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Joint Working Party on Trade and Environment

Reducing barriers to international trade in non-hazardous recyclable materials: exploring the environmental and economic benefits.
Part 2: Findings of five country case studies

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FOREWORD

Non-hazardous recyclable materials play an increasing role from both economic and environmental perspectives. The policy challenge is to facilitate legitimate trade in non-hazardous recyclable materials while ensuring that trade in hazardous materials is subjected to appropriate controls.

At its meeting in June 2007, the Joint Working Party on Trade and Environment (JWPTE) of the OECD agreed to explore key issues related to international trade in non-hazardous recyclable materials and analyse the possible environmental and economic effects of removing unnecessary hindrances to such trade.

As a first step, a scoping paper was produced [COM/TAD/ENV/JWPTE(2007)36], which explains the key concepts included in the legal instruments covering trade in non-hazardous recyclable materials and the concept of environmentally sound management (ESM).

In a second stage, a number of case studies were developed to illustrate the practical experiences of applying the legal provisions related to trade and the principles of ESM in a number of countries. The case studies cover China, Japan, the Netherlands, South Africa and the United States. They identify and analyse measures and practices that may hamper trade in three non-hazardous recyclable materials (steel scrap, recovered paper and plastic scrap) and explore if and how they could be removed without compromising environmental protection.

Finally, a synthesis report was developed, to draw lessons from the case studies and explore the possibilities of compatibility between environment protection and efficient resource utilization. The synthesis report is published separately [see OECD (2010), "Reducing barriers to international trade in non-hazardous recyclable materials: exploring the environmental and economic benefits, Part 1: A synthesis report", Environment Directorate, OECD, available at **www.oecd.org/trade/env**].

This report contains the findings of the five country case studies. Each case study follows the same outline: Section 1 analyses the flows of steel scrap, recovered paper and plastic scrap. Section 2 presents the domestic legislation that regulates ESM and the trade of these materials in the country. Section 3 describes measures and practices identified by traders. Concluding remarks are presented in Section 4. Given the small sample size and the qualitative nature of the study, the results should be regarded only as indicative and representative of a limited geographical scope. The consultants who drafted the case studies are acknowledged in the appropriate section of the report. Andrea Jett edited the whole report.

The report is published under the responsibility of the Secretary-General of the OECD.

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ACRONYMS AND ABBREVIATIONS

3R	Reduce, Reuse, Recycle
AEO	Authorized Economic Operator
AQSIQ	General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China
BAT	Best Available Techniques
CCIC	China Certification & Inspection Group
CMRA	China Non-ferrous Metals Industry Association Recycling Metal Branch
CRRA	China National Resources Recycling Association
EC	European Community
EEC	European Economic Community
ESM	Environmentally Sound Management
EU	European Union
FAO	Food and Agriculture Organisation
FNOI	Federatie Nederlandse Oud-papier Inzamelaars (Federation of Dutch collectors of recovered paper)
GAC	General Administration of Customs
HS	Harmonised Commodity Description and Coding System (or Harmonised System)
IISI	International Iron and Steel Institute
IMPEL	European Union Network for the implementation and Enforcement of Environmental Law
IMPEL TFS	IMPEL network for Trans-frontier Shipment of Waste
IPPC	Integrated Pollution Prevention and Control
ISRI	Institute of Scrap Recycling Industries
ITAC	International Trade Administration Commission
JCIC	Japan China Commodities Inspection Company Limited
JWPTE	Joint Working Party on Trade and Environment
METI	Ministry of Economy, Trade and Industry, Japan
MOE	Ministry of Environment, Japan
NACCS	Nippon Automated Cargo Clearance System
NDRC	National Development and Reform Commission
OECD	Organisation for Economic Co-operation and Development
SEPA	State Environment Procetion Administration of China, which, in 2008, changed into the Ministry of Environment of Protection of the People's Republic.of China (MEP).
UN	United Nations
VNP	Vereniging Nederlandse Papierfabrieken (Dutch Association of Paper industry)
WCO	World Customs Organization

CASE STUDY ON CHINA[1]

1. This case study surveys the measures and practices that are perceived to hamper trade in three non-hazardous recyclable materials: steel scrap, recovered paper and plastic scrap as experienced by exporters and importers of China, such as the applicable laws and regulatory measures on importing secondary resources. For example, importers must attain import licenses issued by the Ministry of Environment Protection as a requirement to importing non-hazardous recyclable materials, the volume and types of materials are also subject to legal restrictions. Foreign traders and domestic importers must also be licensed by the AOSIQ. The inspection measures and practices exercised by CCIC and AQISIQ are sometimes applied inconsistently.

2. The case study suggests several measures to overcome the perceived obstacles to trade in non-hazardous recyclable materials, including: broadening the quantity and types of non-hazardous recyclable materials allowed for imports; simplifying the regulations and legal procedure for imports; making CCIC inspection more efficient; and providing for easier access of AQSIQ certificates for exporters.

Introduction

3. Although China ranks third internationally in the amount of total natural resources consumed, the level of per capita consumption is very limited, ranking approximately 53rd in the world. Per capita level consumption of mineral resources is only half of the international average. Moreover, per capita level consumption of petroleum is only 7% and iron ore 17% of the international average. There is a large gap between China's anticipated demand in the future for these resources and its expected levels of supply. Therefore, a lack of natural resources creates a limitation to Chinese economic development. In order to promote development of China's economy and reduce pollution, it is very important for China to facilitate vigorous trade in non-hazardous recyclable materials and to unify the domestic and international markets.

4. International trade of primary resources has steadily increased between China and other nations. China is a large importer of primary resources every year, particularly iron ore, petroleum, bauxite, copper concentrate, wood and natural gas. China's consumption of these primary resources not only consumes more energy than non-hazardous recyclable materials, but it also causes severe environmental pollution.

5. About 160 million tons of secondary resources (valued at $58 billion) have been imported to China between 1995 and 2005. The recycling industry in China provides employment opportunities. Compared with consumption of primary resources, use of non-hazardous recyclable materials could save 80% on China's energy costs and reduce pollution by 70%. The use of non-hazardous recyclable materials creates tremendous benefits for the balance of natural resources, China's economy, society and environment[2].

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1 This case study was drafted by Mr. Ma Hongchang (CMRA), Mr. Hu Shouren (CRRA) and Mrs. Wang Yanfang (CMRA).

