it still lacks in several aspects. As the Hong Kong convention is regarded as an Article 11 agreement, the assessment criteria should give considerations to the requirements under Article 11 of the Basel convention. While according to its requirements, such agreement should not derogate from ESM of hazardous wastes as required by the Basel convention, and it should stipulate provisions which are not less environmentally sound than that in the Basel convention in particular taking into account interests of developing countries （BC, 1989, p.33）. As a result, those provisions stipulated in the Basel convention which are required to achieve ESM of hazardous wastes and give considerations to the

interests of developing counties should be incorporated into the Hong Kong convention.

Under the Basel convention, it introduces an integrated life-cycle approach which establishes stringent controls from the generation of hazardous wastes to its storage, transport, treatment, reuse, recycling, recovery, and final disposal, aiming to achieve ESM of hazardous wastes (SBC, 2002, p.23). Meanwhile, ESM of hazardous wastes not only requires measures to minimize the generation of waste under Article 4.2 (a) (BC, 1989, p.21), but also measures to minimize and strictly control the transboundary movement of waste under Article 4.2 (d) and 4.9 (BC, 1989, pp.21-23). Moreover, since the Basel convention is adopted in order to respond to improper management of transboundary movement of hazardous wastes to developing countries. Therefore, equivalence means that the Hong Kong convention, which is regarded as Article 11 agreement, need take into account the limited technical and financial capabilities of developing countries to manage hazardous wastes. Consequently, the assessment criteria should give considerations to the coverage to the downstream facilities involved in ship recycling activities, the obligation to minimize transboundary movement of waste and the interests of developing countries (CIEL, 2011, pp.41-43).

3.4 Conclusion

As discussed above, the assessment criteria developed by the EOGW cover the majority of essential elements in the Basel convention which are crucial to the preliminary assessment on equivalence. Nevertheless, the assessment criteria should also give considerations to the coverage to the downstream facilities involved in ship recycling activities, the obligation to minimize the transboundary movement of

hazardous waste and the interests of developing countries, which are derived from the requirements of Article 11.

Chapter Ⅳ Assessment

As requested, a number of party states and relevant stakeholders, namely USA, Japan, IMO, EU, CIEL, NGO platform on shipbreaking, ISRA, submitted their preliminary assessments to the Secretariat of the Basel convention by April 15, 2011. Based on the assessment criteria determined by the OEWG and the submissions of preliminary assessments, this dissertation seeks to achieve a comprehensive assessment on the equivalence of control level of the Hong Kong convention as that established under the Basel convention. As stated above, the assessment criteria also give consideration to the coverage to the downstream facilities, the obligation to minimize the transboundary movement of hazardous waste and the interests of developing countries.

4.1 Scope and Applicability

4.1.1 Coverage of ships/wastes, coverage and identification of hazardous materials

Under Article 2.1 of the Basel convention, any ship that is intended to be disposed may be indentified as waste with regardless of its use or size (BC, 1989, p.16). While under Article 3.2 and 3.3 of the Hong Kong convention, warships/naval auxiliary, government owned non-commercial, ships of less than 500 GT and ships only operating in waters under the jurisdiction of its flag state throughout their life are excluded from its jurisdiction. Although it requires each party to ensure such ships act in a manner consistent with the Hong Kong convention through adoption of appropriate measures, a narrow application scope undermines its effective

implementation (HKC, 2009, p.3).

Meanwhile, the inventory of hazardous materials (see Appendix 2) is introduced into the Hong Kong convention to indicate specific information on hazardous materials onboard and guide the occupational health and environment protection in ship recycling operations. However, the hazardous materials required to be controlled or identified in the inventory of hazardous materials do not cover all hazardous waste identified by the Basel convention. By checking the 2011 Guidelines for the development of the inventory of hazardous materials (IMO, 2011), it can be found that certain hazardous materials identified by the Basel Technical Guidelines as relevant to ship recycling, such as metal wastes and waste consisting of alloys of Antimony, Beryllium and Tellurium, are missing from it (SBC, 2002, p.89). Consequently, the inventory of hazardous materials under the Hong Kong convention fails to offer enough information on hazardous materials onboard.

The Hong Kong convention is regarded as more suitable for ship recycling activities, as it is ship specific instrument in terms of the coverage and identification of hazardous materials (MOE, 2011, p.3). Nevertheless, narrower application scope and insufficient identification on hazardous materials onboard under the Hong Kong convention undermine its control level.

4.1.2 Management of life cycle of the ship

Under the Basel convention, it introduces an integrated life-cycle approach which establishes stringent controls from the generation of hazardous wastes to its storage, transport, treatment, reuse, recycling, recovery, and final disposal, aiming to achieve ESM of hazardous wastes（SBC, 2002, p.23）. Although the Hong Kong convention

also introduces control measures from its design, construction, operation and recycling of ships, namely the concept of from cradle to grave, it is still not enough to ensure ESM of hazardous wastes generated from ship recycling activities. For instance, the Hong Kong convention only covers ships intended to be recycled and SRF, its coverage does not extent to the downstream facilities and their waste management. Although under Regulation 20.4, it requires that the wastes generated from ship recycling activities should only be transferred to authorized waste management facility (HKC, 2009, p.27). However, the standards on authorization of waste management facility are not specified in the Hong Kong convention.

In contrast, wastes transferred to downstream facilities are still under the application scope of the Basel convention. According to the Basel Technical Guidelines, disposal facilities should be designed in consideration of certain design criteria for the sake of minimization of the adverse effect on the environment. For instance, the landfill should be equipped with impermeable bottom-liners, drainage-water discharge and gas-extraction in case of organic materials to be disposed. Furthermore, the location of the landfill should be a permanent (SBC, 2002, pp.69-72).

Although it is argued that the Basel convention does not have detailed requirements though lifecycle of wastes, while the Hong Kong convention has detailed requirements though lifecycle of ships. For instance, it requires ships to maintain and update the Inventory of Hazardous Materials from its origin and during its operation (MOE, 2011,p.4). Actually, the details of the Basel convention on achievement of ESM of ship recycling are laid down in the Basel Technical Guidelines (CIEL, 2011, p.42). Consequently, the Hong Kong convention fails to ensure ESM of wastes in downstream facilities and their waste management. In this sense, it is inferior to the Basel convention.

4.1.3 Relationship between Parties and non-Parties

Under the Basel convention, Parties are not allowed to export or import hazardous wastes from non-Parties except under an Article 11 agreement. Nevertheless, it explicitly requires such an Article 11 agreement should not derogate from the ESM of waste and it should stipulate provisions which are no less environmentally sound (BC,1989, p.33). Under the Hong Kong convention, non-Party ships may be legally transferred and recycled in a Party recycling facility by meeting the requirements of this convention, while Party ships may be able to legally become non-Party ships though flag changing and then be recycled in a non-Party recycling facility (Mikelis, 2010a, pp.31-32).