2 Internal document drafted by former vice director of SEPA.

6. China plans to explore both primary resources and non-hazardous recyclable materials in domestic market as well as in international markets.

7. The case study shows that trade in non-hazardous recyclable materials is facing a number of challenges, such as laws and regulatory measures on imports. For example, importers of certain kinds of scrap must obtain a license issued by MEP; the amount and types of non-hazardous recyclable materials are also subject to legal and regulatory restrictions. The inspection measures and practices exercised by CCIC and AQSIQ are sometimes applied inconsistently. The procedures for the exporting of recyclable scrap material can be over-complicated and strict.

Analysis of Trade Flows

8. China is a developing nation with a large population and very limited resources per capita. Therefore, economic development is restricted by a shortage in natural resources, especially non-ferrous and ferrous metals, papers and plastics. The import of non-hazardous recyclable materials for use in industry has the potential to compensate for China's shortages of resources and raw materials. In addition, imports of non-hazardous recyclable materials can allow the conservation of natural resources and energy. In this way, environmental pollution due to the consumption of natural resources can be reduced greatly, benefitting the environment and China's economy.

Production and consumption of recycled paper and paper board

9. China's paper and paper board industry produced 65 million tons of paper and paper board in 2006. Among China's paper producers, there are 396 medium to large-sized firms, accounting for 11.7% of total production; 2,992small-sized producers, which account for 88.3% of output. There are 7 large producers[3] with an annual output over 1 million tons, accounting for 20% of China's total output value.

Table 1. Definition of Company Size of Paper Industry in China

	Index	Unit	Large	Medium	Small
Paper manufacturer	Pay Roll	Head count	≥ 2,000	300-2,000	< 300
	Sales Volume	$10,000 (USD)	≥30,000	3000-30,000	< 3,000
	Property Volume	$10,000 (USD)	≥40,000	4000-40,000	< 4,000

10. The output value of the paper producing industry in China was $45.400 billion in 2006. The detail components of paper output are as follows:

[3] Dong Guan Jiu Long Paper Co. ltd., Shan Dong Chen Ming Paper Group, Jin Dong Paper (Jiang Su) Ltd., Li Wen Paper Company, Hua Tai Group, Ning Bo Zhong Hua Paper Company and Shan Dong Tai Yang Paper.

Table 2. Breakdown of paper output volumes

	News print	Uncoated printing and writing paper	Coated paper	Paper for daily use	Packing paper	White board	Case board	Corrugated paper	Special quality paper and paper board	Others
Output volume (1,000 tons)	3,750	12,200	4,600	4,700	5,200	9,400	11,500	11,300	1,100	1,250
% of total	5.8%	18.8%	7.1%	7.2%	8.0%	14.5%	17.7%	17.4%	1.7%	1.8%

Source: General Administration of Customs

11. The total consumption of paper products in China was 66,000 million tons in 2006 (50 kg per inhabitant) (Consumption=domestic production+ import-export).

12. Despite the absence of an established collection process, China has a relatively long history of collecting waste paper. Individual collectors purchase used paper from households and industry. The costs of establishing a separate collection process are too expensive to be profitable. For a long period, China had no official classification for waste paper. Until 2006, a certain percentage of waste paper material was being treated as mixed waste, which created difficulties for recycling. In 2006, China issued a national specification and classified waste paper into 11 categories. Waste paper recycling has now become part of China's national plan for collecting non-hazardous recyclable materials.

13. In 2006, 22,630 million tons of used paper and paper board were collected in China, representing a 34.3% recovery rate. If imported waste paper was included in the calculation, the recovery rate would be 65%.

Exports and Imports of used Paper and Paper board

Table 3. Exports and Imports of used paper and paper board in 2006

HS-Code	Commodity Description	Import		Export	
		1000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paper board	10,420	1,499,666	0.037	9.08
470720	Waste or scrap from paperboard of bleached chemical pulp	222	412,799	0.060	11
470730	Waste or scrap from paper or board of mechanical pump	5,027	717,863	0.0003	0.287
470790	Other paper waste or scrap from paper or board	3,953	487,715	0.010	10
4707	Total:	19,622	3,118,043	0.107	30.367

Source: General Administration of Customs.

14. Between 2004 and 2006, imports have increased 59.5%, while exports have decreased 85.5%. The reason for the sharp decrease in exports is because one of China's key importers, Indonesia, did not import waste paper in 2006. In contrast, Indonesia received 67% of China's exported waste paper in 2004. Data for the year 2004, 2005 and 2007 are provided in Appendix 1.

15. One-third of imports is related to the processing of non-hazardous recyclable materials for re-export after packaging or assembly by companies in China. The remaining two-thirds of imports are used in the regular trade of scrap paper and scrap board for domestic use. Foreign companies account for 60% of imports, private companies account for 17%and state-owned companies account for 13%.

Major trade partners

16. A large portion of imported waste paper in 2006 came from the U.S. (7.535 million tons), followed by Japan (3.214 million tons), Hong Kong (2.665 million tons), England (1.446 million tons) and the Netherlands (1.316 million tons). Imports of used paper and paper board from these trade partners accounted for 82.4% of the total amount of imported waste paper in 2006. Also, in 2006, waste paper exported from China was shipped to Mauritius (0.059 thousand tons), followed by the United Arab Emirates (0.016 thousand tons), and North Korea (0.010 thousand tons). Exports of used paper and paper board from these countries s accounted for 98.1% of the total amount.

Production and consumption of plastic scrap

17. The production of synthetic resin (synthetic resins are materials with similar properties to natural resins - i.e., viscous liquids capable of hardening. They are typically manufactured by esterification or soaping of organic compounds). In China, 25.287 million tons of synthetic resins were produced in 2006. In that year, China imported 18.058 million tons of synthetic resins and exported 2.504 million tons.

18. The total production of five kinds of major plastic scrap (PE, PP, PVC, PS, ABS) was 23.794 million tons, which accounted for 94% of total synthetic resin produced.

Table 4. The production of five major plastic scrap

(1,000 tons)	Production	Import	Export
PE	6013	4892	40
PP	5842	2945	26
PVC	7939	1147	460
PS	2722	1319	39
ABS	1278	2015	20
Total	23,794	12,318	585

Source: General Administration of Custom

19. 28 million tons of plastic products were produced in 2006.The total output value was $92.550 billion USD and the turnover value was$89.217 billion USD. China exported 8.965 million tons of plastic products and realized an export value of $20.290 billion USD.