Compared with the Basel convention, the provisions on relationship between Parties and non-Parties under the Hong Kong convention are not strict enough to ensure non-Party to act in conformity with its standards.

4.1.4 Jurisdiction

Except state of export and state of import, the jurisdiction of the Basel convention also covers the transit states. According to Article 2.13 and 6.1, the transit state does not need to be a party state, but it is still regarded as concerned state and warrants notification. However, as previously stated there are difficult in identification of waste and corresponding difficult in identification of State of Export, it gives rise to a potential absence of jurisdiction pertaining to State of Import or State of Export (USEPA, 2011, p.4).

While under the Article 2.2, 2.3 and 8 of the Hong Kong convention, its jurisdiction only extends to the flag state, any port states which are parties and the ship recycling state. As a result, it does not introduce the concept of transit state other than port state. Although port state is entitled to inspect whether the ship is equipped with ICIHM or IRRC, it does not require explicit consent of port state for the transboundary movement of obsolete ships.

The limitations of the Basel convention may undermine its effective jurisdiction. Nevertheless, its jurisdiction still covers much more than that in the Hong Kong convention.

4.2 Control

The bases of control mechanism in the Basel convention are to minimize the generation and transboundary movement of hazardous wastes, ensure ESM of hazardous waste and strictly observe notification procedure based on PIC, and thus achieve its overall objective. In order to gain the same net effect, an Article 11 agreement is required not to derogate from ESM requirements stipulated in the Basel convention. As the Hong Kong convention is regarded as an Article 11 agreement, equivalence means its control mechanism should meet ESM requirements stipulated in the Basel convention.

4.2.1 Authorizations and certifications, surveying, auditing and inspection

Under the Article 2.5 of the Basel convention, facility for the disposal of hazardous wastes is authorized or permitted to operate for this purpose by a relevant authority of the State, while persons under national jurisdiction of party should be prohibited

from transporting or disposing of hazardous wastes or other wastes unless they are authorized under Article 4.7 (BC, 1989, p.23). While under Article 4.2 of the Hong Kong convention, Party shall require that SRF under its jurisdiction comply with the requirements in the convention, and under Regulation 15.1 Party shall establish legislation, regulations, and standards to ensure that SRF is designed, constructed, and operated in a safe and environmentally sound manner. Subsequently, it requires Party to ensure that SRF under its jurisdiction is authorized in accordance with the regulations in the Annex under Article 6, and Party shall establish a mechanism for authorizing SRF in consideration of guideline developed by IMO under Regulation 15.2 and 16 (HKC, 2009, pp.23-24).

However, since there is not mandatory minimum standard on authorization of facilities in the Hong Kong convention, and thus authorization of facility may be incapable of achieving ESM of hazardous wastes. Specifically, beaching method is commonly used in Asian ship recycling states, and as previously stated it is unable to achieve ESM of hazardous wastes. As the Hong Kong convention fails to specify mandatory minimum standards on authorization of SRF other than voluntary guidelines, SRF which relies on the beaching method may be generously authorized by ship recycling states in South Asia for economic considerations (Fang & Mejia Jr, 2012, p.93). Consequently, its ability to ensure ESM of ship recycling is in doubt.

Meanwhile, flag states under the Hong Kong convention are responsible for issuance of ICIHM and IRRC prior to ship recycling. However, this control on certification is not sufficiently mandatory to ensure the capability of the facilities to recycle ships in environmentally sound manner. In particular, final survey is the basis of issuance of IRRC, while IRRC gives permission to ship recycling. Nevertheless, under Regulation 10.4 the final survey neither expressly requires the SRP to guarantee

ESM of ship recycling, nor requires SRF are capable of recycling a ship in line with environmentally sound manner (HKC, 2009, p.20). Consequently, IRRC based on the final survey is unable to sufficiently guarantee ESM of ship recycling. Moreover, shipowners are able to easily evade this control by changing flag to states with less stringent control on certification, such as FOC states (Fang & Mejia Jr, 2012, p.93). As a result, flag states under the Hong Kong convention are unable to sufficiently guarantee ESM of hazardous waste as required for State of Export under the Basel convention.

Although the detailed requirements on authorization are not prescribed in the Basel convention, it requires the authorization of downstream waste management facilities for the sake of achievement of ESM of hazardous wastes, including transport, interim and final recovery and disposal (NGO, 2011, p.9). While under Article 4.2(e) of the Basel convention, the export of hazardous waste should not be allowed by export state if it is believed that ESM of hazardous material can not be achieved in the import state. In contrast, the requirements on authorization and certification established under the Hong Kong convention do not sufficiently mandate and thus are unable to sufficiently guarantee ESM of ship recycling.

4.2.2 Designation of competent authorities / focal points

Under Article 2 and 5 of the Basel convention, it requires parties to designate CA and one focal point to facilitate the implementation of the convention, and it is responsible for receiving and responding to the notification of a transboundary movement of hazardous wastes. While under Article 2.3 and Regulation 15.4, 24. 2 and 25 of the Hong Kong convention, it also requires parties to designate CA and the single contact point to deal with matters related to ship recycling facilities, and it

shall take responsibility for receiving notification on the planned transboundary movement of hazardous waste from SRF, approving the draft SRP prior to commencement of recycling and notify the administration of flag state on completion of recycling. In this regard, there is no difference between the two conventions.

4.2.3 Standards (mandatory or voluntary)

Both conventions inrroduce voluntary guidelines serving as performance standards.The Hong Kong convention leaves much of the detailed standards to the voluntary guidelines, and thus IMO developed a serial of guidelines to assist its implementation, such as Guidelines for the development of the Inventory of Hazardous Materials and Guidelines for the development of the ship recycling plan, etc. Meanwhile, the Basel Technical Guidelines for the Environmentally Sound Management of the Full and Partial Dismantling of Ships was adopted to ensure ESM of hazardous wastes.

The development of guidelines to support the implementation of the Hong Kong convention is important, but it ignores the recommendation of COP to the Basel convention to establish mandatory requirements to ensure the ESM of ship recycling, which might include pre-decontamination within its scope（SBC, 2005, p.64）, and the duty of pre-cleaning prior to ship recycling is not mandatory in the Hong Kong convention. In contrast, the Basel Technical Guidelines provides certain practices that must be implemented to attain ESM（SBC, 2002, p.7）, including pre-cleaning. Consequently, it substantially mandates pre-cleaning. As a result, the Hong Kong convention fails to mandate certain measures to ensure ESM of ship recycling.

4.2.4 Ability to prohibit import or export

Under Article 4.1 of the Basel convention, Parties are explicitly entitled to prohibit the export or import of hazardous wastes or other wastes for disposal (BC, 1989, p.20). Given the previously stated difficult in identification of waste and subsequent difficult on identification of State of Export, the ability to prohibit import/export of the Basel convention would not apply to a ship until it is identified as waste, and thus its net practical effect is compromised (USEPA, 2011, p.6). While under the Hong Kong convention, flag state may refuse to issue an IRRC and thus prohibit the ship recycling, but they are not able to prohibit export of ship. Similarly, ship recycling state may refuse to approve SRP and thus prohibit ship recycling, but they are not able to prohibit import of ships.