20. China's apparent consumption amount of synthetic resin was 40.841 million tons in2006 and consumption of the 5 major plastics (PE, PP, PVC, PS, ABS) was calculated at 35.527 million tons (26.90 kg per inhabitant)

21. The collection network of waste plastic covers the whole area of China, and gradually some large trade markets emerged as well as distribution centres in provinces with a strong plastic industry like Guang Dong, Zhe Jiang, Jiang Su, Shan Dong, He Bei, Fu Jian and Liao Ning. A number of markets and centres can also be found in Guang Xi, Hu Nan, Hu Bei, Jiang Xi and He Nan province, etc. Other markets are located in areas around large cities. There are about 10 thousand companies engaged in waste plastic collecting and processing activities that employ several hundred thousand employees, 90% of them are small and labour intensive companies and about 1,300 firms are medium to large- sized companies. Some large corporations operate at the global level.

22. In2006, domestic consumption of plastics was 33.775 million tons and 7 million tons of waste plastic was collected in China, reflecting a20.7% recovery rate. Most of the waste plastics collected were

re-used in China and only 0.1 million tons were exported. China also imported 5.865 million tons of waste plastics.

Exports and imports of used plastics

Table 5. Exports and imports of plastic scrap in 2006

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	1,739	691,756	1.8	1,113
391520	Polystyrene waste or scrap	237	92,662	0.236	110
391530	Polyvinylchloride waste or scrap	1,175	457,768	0.414	148
301590	Other plastic waste or scrap	2,714	1,164,609	96	19
3915	Total:	5,865	2,406,795	98.45	1,390

Source: General Administration of Customs

23. Between 2004 and 2006, imports increased 43.2%, and exports increased 148%. The reason why export increased so significantly is because exports to Hong Kong and the U.S. soared in 2006. Exports to Hong Kong and the U.S. accounted for 85% of the total amount. Data for the years 2004, 2005 and 2007 are set forth in Appendix 1.

Major trade partners

24. The highest share of imports come from Hong Kong (1.616 million tons), Australia (0.795 million tons), Taiwan (0.478 million tons), Germany (0.379 million tons) and the Philippines (0.370 million tons), which collectively account for 62% of total imports. In 2006, China exported 503 thousand tons of plastic scrap to the U.S., followed by Hong Kong (41.2 thousand tons), which accounted for92.9% of the total amount exported.

Production and consumption of steel scrap

25. China produced 404.167 million tons of crude steel in China in 2006. There are about 1,400 steel producers of various kinds in China among which 67 companies produce more than 1 million tons of crude steel, annually. There are nine large crude steel producers[4] with annual outputs exceeding 10 million tons. The aggregate output of the nine largest producers of crude steel amounted to one third of China's total production.

26. All of China's medium and large steel producers are state-owned companies. In 2006, 466.855 million tons of steel were produced in China, an increase of 24.5% over 2005. China is a net exporter of crude steel: in 2006, China exported 34.726 million tons of crude steel.

27. China consumed 384.050 million tons of crude steel in 2006, accounting for 31% of worldwide use. In addition, 14.000 million tons of crude steel produced in 2005 was consumed in 2006, meaning that the actual consumption of crude steel in 2006 was 398.050 million tons (301kg per inhabitant).This represented a 13% increase in consumption compared with 2005.

28. In China, steel scrap is collected either by steel producers or specialised collectors. Steel producers collect steel scrap for re-use in production. Most collection companies are small and have

[4] An Shan Steel, Bao Steel, Tang Shan Steel, Sha Steel, Wu Han Steel, Ji Nan Steel, Ma An Shan Steel, Lai Wu Steel and Capital Steel

outdated processing technology. Both collection companies and steel producers that purchase steel scrap from collection companies are exempt from VAT. There is no import duty for steel scrap.

Exports and imports of used steel

Table 6. Exports and imports of steel scrap for the year 2006

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	3	659	0.440	83
720421	Waste or scrap from stainless steel	218	205,856	4.593	3,475
720429	Waste or scrap from alloy steel other than stainless steel	98	35,163	0.197	74
720430	Waste or scrap from tinned iron steel	0	0	0	0
720441	Waste from mechanical working from iron or steel	124	28,280	0.051	125
720449	Other ferrous waste or scrap	4,836	1,409,711	34.480	8,063
720450	Re-melting scrap ingots, of iron or steel	103	22,025	0	0
7204	**Total**	5,382	1,701,694	39.564	11,746

29. Between 2004 and 2006, imports have decreased 47.9%while exports have increased 580%. A strong international market for steel scrap was the primary reason for the significant increase in exports. Taiwan was the key importing country of steel scrap, accounting for86.7% of China's export share. Data for 2004, 2005 and 2007 are given in Appendix 1.

Major trade partners

30. Steel scrap imported to China in 2006 came primarily from the U.S. (1.075 million tons) followed by Japan (0.908 million tons), Kazakhstan (0.604 million tons), Australia (0.459 million tons) and Hong Kong (0.415 million tons). The import from these major partners accounted for 64.3% of the total imports. China's exports of steel scrap in 2006 was shipped mainly to Taiwan (34.2 thousand tons), the Netherlands (2 thousand tons), accounting for 91.5% of the total.

Analysis of trade flows

31. Due to the high speed of economic growth and scarcity of domestic supply, China has a great demand for imported non-hazardous recyclable materials. The demand for non-hazardous recyclable materials in the international market has significantly influenced their cost. In recent years, the price of steel scrap has steadily increased in the international market at a higher rate than China's domestic market, which has resulted in an annual decrease of imports. In August 2007, the average price of imported scrap steel was $491(USD) per metric ton (compare with $424 in September 2006), while the domestic price of scrap steel in China was approximately $310 per metric ton. Given the significant disparity in price between the 2 markets, the amount of steel scrap imported in2007 decreased by 37% from 2006; and imports in 2006 decreased by 46.6% from 2005.

32. Recovered paper is a difference case. Although the price of recovered paper in the international market increased, the price is still lower than that in China's domestic market. Therefore, China's imports of recovered paper have continued to be strong over the years. The problem is that the U.S. has increased exports of recovered paper to China by 35% since 2007. Due to the increased price of fuel, shipping lines

have increased their fees and are reluctant to ship recovered paper. As a result, the recovered paper trade between China and the U.S. has been severely impacted.