4.2.5 Traceability and transparency of hazardous materials until final treatment / ultimate disposal

Under Article 4.7(c) and 6.9 of the Basel convention, a movement document (see Appendix 3) is introduced to ensure traceability of hazardous materials, and the person who takes charge of transboundary movement of hazardous wastes should sign the movement document upon delivery or receipt. While under the Hong Kong convention, IRRC (see Appendix 4) plays the some role as the movement document, and it contains the particulars of the ship, SRF and IHM, as well as approved SRP. Subsequently, it requires SRF to report the planned start of ship recycling, and the report should include a copy of the Certificate under Regulation 24.3 (HKC, 2009, p.29). By contrast, SRF does not need to sign the Certificate upon receipt of waste under the Hong Kong convention, but the report of planned start of ship recycling functions equivalently with the signature on the movement document under the Basel convention. Nevertheless, hazardous materials may become untraceable under the

Hong Kong convention once transferred out of ship recycling facility for treatment and disposal, and the traceability and transparency is confined to the ship recycling facility (NGO, 2011, p.10).

4.2.6 Prior notification and prior consent

According to Regulation 24 of the Hong Kong convention, it requires shipowners to notify the administration of flag state of the intention to ship recycling, enabling the administration to prepare for survey and certification. Ship recycling facility is required to notify the CA of ship recycling state of the intent to recycle the ship. However, it does not require direct notification between flag state and ship recycling state. Meanwhile, the State of transit or Port State also does not expressly require either notification or consent. Although sometimes the State of transit would act as Port State to inspect whether the ship is equipped with required certificates, it does not require explicit consent of the State of transit or Port State for the transboundary movement of obsolete ships.

Under the Regulation 9.4 of the Hong Kong convention, ship recycling state is allowed to choose either explicit approval or tacit approval of ship recycling plan prior to ship recycling, aiming to ensure that the capabilities of the ship recycling facility match the ships to be recycled. Nevertheless, the inadequacy of tacit approval may undermine the level of control provided by this provision. Ship recycling facilities generally notify ship recycling state the intent after obsolete ship had transferred into the waters under its jurisdiction. Theoretically, ship recycling state is able to exercise its right to refuse access of the ship once its condition is unacceptable. However, without prior notification on the impending entry of the ship, ship recycling state has not enough time and information to achieve an informed

decision and then take appropriate action. Moreover, an obsolete ship may directly beach itself on the coast after its entry into the waters under the jurisdiction of ship recycling state, and then ship recycling may be a *fait accompli*.

While under Article 6 of the Basel convention, it requires State of Export to provide notification (see Appendix 5) of the proposed transboundary movement of hazardous waste in writing to State of import and to any State of transit. The State of Export shall not allow transboundary movement to commence until it has received the explicit written consent of the State of Import and the State of transit (EC, 2011, pp.15-16). Under Article 4.1(c), it requires parties to prohibit the export of hazardous wastes if the State of import does not consent in writing to the specific import. As a result, PIC procedure under the Hong Kong convention is diluted and weaker than that established under the Basel convention.

4.2.7 Certification of disposal / Statement of Completion of ship recycling

Under Regulation 25 of the Hong Kong convention, it requires ship recycling facility to issue a Statement of Completion, and the Statement should include a report on incidents and accidents damaging human health and/or the environment. Meanwhile, the CA is required to send a copy of the Statement to the administration which issued the IRRC for the ship (HKC, 2009, pp.29-30). While under Article 6.9 of the Basel convention, it requires the disposer to inform both the exporter and the CA of the State of export of the completion of disposal (BC, 1989, p.28). In this regard, there is no significant difference between both conventions.

4.2.8 Other control mechanisms

Except regulating the transboundary movement of hazardous waste, the Basel convention also restricts transboundary movement of hazardous waste and it is regarded as the most important control machnism in the Basel convention (NGO, 2011, p.10). Under Article 4.9 of the Basel convention, it requires parties to take appropriate measures to ensure the transboundary movement of hazardous waste only be allowed if the State of Export does not have the technical capacity to recycle in an envrionmentally sound manner and the State of Import has a need for such raw materials (BC, 1989, pp.23-24). Under Article 4.2 (b) and Preamble 8 of the Basel convention, Parties are encouraged to ensure disposal facilities under their jurisdiction are available and dispose of the waste in the state where it was generated as far as is compatible with ESM (CIEL, 2011, p.52).

4.3 Enforcement

4.3.1 Illegal shipments, violations, and sanctioning, including criminalization, of illegal traffic

Under Article 4.3 and 9 of the Basel convention, it criminalizes the illegal traffic of transboundary movement of hazardous wastes. While under Article 10 of the Hong Kong convention, flag state and ship recycling state are provided with enough discretion to establish sanction to respond to violations of requirements relating to ships and ship recycling facility, and such sanctions are required to be adequate in severity to discourage violations (HKC, 2009, p.6). Nevertheless, the sanctions established under the Hong Kong convention are still weaker than criminalization of illegal traffic under the Basel convention.

4.3.2 Dispute settlement

Under Article 20 of the Basel convention, parties are encouraged to seek settlement through negotiations or other peaceful means of their choice. Only the dispute cannot be settled through the aforementioned means, it would be submitted to the International Court of Justice or to arbitration (BC, 1989, p.45). While under Article 14 of the Hong Kong convention, it requires Parties to settle any dispute by negotiation or any other peaceful means, including judicial settlement or resort to regional agencies or arrangements （HKC, 2009, p.8）. There is no significant difference between both conventions regarding this point.

4.3.3 Duty of re-import

Under Article 8 and 9.2 of the Basel convention, the duty of re-import is introduced into the convention and it is applicable under two circumstances. First, transboundary movement of hazardous wastes cannot be completed in accordance with the provisions of the contract while the alternative arrangement cannot be made within given time. Second, transboundary movement of hazardous wastes or other wastes is indentified as illegal traffic (BC, 1989, pp.29-30). While under Article 9.3 of the Hong Kong convention, it allows Party to exclude from its ports a ship which is found to be in violation of the convention, and the flag state shall be immediately notified of the exclusion (HKC, 2009, p.5). Nevertheless, it is still not comparable with the duty of re-import established under the Basel convention, and thus it increases the possibility that ships would be directly abandoned on the beach of ship recycling states.

4.4 Information exchange, cooperation and coordination

4.4.1 Access to and dissemination of information e.g., administrative, enforcement, emergency matters

Under Article 4.2 (f) of the Basel convention, it is the obligations of Parties to provide the concerned states with information about a proposed transboundary movement of waste, and it should specify the effects of such movement on human health and the environment. While under Article 4.2 (h), it is the obligations of parties to cooperate with other parties and interested organizations in dissemination of information about shipment for the sake of ESM of hazardous wastes and prevention of illegal traffic. Under Artice13.2, parties should inform each other any change to the designation of CA, decisions not to consent to the import of waste and decisions to limit or ban the export of waste and so forth.