33. The price of waste plastic has been relatively stable. An issue related to the trade of waste plastic between China and Japan has been the quality of plastic scrap from Japan in 2005 and, as a result, plastic scrap from Japan has been restricted to great extent.

34. There has been a lack of positive media coverage on the efficiency and utilization of imported non-hazardous recyclable materials in China. On the other hand, problems found during the importing of these materials have often been magnified and publicly discussed. With such overwhelming public opinion, it has been easy to overlook the advances that have occurred in the import of non-hazardous recyclable materials. For instance, recently, the organization Greenpeace traced a cargo shipment from the US to Hong Kong. The organization claimed the ship was loaded with hazardous waste and asked Hong Kong officials to return the shipment to the US. An inspection of the shipment revealed that its cargo contained non-hazardous mixed metals. In a second example, in 2006, a newspaper in England reported that a large amount of hazardous household plastic waste was exported to Nanhai, China and caused severe pollution in the area. An inspection by SEPA discovered that the polluted area reported by the newspaper was a trade fair and a plastic scrap distribution centre. The plastic scrap at the centre was collected from within China and not imported from England. This plastic trade fair was later closed.

35. A large amount of waste paper and plastic are land-filled because the recovery rate of waste paper and plastic in China is low and there are currently few incineration plants. For instance, in large cities like Beijing, recovered paper accounts for 14%, plastic 13% and steel 1% of total household garbage. Compared with other cities in China, the recovery level is very low.

Legal and Policy Framework

General legal and policy framework for waste management

36. The Chinese government has been very attentive to recycling and utilization of non-hazardous recyclable materials, and has proposed the goal of establishing a society with a "conservation culture." The concept of conservation culture includes:

1. To establish a conservation-friendly environment;
2. To reduce the exploration and use of primary resources;
3. To fully utilize the energy available from non-hazardous recyclable materials;
4. To achieve an economy that incorporates the use of non-hazardous recyclable materials;
5. To promote a society of sustainable development.

37. The non-hazardous recyclable materials industry has been growing rapidly in China in recent years.

38. The main legal provisions for environmental protection are set forth in the Environment Protection Law of the People's Republic of China. This law was adopted at the 11th meeting of the Standing Committee of the 7th National People's Congress on Dec. 26, 1989. The law provides for the environmental protection of atmosphere, water, seas, land, minerals, forests, grasslands, wildlife, natural and human remains, nature reserves, and historic sites, urban and rural areas, prevention and control of environment pollution caused by waste atmosphere, waste water, solid waste and noise.

39. The legal framework for waste management is set forth in the *Law of the People's Republic of China on Prevention and Control of Environment Pollution Caused by Solid Waste,* which was adopted by the 16th meeting of the Standing Committee of the 8th National People's Congress on Oct. 30, 1995, and amended by the 13th meeting of the Standing Committee of the 10th National People's Congress on December 29, 2004.

40. Solid waste refers to solid or semi-solid waste materials that are created during industrial production or construction activities, household use, or other activities, and which pollute the environment. Solid waste includes industrial solid waste, unban residential refuse and hazardous waste.

41. Basic Chinese legal principles related to management of solid waste are:

- Three "R" principles;
- Principle of Producer Responsibility;
- Principle of management of the whole process, "from cradle to grave";
- Principle of centralized treatment.

42. Main measures and practices of solid waste management under this law are:

- Declaration and registration system;
- Name list regulation and distinguishing standards of hazardous wastes;
- System of solid waste disposal;
- A fee system for hazardous waste emissions;
- A system of permitted hazardous wastes;
- Manifest tracking system of hazardous wastes;
- System of assessing environmental impact.

43. In order to execute the Law of the People's Republic of China on Prevention and Control of Environment Pollution Caused by Solid Waste, SEPA enacted the followed rules and regulations:

- Measures of Explanatory Notes on Hazardous Waste, issued on May 31,1999;
- Measures on Medical Waste Management, issued on June 4, 2003;
- Measures on Hazardous Waste Operation Permit, issued on May 30, 2004;
- National Catalogue of Hazardous Waste issued on April 1, 1998 and revised in 2006.

44. The provisions of trans-boundary movement of wastes in this law state that:

- Solid waste from other countries is forbidden to be dumped, piled and disposed inside of China's territory.

- The Chinese government shall forbid the import of solid waste which cannot be used as raw material and shall restrict the import of solid waste that can be used as raw material.

- Transit of hazardous wastes passing through China's territory is forbidden.

Legal framework for trade in non-hazardous recyclable materials

45. The legal framework for trade in non-hazardous recyclable materials is set forth in the *Interim Regulations on the Administration of Environmental Protection in the Import of Waste Materials*, which was published by State Environment Protection Administration (now called the Ministry of Environment Protection of the People's Republic of China) on March 1, 1996. Supplementary provisions to this regulation were enacted on August 1, 1996. Under Chinese law, recovered paper, plastic scrap and steel scrap are regarded as waste, but not products or (secondary) raw material.

46. The key parts of the legal regulations are:

- The application and approval procedure for import of wastes. Companies that import or use wastes in a restricted category should submit application to the municipal level EPA, then to the provincial level and, finally, to SEPA for final approval. Companies who are importers or users of wastes in an automated category should submit their application directly to SEPA for approval.

- Criteria which the application for wastes importation must meet. A company applying for authorization to import wastes and use them as raw materials must be legally incorporated, and must be appropriately equipped to use imported waste with the corresponding pollution control facilities. The wastes that are the subject of the application must be included in the List of Waste That Could be Used as Raw Materials.

- Importers must submit an application when applying for a license to import wastes: application for Wastes Importation; report on Environment Risk Evaluation

- Evaluation of environment risk. In regard to the processing and production projects which use imported wastes as raw materials for construction, the construction companies must evaluate the environmental risks and prepare a *Report on Environment Risks Involved in Wastes Importation*, and submit the same to SEPA for examination after the approval of competent departments of environment protection administration at the municipal and provincial levels in the area of the construction project.

- Imported scrap shall be inspected by Customs and General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) as well. The customs office shall inspect and approve such wastes under the *Waste Import License* (issued by SEPA) and CCIC certificate; in the event that problems are discovered that are likely to cause environment pollution, inspection agencies shall inform and submit the issue to the local competent customs office and departments of environmental protection administration for settlement according to the applicable regulations.