While under Article 12 of the Hong Kong convention, parties are obliged to report to the IMO while IMO is obligated to disseminate information such as the list of authorized SRF, contact details for the CA and the list of ROs and nominated surveyors and so forth (HKC, 2009, p.7). As a result, there is no significant difference in both conventions which weakens the level of control in terms of Access to and dissemination of information.

4.4.2 Reporting obligations

Under Article 13.3 of the Basel convention, it requires Parties to report annually through the Secretariat to the Basel convention on the amount of hazardous waste exports and imports, disposals which did not proceed as intended, efforts to reduce the amount of hazardous waste, implementation measures and other relevant matters (EC, 2011, p.20). While except reporting obligations stipulated under Article 12 of

the Hong Kong convention, Parties are obliged to report to IMO and other Parties the basis of their decision on authorization of SRF on request under Article 7. In this regard, there is no significant difference between the two conventions.

4.4.3 Transmission of information regarding import/export restrictions

Under Article 4.1 (a) and Article 13.2 of the Basel convention, Parties are allowed to exercise their right to prohibit the import of hazardous wastes or other wastes for disposal, and parties must inform the Basel Secretariat of the restrictions. There is no similar requirement in the Hong Kong convention.

4.4.4 Among Parties to advance ESM through information exchange and technical assistance and capacity building on best practices, technical guidelines, monitoring and public awareness

Under Article 10 of the Basel convention, it requires Parties to cooperate with each other in order to improve and achieve ESM of hazardous wastes. As required, Parties should cooperate in making available information, monitoring environmental and health effects, developing and implementing technologies, transferring technology and management systems and developing appropriate technical guidelines (BC, 1989, pp.31-32). While under Article 13 of the Hong Kong convention, it requires Parties to provide support for other Parties on training personnel, ensuring the availability of relevant technology, equipment and facilities, initiating joint research and development programmes and undertaking other actions for the sake of effective implementation of the convention. Meanwhile, it also requires parties to cooperate in the transfer of management systems and technology (HKC, 2009, p.7).

As a result, both of two conventions require cooperation to enhance ESM of hazardous wastes. In this sense, the control level established under the two conventions is substantially equivalent.

4.5 Consideration of interests of developing countries

Under the Basel convention, the consideration of interests of developing countries is mandated by Article 11, and certain provisions reflect this concern. For instance, under Article 14 Parties agree on the establishment of centers for training and technology transfer and funding mechanism for countries lacking in funds or capacity, while under Article 4.2 (e) it prohibits the export of hazardous wastes to developing countries if it is believed that the wastes will not be managed in an environmentally sound manner. By contrast, the obligations to ensure ESM of ship recycling under the Hong Kong convention are largely shifted to ship recycling states, while there is no provision on a ship recycling fund or other financing mechanism to upgrade their ship recycling facilities for the sake of compliance with various requirements. As the major ship recycling states worldwide, India, Pakistan, Bangladesh, are developing countries, therefore ship recycling fund is essential for effective implementation of the Hong Kong convention. Yet, such funding is missing from the Hong Kong convention.

Moreover, the duty of pre-cleaning on shipowners is not mandated under the Hong Kong convention. Under Regulation 8 of the Hong Kong convention, it just simply requires minimization of the amount of cargo residues, remaining fuel oil, and wastes remaining on board prior to entering ship recycling facility. As a result, it disregards the lack of capable ship recycling facility in the major ship recycling states. By contrast, under Article 4.8 of the Basel convention, it requires that exported hazardous

wastes are managed in envrionmentally sound manner in state of import. Under Article 4.2(e)，if it is believed that hazadrous wastes will not be managed in environmentally sound manner, export to such a state, particularly developing countries, is prohibited. Meanwhile, under Article 4.2(c) it requires persons involved in the management of hazardous wastes to take necessary measures to prevent pollution arising from such management.

As a result, absence of provisions on providing ship recycling funding and duty of pre-cleaning on shipowners bring the major ship recycling states, as well as developing countries, heavy burden on effective implementation of the Hong Kong convention.

4.6 Conclusion

As discussed above, the Hong Kong convention fails in several aspects. Specifically, its scope and applicability are restricted; its requirements on authorization and certification do not sufficientlly mandate to ensure ESM of ship recycling; its PIC peocedure is diluted and weaker; it does not criminalize illegal traffic of hazardous waste; it does not stipulate provision on duty to re-import illegally transferred waste; it does not stipulate provision on minimization of transboundary movement of waste; it does not give consideration to interests of developing countires. As these control elements are essential to achieve the overall objective of the Hong Kong convention, therefore it can be concluded that the Hong Kong convention fails to establish an equivalent level of control as that established under the Basel convention.

Chapter Ⅴ Conclusion

Ship recycling industry greatly contributes to the national economic development in India, Bangladesh and Pakistan. However, it also leads to significant adverse effects on human health and environment. As beaching method is commonly used in aforementioned major ship recycling states, it finally leads to severe pollution, occupational disease and death. In particular, ship recycling industry in South Asia relies on beaching method and thus releases hazardous wastes such as asbestos, PCBs, heavy metals and so forth. Subsequently, these hazardous wastes originating from ship recycling activities transfer across boundary and trigger global concern. Consequently, responsible international institutes, such as ILO, IMO and Parties to the Basel convention, start to act for a change.

As a result, IMO adopted the Hong Kong convention to address the global concerns arising from ship recycling activities in 2009. The new Hong Kong convention introduces several control elements to try to reduce the adverse affects of ship recycling activities on human health and environment. For instance, it requires control over design, construction and operation of ships and introduces the inventory of hazardous materials onboard. As ships may be identified as waste and then subject to the Basel convention, therefore the co-existence of international instruments regulating ship recycling issues raises the need to avoid duplication.

From June 2008, by Decision IX/30 the Parties to the Basel convention prepared to consider whether the Hong Kong convention establishes equivalent level of control as that established under the Basel convention. Based on Article 11, Parties to the Basel convention may enter into other agreements regulating transboundary movement of

hazardous waste, and thus it derives the doctrine of equivalent level of control. By May 2010, the OEWG developed the assessment criteria on equivalence. By April 2011, certain party states and statkeholders, such as USA, Japan, IMO, EU, CIEL, NGO platform on shipbreaking, International Ship Recycling Association, submitted their preliminary assessment. This paper is based on the assessment criteria articulated by OEWG and the previous submissions.

As a result, it is found that the Hong Kong convention fails in several aspects. Specifically, its scope and applicability are restricted; its requirements on authorization and certification do not sufficientlly mandate to ensure ESM of ship recycling; its PIC procedure is diluted and weaker than that in the Basel convention; illegal traffic of hazardous wastes is not indentified as criminalization; the duty to re-import illegally transferred waste is missing; it has not provision on minimization of transboundary movement of waste; it does not give consideration to interests of developing countires. In consideration of the above limitations, the Hong Kong convention is unable to achieve its overall objective. Subsequently, it can be concluded that the Hong Kong convention fails to establish an equivalent level of control and enforcement as that established under the Basel convention.

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Appendix 1: Assessment criteria proposed by OEWG

Annex to decision OEWG-VII/12*

Overarching considerations to be taken into account:

- Special characteristics of ships and international shipping
- Principles of the Basel Convention, including environmentally sound management, and the relevant decisions of the Conference of the Parties

* The columns entitled "Basel Convention" and "Hong Kong Convention" list potentially relevant articles, regulations and decisions which are not exhaustive and subject to further verification.

Criteria		**Basel Convention**	**Hong Kong Convention**	**Comments to facilitate a preliminary assessment of equivalent level of control and enforcement**[1]
Scope and applicability				
What?	Coverage of ships / wastes	Wastes: Articles 2.1 (definition of "wastes"), [1.1 (definition of "hazardous wastes")], [2.3 (definition of "transboundary movement")] [Article 11 agreements] [Article 18] Ships: [Article 2.1] [Article 4.12] Decision VII/26: "a ship may become waste as defined in article 2 of the Basel Convention and that at the same time it may be defined as a ship under other international rules"	Ships: Article 2.7 (Definition of "ship") Article 3 (Application) [Article 236 (UNCLOS)] Wastes: Article 2.9 (definition of "hazardous material") [Regulation 4, Appendix 1 and 2 Regulations 5, [6 , 7] 8.2, 20 (20.3 and 20.4) Appendix 1 of Inventory Guidelines]	[The Basel Convention does not exempt military or other State-owned waste – including ships – from its scope. [With the exception of certain categories of ships, the scope of the HK Convention in respect of the recycling of ships and associated wastes is at least equivalent to the scope of coverage provided by the Basel Convention.] 1. Some ships are not covered by the HK Convention: (a) Less than 500 GT or ships operating throughout their life only in waters subject to the sovereignty or jurisdiction of the State whose flag the ship is entitled to fly; (b) Warships, naval auxiliary, or other ships owned or operated by a Party and used, for the time being, only for government non-commercial service;

[1] An incomplete example is provided for the first criterion, "Scope and applicability".

Criteria		Basel Convention	Hong Kong Convention	Comments to facilitate a preliminary assessment of equivalent level of control and enforcement[1]
				(c) [Ships which fly the flag of a non-Party and which do not satisfy the technical requirements of the Convention.] However, each Party shall ensure, by the adoption of appropriate measures, that such ships act in a manner consistent with this Convention, so far as is reasonable and practicable. 2. While a ship may become waste under the Basel Convention, ship recycling will not necessarily involve the transboundary movement of hazardous waste [and therefore may not be subject to the full requirements of the Basel Convention: (a) The decision to recycle may occur while the ship is on the high seas; (b) The ship may be recycled domestically (noting that the HK Convention would apply unless the ship had never travelled internationally); (c) The transboundary movement of the ship may be complete before the ship becomes waste.] Exclusions from HKC: Military and government ships / 500 GT / [national definitions are explicitly recognized in Basel but not IMO] / HKC does not define waste / HKC does not consider a ship to be waste Not yet completed.]
	Coverage and identification of hazardous materials	[Article 1 (excerpt): "1. The following wastes that are subject to transboundary movement shall be "hazardous wastes" for the purposes of this Convention: (a)Wastes that belong to any category contained in Annex I, unless they do not possess any of the characteristics	[Article 2.9 Regulation 4 on Control of ships' Hazardous Materials. Regulation 5 on Inventory of Hazardous Materials. Regulation 6 on Procedure for proposing amendments to Appendices 1 and 2.	

Criteria		Basel Convention	Hong Kong Convention	Comments to facilitate a preliminary assessment of equivalent level of control and enforcement[1]
		contained in Annex III; and (b)Wastes that are not covered under paragraph (a) but are defined as, or are considered to be, hazardous wastes by the domestic legislation of the Party of export, import or transit." Annex I: Categories of wastes to be controlled Annex III: List of hazardous characteristics Annex VIII (List A): Wastes which are characterized as hazardous under Article 1.1 (a) (conditions attached). Annex IX (List B): Wastes which are not covered by Article 1.1 (a) (conditions attached).]	Regulation 7 on Technical Groups. Regulation 8 on General Requirements (Preparation for Ship Recycling). Regulation 9 on the Ship Recycling Plan. Regulation 10 on Surveys. Regulations 20.2 and 20.3 Appendix 1: Controls of Hazardous Materials. Appendix 2: Minimum list of items for the Inventory of Hazardous Materials. Appendix 5: Form for the Authorization of Ship Recycling Facilities. Appendix 1 of Inventory Guidelines]	
When?	**Management of life cycle of ship?**	Article 1.4 Article 2.1 Decision VII/26 "a ship may become waste as defined in article 2 of the Basel Convention and that at the same time it may be defined as a ship under other international rules" Article 4.2 (a) [Article 4.2 (b), 4.2 (c)] [Article 4.8]	Articles 4.1,4.2 Article 2.10 Regulation 4 Regulation 5 on Inventory of Hazardous Materials. Regulation 6 on Procedure for proposing amendments to Appendices 1 and 2. Regulation 7 on Technical Groups. Regulation 8 on General Requirements (Preparation for Ship Recycling). Regulation 9 on the Ship Recycling Plan. Regulation 10 on Surveys. Regulation 11 on Issuance and endorsement of certificates. Regulation 20 on Safe and	

Criteria		Basel Convention	Hong Kong Convention	Comments to facilitate a preliminary assessment of equivalent level of control and enforcement[1]
			environmentally sound management of Hazardous Materials. Appendix 1: Controls of Hazardous Materials. Appendix 5: Form for the Authorization of Ship Recycling Facilities Appendix 6: Form of report of Planned start of ship recycling Appendix 7: Form of Statement of completion of ship recycling	
Who?	**Relationship between Party and non-Party**			
Where?	**Jurisdiction**			
Control				
	Authorizations and certifications			
	Surveying, auditing and inspection			
	Designation of competent authorities/focal points			
	Standards (mandatory or voluntary)			

Criteria		Basel Convention	Hong Kong Convention	Comments to facilitate a preliminary assessment of equivalent level of control and enforcement[1]
	Ability to prohibit import/export			
	Traceability and transparency of hazardous materials until final treatment / ultimate disposal			
	Prior notification and prior consent			
	Certification of disposal/statement of completion of ship recycling			
	[Other control mechanisms]			
Enforcement				
	Illegal shipments, violations and sanctioning, including criminalization, of illegal traffic			
	Dispute settlement			
	Duty to re-import			

Criteria		Basel Convention	Hong Kong Convention	Comments to facilitate a preliminary assessment of equivalent level of control and enforcement[1]
Exchange of information by Parties / cooperation and coordination				
	Access to and dissemination of information, e.g., administrative, enforcement, emergency matters			
	Reporting obligations			
	Transmission of information regarding import / export restrictions			
	Among Parties to advance environmentally sound management, through information exchange and technical assistance and capacity-building on best practices, technical guidelines, monitoring and public awareness			

Appendix 2: Form of the International Certificate on Inventory of Hazardous Materials

INTERNATIONAL CERTIFICATE ON INVENTORY OF HAZARDOUS MATERIALS

(Note: This certificate shall be supplemented by Part I of the Inventory of Hazardous Materials)

(Official seal) *(State)*

Issued under the provisions of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of

.....