47. In light of Law of Solid Waste, P.R.C. and Basel Convention and other related laws and regulations, SEPA announced (11th Announcement, 2007) the Prohibited Catalogue on Import of Solid Waste, Restricted Category on Import of Solid Waste that Can be Reused as Raw Material and Automated

Registration Category on Import of Solid Waste that Can be Reused as Raw Material[5] The Announcement was enacted March 1, 2007. SEPA is required to work with National Development and Reform Committee, Ministry of Commerce, General Administration of Custom, and AQSIQ to adjust and update the catalogues of imported solid wastes in a timely way. Following Table 7 are detailed information of the waste paper and paper board, waste plastic and scrap of steel. Three catalogues are set forth in Annex 2:

Table 7. Recovered Paper, Plastic Scrap and Steel Scrap Included in the Category

HS CODE	Description	Included in
3915100000	PE scrap and leftovers	Restricted catalogue
3915200000	PS scrap and leftovers	Restricted catalogue
3915300000	PVC scrap and leftovers	Restricted catalogue
3915901000	PET scrap and leftovers	Restricted catalogue
3915909000	Other plastic scrap and leftovers	Restricted catalogue
4707900090	Recollected paper or paper boards (included mixed scrap)	Restricted catalogue
4707100000	Unbleached craft paper, corrugated paper or paper board scrap	Automated catalogue
4707200000	Scrap paper or paper board made of bleaching chemical wood	Automated catalogue
4707300000	Waste paper or paper board made of machinery wood (e.g. waste newspaper, magazine and other similar publishing material)	Automated catalogue
7204210000	Stainless steel scrap	Restricted catalogue
7204410000	Iron & steel scrap produced during the process of machinery processing	Automated catalogue
72044900.90	Iron & steel scrap without clear classification	Automated catalogue
7204100000	Cast iron scrap	Automated catalogue
7204290000	Other alloy steel	Automated catalogue
7204300000	Tin plated iron & steel scrap	Automated catalogue
7204410000	Iron & steel scrap produced during the process of machinery processing	Automated catalogue
72044900.90	Iron & steel scrap without clear classification	Automated catalogue
7204500000	Broken iron & steel ingot used for re-melting	Automated catalogue

48. Environment Protection Control Standards for Imported Solid Wastes as Raw Material was issued by SEPA and AQSIQ on Dec.14, 2005 and was enacted on Feb. 2, 2006.

Key pollution prevention and control standards related to steel waste

49. The import of scrap steel is forbidden if it includes one or more of the following wastes: radioactive waste; waste or discarded weapons or ammunitions (e.g., explosives); waste materials containing PCBs; hazardous wastes as according to GB5058; and other wastes in the *National Catalogue Hazardous Waste.*

50. The following materials are highly restricted and their total weight should not exceed 0.01% of the total import: Waste asbestos or waste material that contains asbestos; waste sensitive materials; closed containers; and any other hazardous materials which could be fully explained it's hard to avoid mixing in during the process of collection, production, package and transportation.

51. Other carried wastes are also restricted and their total weight must be no higher than 2% of the total import. These impurities are: waste wood, paper, glass, plastic rubber, and peeled iron rust.

[5] The Restricted Registration Category refers to the imported waste that may affect the environment and importers of such material must first submit an application to EPA at the municipal level, then the provincial level and finally to SEPA for final approval. The Automated Registration Category refers to the imported wastes that have no negative effects on the environment and importers of such material are required to submit applications directly to SEPA.

52. Waste steel containers, pipes and shredded pieces, which were used as containers for hazardous chemical substances in liquid or half-solid matter, should be cleaned before being exported to China; the importer should submit an application to the inspection department and report the main component of hazardous chemical substance it used to contain or transfer.

Key standards towards paper and paper board waste

53. The import of waste paper and paper board is forbidden if it is mixed with one or more of the following: radioactive waste; waste or discarded weapons or ammunition (e.g., explosives); hazardous wastes according to GB5058; other wastes in the *National Catalogue Hazardous Waste.*

54. The following wastes are highly restricted and their total weight should not exceed 0.01% of the total import: Waste asbestos or waste material containing asbestos; burned or half-burned waste paper, and waste paper polluted by an extinguishing agent; waste sensitive materials; closed containers; and other hazardous materials which could be fully explained it's hard to avoid mixing in during the process of collection, production, packaging and transportation.

55. Other wastes such as waste wood, metals, glass, plastic, rubber, absorbent, wallpaper, waxed paper, and waste carbon paper, etc. should also be restricted and the weight percentage no higher than 1.5%.

Key standards towards plastic waste

56. The import of waste plastics is forbidden if it is mixed with one or more of the following: radioactive waste; waste or discarded weapons or ammunition (e.g., explosives); identified hazardous waste according to GB5058; other wastes in the *National Catalogue Hazardous Waste.*

57. The following wastes are highly restricted and their total weight should not exceed 0.01% of the total import: Waste asbestos or waste material containing asbestos; burned or half-burned waste plastics, and waste plastics polluted by an extinguishing agent; film containing sensitive substances; used plastic containers; and other hazardous materials which could be fully explained it's hard to avoid mixing in during the process of collection, production, packing and transportation.

58. For used plastic containers to be suitable for import, they must be shredded and cleaned until there is no obvious smell or stains;

59. Other wastes such as waste wood, metals, glass, thermosetting plastic, rubber, metal painted plastic film or plastic products etc., should also be restricted and the weight percentage must be no higher than 0.5%

60. The standards involve 14 types of waste including recovered paper, waste plastic and waste steel etc., contaminated and hazardous waste mixed in must be lower than the standards level.

61. According to *Law of the People's Republic of China on Prevention and Control of Environment Pollution Caused by Solid Waste,* imports of hazardous waste are prohibited by China; the transfer of hazardous waste through China is also forbidden. MEP issued "Measures on Export of Hazardous Waste" in January 2008, which was drafted in light of the *Basel Convention's* procedures and requirements for the transfer of hazardous wastes. Export of non-hazardous waste is not allowed without approval by the Ministry of Environment Protection.

China's response to New EU Regulation

62. On 14 June 2006, the Council and the Parliament approved a new regulation on shipment of wastes (Regulation (EC) 1013/2006). The new regulation, which replaces Council Regulation (EC) 259/93, was published on 12 July 2006, and was enacted three days later. It has been in effect since 12 July 2007.

63. Shipment of non-hazardous wastes to non-OECD Decision countries for recovery is governed by Article 37 under the new regulation, which stipulates that the European Commission shall send a written request to each country to which are not parties to the OECD Decision, and each country shall choose among the following options on the questionnaire:

- a prohibition; or
- a procedure of prior written notification and consent as described in Article 35; or
- no control in the country of destination.

64. China's reply was timely received by the European Commission and was reflected in Commission Regulation (EC) 801/2007 which the European Commission was required to adopt before July 12, 2007 and actually adopted on July 6, 2007. This regulation was then later replaced by a further implementing regulation Commission Regulation (EC) No 1418/2007including an updated reply from China.

65. China is one of the earliest parties to the Basel Convention. China was nominated in 1990 as member of Basel Convention and approved at the 21st meeting of the Standing Committee of the 7th National People's Congress on Sep. 4, 1991, which was ratified in 1992.

Foreign supplier registration and domestic consignee registration

66. In order to strengthen the management and the supervision of inspections and quarantines for imported scrap materials, and in light of AQSIQ 115th notice in 2003 and 48th notice in 2004, AQSIQ adopted in 2004 the registration management measures for foreign companies exporting scrap materials to China. Any scrap supplier in other countries must apply for and receive the Certificate issued by AQSIQ before they are allowed to begin sending exports to China.

67. Beginning April 1, 2007, AQSIQ adopted the registration management measures for domestic importers and consignees in China. Importers must submit an application to AQSIQ as a requirement to receive a Certificate.

68. In order to guarantee the imported scrap will be treated in an environmentally responsible manner, the local environment protection bureau visits plants periodically to check the utilization of imported scrap even after importers have been granted the license issued by MEP and the certificate by AQSIQ. In the event that environmental pollution is found, the local environment protection bureau will withdraw the company's license and certificate.

Legal Framework for Domestic Wastes Collection and Utilization

69. The Law of promoting Circular Economy was approved by the 4th session of Standing Committee of 11th People's Congress on August 29, 2008. There are 6 chapters of the law: General Principles; Fundamental Rules for Administration; Reduce, Reuse and Resource; Encouragement Measures; Legal Liabilities; and the Appendix.

70. *Circular Economy* refers to all activities that are connected with the "Reduce, Reuse and Resource" principle during the process of production, logistics and consumption. "Reduce" refers to lowering resource consumption and waste discharge. "Reuse" means to use non-hazardous recyclable materials as products directly, or to extend its value as products after repair or refurbishment. "Resource" means using non-hazardous recyclable materials as raw materials directly or treating the materials properly to allow them to be recycled.

71. Towards the process of production of individual enterprises, The Law has specific measures and practices for the administration and encouragement of individual companies.

72. The Measures on Collection of Non-Hazardous Recyclable Materials were issued by Ministry of Commerce (MC) on March 2007. There are 5 chapters: General Principles; Rules for Operation; Supervision; Penalty; and the Appendix.

73. The non-hazardous recyclable materials mentioned in the Measures on Collection include: scrap metals, electronic waste, discarded machinery equipment, raw waste material for making paper, raw waste material for use in light chemical industry (e.g., rubber, plastic, packaging of agriculture pesticide, animal hairs, scrap glass, etc.)

74. Companies involved in these businesses must meet certain requirements and possess the proper business license. Detailed and specific administration requirements are also included in the Measures.

Perceived Measures Hampering Trade

75. China's economy has continued to grow by 7 to 8% annually, requiring a large amount of raw material to support its development. While China is short of resources on a per capita level, some primary resources have nearly completely run out. Therefore, importing non-hazardous recyclable materials is necessary to compensate for this shortage. But incomplete and strict rules and regulations on non-hazardous recyclable material imports in China may hamper trade. A number of interviews were undertaken, including interviews of government officials, trade associations, importers and exporters etc. The key issues raised by them in the interviews are:

a. **Three catalogues of importing wastes:** Prohibited Catalogue on Imports of Solid Waste, Restricted Catalogue on Imports of Solid Waste that can be Reused as Raw Material and Automated Registration Catalogue. The Basel Convention does not control non-hazardous recyclable materials, but focuses only on hazardous waste. There are over 150 non-hazardous recyclable materials on the "Green List" enacted by EU, which can be regularly traded. In China's catalogues, 69 wastes are listed in the prohibited import catalogue, and 54 wastes in the restricted import and automated lists that are allowed to be imported to China subject to certain requirements. While some of wastes such as waste tyres, waste leather, precious metals scrap, etc., are on EU's green list, they are prohibited under China's restrictions.

b. **Strict pollution control standards:** China has strict pollution control standards on 54 wastes that are allowed to be imported. The contamination level of steel scrap should not exceed 2% and the hazardous waste level must be no higher than 0.01%; the contamination level of recovered paper should not exceed 1.5%and the hazardous waste level must be no higher than 0.01%; contamination levels contained in plastic scrap should not exceed 0.5% and the hazardous waste level must not exceed 0.01%. Shipments of wastes would be returned in the event the material does not meet these standards. After interviews with customs officials, they reported that each year they return some unqualified containers, which affects normal trade to certain extent.

c. **Import waste licenses from MEP:** Domestic importers have to apply for a waste import license from MEP before they are allowed to import wastes on the restricted import catalogue (34). In addition, domestic importers must also complete an environmental risk assessment. Importers of wastes on the automated imports category must also receive approval from MEP. Some companies interviewed reflected that the quantity approved is always inadequate and the process is time-consuming, sometimes taking up to 4 weeks. Several problems regarding CCIC procedures were mentioned:

   - Although China's regulation requires an inspection of the shipment by a Chinese inspection authority prior to their departure from exporting countries, (CCIC), some countries do not have CCIC offices; some do have offices but lack sufficient resources for performing all of the inspections required. Therefore, there are frequently delays in having CCIC authorities inspect the companies' shipment. Some CCIC offices issue certificates without performing an inspection after receiving the inspection fee[6].

   - Some importers reported they were often confused what significance the CCIC certificate had. Even with the CCIC certificate in hand, the importers commented that their shipments were still subject to additional searches upon arriving at their destination. If the cargo on board is determined to be non-approved, AQSIQ has the power to instruct traders to return to their ports of origin. Importers reported that part of the reason for this problem is that the CCIC did not conduct a pre-inspection before the shipment left at all or, if they did perform a pre-inspection, they overlooked problems with the shipment.

d. **Overseas suppliers and Domestic importers license by AQSIQ.** In order to guarantee that the scrap flowing into China meets pollution control standards, foreign applicants must submit 17 prepared documents in Chinese to an AQSIQ authority, which poses significant challenges for foreign suppliers. Sometimes, large companies fail to get the AQSIQ license because they cannot prepare complete documents, while some small companies succeed although they do not meet the AQSIQ requirement, which leads to unfair competition. Since 2007, AQSIQ started to implement registration requirements for domestic importers.