(*Full designation of the country*)

by.....

(*Full designation of the person or organization authorized under the provisions of the Convention*)

Particulars of the Ship

Name of Ship	
Distinctive number or letters	
Port of Registry	
Gross tonnage	
IMO number	
Name and address of shipowner	
IMO registered owner	
identification number	
IMO company identification number	
Date of Construction	

Particulars of Part I of the Inventory of Hazardous Materials

Part I of the Inventory of Hazardous Materials identification/verification number: .....

Note: Part I of the Inventory of Hazardous Materials, as required by regulation 5 of the Annex to the Convention, is an essential part of the International Certificate on Inventory of Hazardous Materials and must always accompany the International Certificate on Inventory of Hazardous Materials. Part I of the Inventory of Hazardous Materials should be compiled on the basis of the standard format shown in the guidelines developed by the Organization.

THIS IS TO CERTIFY:

1. that the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention; and
2. that the survey shows that Part I of the Inventory of Hazardous Materials fully complies with the applicable requirements of the Convention.

Completion date of survey on which this certificate is based: ..... (dd/mm/yyyy)

This certificate is valid until ..... (dd/mm/yyyy)

Issued at .....

(*Place of issue of certificate*)

(dd/mm/yyyy) ....

(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

(*Seal or stamp of the authority, as appropriate*)

ENDORSEMENT TO EXTEND THE CERTIFICATE IF VALID FOR LESS THAN FIVE YEARS WHERE REGULATION 11.6 APPLIES∗

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 11.6 of the Annex to the Convention, be accepted as valid until
(dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place:

Date: (dd/mm/yyyy)

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT WHERE THE RENEWAL SURVEY HAS BEEN COMPLETED AND REGULATION 11.7 APPLIES∗

The ship complies with the relevant provisions of the Convention, and this certificate shall, in accordance with regulation 11.7 of the Annex to the Convention, be accepted as valid until
(dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy).....

(Seal or stamp of the authority, as appropriate)

∗ This page of the endorsement at survey shall be reproduced and added to the certificate as considered necessary by the Administration.

ENDORSEMENT TO EXTEND THE VALIDITY OF THE CERTIFICATE UNTIL REACHING THE PORT OF SURVEY OR FOR A PERIOD OF GRACE WHERE REGULATION 11.8 OR 11.9 APPLIES*

This certificate shall, in accordance with regulation 11.8 or 11.9** of the Annex to the Convention, be accepted as valid until (dd/mm/yyyy): .....

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

ENDORSEMENT FOR ADDITIONAL SURVEY*

At an additional survey in accordance with regulation 10 of the Annex to the Convention, the ship was found to comply with the relevant provisions of the Convention.

Signed: .....

(Signature of duly authorized official)

Place: .....

Date: (dd/mm/yyyy) .....

(Seal or stamp of the authority, as appropriate)

* This page of the endorsement at survey shall be reproduced and added to the certificate as considered necessary by the Administration.

** Delete as appropriate.

Appendix 3: Movement document for transboundary movements/shipments of waste

1. Corresponding to notification No:		**2. Serial/total number of shipments:** /
3. Exporter - notifier Registration No: Name: Address: Contact person: Tel: Fax: E-mail:		**4. Importer - consignee** Registration No: Name: Address: Contact person: Tel: Fax: E-mail:
5. Actual quantity: Tonnes (Mg): m^3:		**6. Actual date of shipment:**
7. Packaging Type(s) *(1)*: Number of packages: **Special handling requirements:** *(2)* Yes: ☐ No: ☐		
8.(a) 1st Carrier *(3)*: Registration No: Name: Address: Tel: Fax: E-mail:	**8.(b) 2nd Carrier:** Registration No: Name: Address: Tel: Fax: E-mail:	**8.(c) Last Carrier:** Registration No: Name: Address: Tel: Fax: E-mail:
- - - - - - - To be completed by carrier's representative - - - - - - -		*More than 3 carriers (2)* ☐
Means of transport *(1)*: Date of transfer: Signature:	Means of transport *(1)*: Date of transfer: Signature:	Means of transport *(1)*: Date of transfer: Signature:
9. Waste generator(s) - producer(s) *(4;5;6)*: Registration No: Name: Address: Contact person: Tel: Fax: E-mail: Site of generation *(2)*:		**12. Designation and composition of the waste** *(2)*:
		13.Physical characteristics *(1)*:
10. Disposal facility ☐ **or recovery facility** ☐ Registration No: Name: Address: Contact person: Tel: Fax: E-mail: Actual site of disposal/recovery *(2)*		**14.Waste identification** *(fill in relevant codes)* (i) Basel Annex VIII (or IX if applicable): (ii) OECD code (if different from (i)): (iii) EC list of wastes: (iv) National code in country of export: (v) National code in country of import: (vi) Other (specify): (vii) Y-code: (viii) H-code *(1)*: (ix) UN class *(1)*: (x) UN Number: (xi) UN Shipping name: (xii) Customs code(s) (HS):
11. Disposal/recovery operation(s) D-code / R-code *(1)*:		
15. Exporter's - notifier's / generator's - producer's *(4)* **declaration:** I certify that the above information is complete and correct to my best knowledge. I also certify that legally enforceable written contractual obligations have been entered into, that any applicable insurance or other financial guarantee is in force covering the transboundary movement and that all necessary consents have been received from the competent authorities of the countries concerned. Name: Date: Signature:		
16. For use by any person involved in the transboundary movement in case additional information is required		
17. Shipment received by importer - consignee (if not facility): Date: Name: Signature:		
TO BE COMPLETED BY DISPOSAL / RECOVERY FACILITY		
18. Shipment received at disposal facility ☐ **or recovery facility** ☐ Date of reception: Accepted: ☐ Rejected*: ☐ Quantity received: Tonnes (Mg): m^3: **immediately contact competent authorities* Approximate date of disposal/recovery: Disposal/recovery operation (1): Name: Date: Signature:		**19. I certify that the disposal/recovery of the waste described above has been completed.** Name: Date: Signature and stamp:

(1) See list of abbreviations and codes on the next page
(2) Attach details if necessary
(3) If more than 3 carriers, attach information as required in blocks 8 (a,b,c).
(4) Required by the Basel Convention
(5) Attach list if more than one
(6) If required by national legislation

FOR USE BY CUSTOMS OFFICES (if required by national legislation)	
20. Country of export - dispatch or customs office of exit The waste described in this movement document left the country on: Signature: Stamp:	**21. Country of import - destination or customs office of entry** The waste described in this movement document entered the country on: Signature: Stamp:

22. Stamps of customs offices of transit countries			
Name of country: Entry:	Exit:	Name of country: Entry:	Exit:
Name of country: Entry:	Exit:	Name of country: Entry:	Exit:

List of Abbreviations and Codes Used in the Movement Document

DISPOSAL OPERATIONS (block 11)

- D1 Deposit into or onto land, (e.g., landfill, etc.)
- D2 Land treatment, (e.g. biodegradation of liquid or sludgy discards in soils, etc.)
- D3 Deep injection, (e.g., injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)
- D4 Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)
- D5 Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment), etc.
- D6 Release into a water body except seas/oceans
- D7 Release into seas/oceans including sea-bed insertion
- D8 Biological treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any of the operations in this list
- D9 Physico-chemical treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any of the operations in this list (e.g., evaporation, drying, calcination, etc.)
- D10 Incineration on land
- D11 Incineration at sea
- D12 Permanent storage, (e.g., emplacement of containers in a mine, etc.)
- D13 Blending or mixing prior to submission to any of the operations in this list
- D14 Repackaging prior to submission to any of the operations in this list
- D15 Storage pending any of the operations in this list

RECOVERY OPERATIONS (block 11)

- R1 Use as a fuel (other than in direct incineration) or other means to generate energy (Basel/OECD) - Use principally as a fuel or other means to generate energy (EU)
- R2 Solvent reclamation/regeneration
- R3 Recycling/reclamation of organic substances which are not used as solvents
- R4 Recycling/reclamation of metals and metal compounds
- R5 Recycling/reclamation of other inorganic materials
- R6 Regeneration of acids or bases
- R7 Recovery of components used for pollution abatement
- R8 Recovery of components from catalysts
- R9 Used oil re-refining or other reuses of previously used oil
- R10 Land treatment resulting in benefit to agriculture or ecological improvement
- R11 Uses of residual materials obtained from any of the operations numbered R1-R10
- R12 Exchange of wastes for submission to any of the operations numbered R1-R11
- R13 Accumulation of material intended for any operation in this list

PACKAGING TYPES (block 7)

1. Drum
2. Wooden barrel
3. Jerrican
4. Box
5. Bag
6. Composite packaging
7. Pressure receptacle
8. Bulk
9. Other (specify)

MEANS OF TRANSPORT (block 8)

R = Road
A = Air
T = Train/rail
W = Inland waterways
S = Sea

PHYSICAL CHARACTERISTICS (block 13)

1. Powdery / powder
2. Solid
3. Viscous / paste
4. Sludgy
5. Liquid
6. Gaseous
7. Other (specify)

H-CODE AND UN CLASS (block 14)

UN class	H-code	Characteristics
1	H1	Explosive
3	H3	Flammable liquids
4.1	H4.1	Flammable solids
4.2	H4.2	Substances or wastes liable to spontaneous combustion
4.3	H4.3	Substances or wastes which, in contact with water, emit flammable gases
5.1	H5.1	Oxidizing
5.2	H5.2	Organic peroxides
6.1	H6.1	Poisonous (acute)
6.2	H6.2	Infectious substances
8	H8	Corrosives
9	H10	Liberation of toxic gases in contact with air or water
9	H11	Toxic (delayed or chronic)
9	H12	Ecotoxic
9	H13	Capable, by any means, after disposal of yielding another material, e. g., leachate, which possesses any of the characteristics listed above

Further information, in particular related to waste identification (block 14), i.e. on Basel Annexes VIII and IX codes, OECD codes and Y-codes, can be found in a Guidance/Instruction Manual available from the OECD and the Secretariat of the Basel Convention

Appendix 4: Form of the International Ready for Recycling Certificate

INTERNATIONAL READY FOR RECYCLING CERTIFICATE

(Note: This certificate shall be supplemented by the Inventory of Hazardous Materials and the Ship Recycling Plan)

(Official seal) *(State)*

Issued under the provisions of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (hereinafter referred to as "the Convention") under the authority of the Government of

.....

(*Full designation of the country*)

by .....

(*Full designation of the person or organization authorized under the provisions of the Convention*)

Particulars of the Ship

Name of Ship	
Distinctive number or letters	
Port of Registry	
Gross tonnage	
IMO number	
Name and address of shipowner	
IMO registered owner identification number	
IMO company identification number	
Date of Construction	

Particulars of the Ship Recycling Facility(ies)

Name of Ship Recycling Facility	
Distinctive Recycling Company identity number*	
Full address	
Date of expiry of DASR	

* This number is based on the Document of Authorization to conduct Ship Recycling (DASR).

Particulars of the Inventory of Hazardous Materials

Inventory of Hazardous Materials identification/verification number: .....

Note: The Inventory of Hazardous Materials, as required by regulation 5 of the Annex to the Convention, is an essential part of the International Ready for Recycling Certificate and must always accompany the International Ready for Recycling Certificate. The Inventory of Hazardous Materials should be compiled on the basis of the standard format shown in the guidelines developed by the Organization.

Particulars of the Ship Recycling Plan

Ship Recycling Plan identification/verification number: .....

Note: The Ship Recycling Plan, as required by regulation 9 of the Annex to the Convention, is an essential part of the International Ready for Recycling Certificate and must always accompany the International Ready for Recycling Certificate.

THIS IS TO CERTIFY:

1 that the ship has been surveyed in accordance with regulation 10 of the Annex to the Convention;

2 that the ship has a valid Inventory of Hazardous Materials in accordance with regulation 5 of the Annex to the Convention;

3 that the Ship Recycling Plan, as required by regulation 9, properly reflects the information contained in the Inventory of Hazardous Materials as required by regulation 5.4 and contains information concerning the establishment, maintenance and monitoring of Safe-for-entry and Safe-for-hot work conditions; and

4 that the Ship Recycling Facility(ies) where this ship is to be recycled holds a valid authorization in accordance with the Convention.

This certificate is valid until (dd/mm/yyyy) .....

(Date)

Issued at .....

(*Place of issue of certificate*)

(dd/mm/yyyy) ....