Limitations on trade identified through interviews with some importers and exporters of scraps.

76. Some importers of plastic scrap stated that plastic scrap from Japan was prohibited for one year after a severe quality problem was found in a shipment in 2005. Although import of plastic scrap from Japan was reopened in 2006, only 56 Japanese exporters were given clearance by AQSIQ. Others applied to AQSIQ, but have still not been approved.

77. Some foreign traders told CMRA that AQSIQ is very slow to register foreign companies. From 2005 to 2007, only200 companies were approved each year and no company was approved in 2008 to date. Besides, many suppliers still have not received responses to applications filed more than one year ago.

78. Some importers suggested that restricted import catalogue applicants and automated catalogue applicants should be subject to the same application process. Applicants in the restricted import catalogue must prepare environmental risk assessments and they must submit documents to municipal and provincial EPA first, and then MEP for final approval. Importers complained that the procedure was too complicated.

[6] Interviews in other countries indicated that some inspections are done quite rapidly and traders were not impressed by the quality of the work. This could explain why certain loads are accepted by the CCIC and nevertheless get trouble when inspected in China by the AQSIQ.

79. Some recovered paper importers said they met difficulties in recent years. Currently, MEP requires all recovered paper importers to prepare an environmental impact assessment. However, most factories, especially medium and small factories, did not prepare these assessments during the construction period. It is difficult for these companies to make environment impact assessments now because they would be required to reform facilities after they have already completed the time-consuming and complicated procedure.

Advice and measures for removing procedures hampering trade

80. Some of the types of wastes in the prohibited import category are "green" under EU regulations, e.g., waste tyres, waste leather, precious metal scrap and waste electronic products. China should consider broadening the scope of wastes that are allowed to be imported and the quantity an individual company is permitted to import should no longer be restricted;

81. The procedure for applying for a license to import scrap should be simplified and the time for approval should be shortened. For instance, companies that imported waste in the restricted category have to prepare environmental risk assessments every year, and some importers believe it is unnecessary.

82. We interviewed the MEP and they reported that the adjustment of the 3 categories of waste must be addressed by the Ministry of Environment Protection, Ministry of Commerce, and General Administration of Customs together. Since 1995, when the categories of scrap allowed for import were announced, the categories had been adjusted 3 times with more being added. With the ever increasing demand for non-hazardous recyclable materials in China, the categories will be further adjusted. With respect to the approval process, MEP has a department responsible for the examination of documents. Currently, the efficiency is considered very good. They are willing to perfect the procedure according to the requirements of the interested companies.

83. Pre-shipment inspection by CCIC is time-consuming and the cost is relatively high, CCIC should take actions to further facilitate the scrap trade ;

84. There should be an easier access to the AQSIQ certificate for both foreign and domestic suppliers; and the application process should be open and fair.

85. AQSIQ officers said AQSIQ has already approved over 2,500 foreign suppliers and 1,800 domestic buyers. "From the number, you can see it's not that hard like other people believe" said one official of AQSIQ. In the past, what most influenced their decision was the completeness of documents. Thus, the companies that are not good at preparing documents in accordance with AQSIQ's requirement may not be approved. Now, AQSIQ's officials are shifting their focus on spot inspections. They plan to send people to new applicants' premises to prevent the applicants from falsifying documents. With CCIC offices already established in other countries, AQSIQ is considering establishing more to meet future practical needs.

Concluding Remarks

86. In recent years, the steel industry, paper manufacturing industry and plastic products industry have been growing rapidly in China. In 2006, the production of steel was 404.160 million tons, paper and paper board was 65 million tons, and the production of plastics was 23.794 million tons. Compared with 2004, steel scrap importation decreased by 48%, while waste paper and paper board increased by 60%, and plastics waste increased by 43%. Few scrap steel, paper and plastics are exported by China.

87. Many measures and practices exist in China that have an effect on trade. For example, import licenses issued by MEP is required for importing scrap, the volume and types of scrap are also restricted; the multi-layered and sometimes contradictory inspection by CCIC and AQSIQ; the procedure for approval to export recyclable scrap is over-complicated and strict.

88. The study revealed inconsistencies in Japanese and Chinese trade statistics with regard to the composition of steel scrap categorized under HS Code 7204.49. For the discussion of the trade of non-hazardous recyclable materials, accuracy of the basic data is crucial. The relevant authorities must recognise the issues and discuss ways to make the trade data consistent.

89. The case study proposed some measures to assist in improving trade. From the perspective of China, the quality and types of scrap material allowed to be imported should be broadened; the procedure for obtaining a waste import license application should be simplified; CCIC inspection should become more efficient; the promotion of easier access to a AQSIQ certificate for exporters.

90. Removing these measures to trade would bring great benefit to the development of China's economy and environment protection. If the import of non-hazardous recyclable materials is increased, the exploration and use of raw materials will be reduced. Statistics show, that, between 1991 to 2005, China imported 70 million tons of scrap paper, which is the equivalent to the production of 56 million tons of recycled paper, saving 210 million cubic meters of wood, 21 million tons of caustic soda, 21 billion kilowatts of electricity, 11.2 billion cubic meters of fresh water. China imported 40 million tons of scrap steel, which is equal to producing 36 million tons of steel, saving 72 million tons of imported iron ore, reducing discharge of waste residues by 36 million tons. In regard to scrap plastic, China imported 20 million tons, saving 60 million tons of petroleum.

Appendices

Annex 1. Trade data 2004, 2005, 2007

Table 8. Exports and imports of recovered paper and paper board in 2004

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paper board	5,777	845,672	0.077	15
470720	Waste or scrap from paperboard of bleached chemical pulp	246	38,396	0	0
470730	Waste or scrap from Paper or board of mechanical pump	3,871	556,334	0.108	9.7
470790	Other paper waste or scrap from paper or board	2,406	286,851	0.554	84.1
4707	Total	12,300	1,727,253	0.739	108.8

Source: General Administration of Custom.