(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

(*Seal or stamp of the authority, as appropriate*)

Appendix 5 ： Notification document for transboundary movements/shipments of waste

1. Exporter - notifier Registration No:
Name:
Address:

Contact person:
Tel: Fax:
E-mail:

2. Importer - consignee Registration No:
Name:
Address:

Contact person:
Tel: Fax:
E-mail:

8. Intended carrier(s) Registration No:
Name*(7)*:
Address:

Contact person:
Tel: Fax:
E-mail:
Means of transport *(5)*:

9. Waste generator(s) - producer(s) *(1;7;8)* Registration No:
Name:
Address:

Contact person:
Tel: Fax:
E-mail:
Site and process of generation *(6)*

10. Disposal facility *(2)*: ☐ **or recovery facility** *(2)*: ☐
Registration No:
Name:
Address:

Contact person:
Tel: Fax:
E-mail:
Actual site of disposal/recovery:

3. Notification No:
Notification concerning
A.(i) Individual shipment: ☐ (ii) Multiple shipments: ☐
B.(i) Disposal *(1)*: ☐ (ii) Recovery : ☐
C. Pre-consented recovery facility *(2;3)* Yes ☐ No ☐

4. Total intended number of shipments:

5. Total intended quantity *(4)*:
Tonnes (Mg):
m^3:

6. Intended period of time for shipment(s) *(4)*:
First departure: Last departure:

7. Packaging type(s) *(5)*:
Special handling requirements *(6):* Yes: ☐ No: ☐

11. Disposal / recovery operation(s) *(2)*
D-code / R-code *(5)*:
Technology employed *(6)*:

Reason for export *(1;6)*:

12. Designation and composition of the waste *(6)*:

13. Physical characteristics *(5)*:

14. Waste identification *(fill in relevant codes)*
(i) Basel Annex VIII (or IX if applicable):
(ii) OECD code (if different from (i)):
(iii) EC list of wastes:
(iv) National code in country of export:
(v) National code in country of import:
(vi) Other (specify):
(vii) Y-code:
(viii) H-code *(5):*
(ix) UN class *(5):*
(x) UN Number:
(xi) UN Shipping name:
(xii) Customs code(s) (HS):

15. (a) Countries/States concerned, (b) Code no. of competent authorities where applicable, (c) Specific points of exit or entry (border crossing or port)

State of export - dispatch	State(s) of transit (entry and exit)						State of import - destination
(a)							
(b)							
(c)							

16.Customs offices of entry and/or exit and/or export (European Community):
Entry: Exit: Export:

17. Exporter's - notifier's / generator's - producer's *(1)* **declaration**:
I certify that the information is complete and correct to my best knowledge. I also certify that legally enforceable written contractual obligations have been entered into and that any applicable insurance or other financial guarantee is or shall be in force covering the transboundary movement.
Exporter's - notifier's name: Date: Signature:
Generator's - producer's name: Date: Signature:

18. Number of annexes attached

FOR USE BY COMPETENT AUTHORITIES

19. Acknowledgement from the relevant competent authority of countries of import - destination / transit *(1)* **/ export - dispatch** *(9)*:
Country:
Notification received on:
Acknowledgement sent on:
Name of competent authority:
Stamp and/or signature:

20. Written consent *(1;8)* **to the movement provided by the competent authority of** (country):
Consent given on:
Consent valid from: until:
Specific conditions: No: ☐ If Yes, see block 21 *(6):* ☐
Name of competent authority:
Stamp and/or signature:

21. Specific conditions on consenting to the movement document or reasons for objecting

(1) Required by the Basel Convention
(2) In the case of an R12/R13 or D13-D15 operation, also attach corresponding information on any subsequent R12/R13 or D13-D15 facilities and on the subsequent R1-R11 or D1-D12 facilit(y)ies when required
(3) To be completed for movements within the OECD area and only if B(ii) applies
(4) Attach detailed list if multiple shipments
(5) See list of abbreviations and codes on the next page
(6) Attach details if necessary
(7) Attach list if more than one
(8) If required by national legislation
(9) If applicable under the OECD Decision

List of abbreviations and codes used in the notification document

DISPOSAL OPERATIONS (block 11)

D1 Deposit into or onto land, (e.g., landfill, etc.)
D2 Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.)
D3 Deep injection, (e.g., injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)
D4 Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)
D5 Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
D6 Release into a water body except seas/oceans
D7 Release into seas/oceans including sea-bed insertion
D8 Biological treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any of the operations in this list
D9 Physico-chemical treatment not specified elsewhere in this list which results in final compounds or mixtures which are discarded by means of any of the operations in this list (e.g., evaporation, drying, calcination, etc.)
D10 Incineration on land
D11 Incineration at sea
D12 Permanent storage, (e.g., emplacement of containers in a mine, etc.)
D13 Blending or mixing prior to submission to any of the operations in this list
D14 Repackaging prior to submission to any of the operations in this list
D15 Storage pending any of the operations in this list

RECOVERY OPERATIONS (block 11)

R1 Use as a fuel (other than in direct incineration) or other means to generate energy (Basel/OECD) - Use principally as a fuel or other means to generate energy (EU)
R2 Solvent reclamation/regeneration
R3 Recycling/reclamation of organic substances which are not used as solvents
R4 Recycling/reclamation of metals and metal compounds
R5 Recycling/reclamation of other inorganic materials
R6 Regeneration of acids or bases
R7 Recovery of components used for pollution abatement
R8 Recovery of components from catalysts
R9 Used oil re-refining or other reuses of previously used oil
R10 Land treatment resulting in benefit to agriculture or ecological improvement
R11 Uses of residual materials obtained from any of the operations numbered R1-R10
R12 Exchange of wastes for submission to any of the operations numbered R1-R11
R13 Accumulation of material intended for any operation in this list.

PACKAGING TYPES (block 7)

1. Drum
2. Wooden barrel
3. Jerrican
4. Box
5. Bag
6. Composite packaging
7. Pressure receptacle
8. Bulk
9. Other (specify)

MEANS OF TRANSPORT (block 8)

R = Road
T = Train/rail
S = Sea
A = Air
W = Inland waterways

PHYSICAL CHARACTERISTICS (block 13)

1. Powdery/powder
2. Solid
3. Viscous/paste
4. Sludgy
5. Liquid
6. Gaseous
7. Other (specify)

H-CODE AND UN CLASS (block 14)

UN Class	H-code	Characteristics
1	H1	Explosive
3	H3	Flammable liquids
4.1	H4.1	Flammable solids
4.2	H4.2	Substances or wastes liable to spontaneous combustion
4.3	H4.3	Substances or wastes which, in contact with water, emit flammable gases
5.1	H5.1	Oxidizing
5.2	H5.2	Organic peroxides
6.1	H6.1	Poisonous (acute)
6.2	H6.2	Infectious substances
8	H8	Corrosives
9	H10	Liberation of toxic gases in contact with air or water
9	H11	Toxic (delayed or chronic)
9	H12	Ecotoxic
9	H13	Capable, by any means, after disposal of yielding another material, e. g., leachate, which possesses any of the characteristics listed above

Further information, in particular related to waste identification (block 14), i.e. on Basel Annexes VIII and IX codes, OECD codes and Y-codes, can be found in a Guidance/Instruction Manual available from the OECD and the Secretariat of the Basel Convention.