Table 9. Exports and imports of recovered paper and paper board in the year 2005

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paper board	8,921	1,328,005	0	0
470720	Waste or scrap from paperboard of bleached chemical pulp	170	32,916	0.015	8.5
470730	Waste or scrap from Paper or board of mechanical pump	4,724	699,232	0.079	22
470790	Other paper waste or scrap from paper or board	3,211	397,025	0.043	7.7
4707	Total:	17,026	2,457,178	0.137	38.2

Source: General Administration of Custom.

Table 10. Exports and imports of recovered paper and paper board in the year 2007

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paper board	11,998	2,201,026	0.0003	0.202
470720	Waste or scrap from paperboard of bleached chemical pulp	194	46,247	0.356	57.4
470730	Waste or scrap from Paper or board of mechanical pump	5,775	1,049,516	0.147	27.8
470790	Other paper waste or scrap from paper or board	4,595	745,180	0.002	0.196
4707	Total:	22,562	4,042,024	0.5053	85.598

Source: General Administration of Custom.

Table 11. Exports and imports of plastic scrap in the year 2004

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	1,431	450,634	1.1	339
391520	Polystyrene waste or scrap	338	108,822	0.453	116
391530	Polyvinylchloride waste or scrap	624	209,436	0.284	0.321
391590	Other plastic waste or scrap	1,702	609,257	38	6,633
3915	Total:	4,095	1,378,101	39.7	70,883

Source: General Administration of Custom.

Table 12. Exports and imports of plastic scrap in the year 2005

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	1,324	484,831	1.492	631
391520	Polystyrene waste or scrap	381	136,802	1.112	388
391530	Polyvinylchloride waste or scrap	906	328,343	0.296	153
301590	Other plastic waste or scrap	2,345	980,359	41.1	9,258
3915	Total:	4,956	1,930,335	44	10,430

Source: General Administration of Custom.

Table 13. Exports and imports of plastic scrap in the year 2007

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	1,431	450,634	1.1	339
391520	Polystyrene waste or scrap	338	108,822	0.453	116
391530	Polyvinylchloride waste or scrap	624	209,436	0.284	0.321
391590	Other plastic waste or scrap	1,702	609,257	38	6,633
3915	Total:	4,095	1,378,101	39.7	70,883

Source: General Administration of Custom.

Table 14. Exports and imports of steel scrap in2004

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	134	2,275	0.136	17
720421	Waste or scrap from stainless steel	138	126,844	1.582	1,269
720429	Waste or scrap from alloy steel other than stainless	118	33,623	1.72	508
720430	Waste or scrap from tinned iron steel	0	0	0	0
720441	Waste from mechanical working of iron or steel	194	41,997	1.491	246
720449	Other ferrous waste or scrap	9,624	2,003,311	0.883	165
720450	Re-melting scrap ingots, from iron or steel	136	22,976	0	0
7204	**Total**	10,344	2,231,0265	5.812	2,205

Source: General Administration of Custom.

Table 15. Exports and imports of steel scrap in the year 2005

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	7	1,026	0.6	0.3
720421	Waste or scrap from stainless steel	201	248,040	0.228	347
720429	Waste or scrap from alloy steel other than stainless	110	41,653	0.988	470
720430	Waste or scrap from tinned iron steel	0	0	0	0
720441	Waste from mechanical working of iron or steel	297	55,031	0.419	86
720449	Other ferrous waste or scrap	9,345	2,226,341	0.3	67
720450	Re-melting scrap ingots, from iron or steel	184	38,692	0	0
7204	**Total**	10,144	2,610,783	2.535	500.3

Source: General Administration of Custom.

Table 16. Exports and imports of steel scrap in the year 2007

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	18	5,506	0.023	2.8
720421	Waste or scrap from stainless steel	381	1,081,818	2.8	3,1
720429	Waste or scrap from alloy steel other than stainless	100	52,515	0.104	67.8
720430	Waste or scrap from tinned iron steel	(0.098)	(32)	(0.005)	(1)
720441	Waste from mechanical working of iron or steel	94	27,527	1.478	286.9
720449	Other ferrous waste or scrap	2,781	1,327,121	27	10,298
720450	Re-melting scrap ingots, of iron or steel	18	4,196	0.0003	0.2
7402	**Total**	3,392	2,498,683	31.405	10,658

Source: General Administration of Custom.

Annex 2. Catalogues for Imports of Solid Waste

Table 17. Prohibited Catalogue on Imports of Solid Waste

	Code	Importing Products	Short
1	0501000000	Unprocessed human hair; waste human hair whether washed or not	Waste human hair
2	0502103000	Waste bristles and pig hair	Scrap hair of pigs
3	0502902090	Badger hair and other animal hair scrap used for brush making	Animal hair scrap
4	0505901000	Feathers or the powder, scrap from uncompleted feather	Feather scrap
5	0506901110	Bone scrap with component from cows and sheep(unprocessed or only processed with fat removing)	Cow and sheep bone scrap
6	0506901910	Other bone scrap (unprocessed or only processed with fat removing)	Other bone scrap
7	0507100090	Other animal teeth powder and scrap	Teeth powder scrap
8	0511994010	Horse hair scrap (whether finished or pieces without packing)	Horse hair scrap
9	1522000000	Collected fat from oil tannic (including the residue left after dealing with fat or animal and vegetable wax)	Collected fat from oil tannic
10	2517200000	Scum, slag or other similar industrial slag (whether or not mixed with materials with code 25171000)	Scum, slag or other similar industrial slag
11	2517300000	Crushed asphalt stones	Crushed asphalt stones
12	2525300000	Mica scrap	Mica scrap
13	2530909910	Magnesium brick scrap	Magnesium brick scrap
14	2618009000	Particle-like finishing slag generated from iron and steel smelting (with abrasive finishing slag included)	Particle-like finishing slag generated from iron and steel smelting
15	2519000090	Other slag and scum scrap from iron and steel smelting (except for particle-like finishing slag)	Other slag and scum scrap from iron and steel smelting
16	2620110000	Slag, ash and other residue containing hard zinc (except for ash and slag produced from iron and steel smelting)	Slag, ash and other residue containing hard zinc
17	2620190000	Slag, ash and other residue containing other sorts of zinc (except for ash and slag produced from iron and steel smelting)	Slag, ash and other residue containing other sorts of zinc
18	2620210000	Gasoline sludge containing lead and sludge of antiknock compound with lead	Sludge with lead
19	2620290000	Other slag, ash and other residue mainly containing lead (except for ash and slag produced from iron and steel smelting)	Other slag, ash and other residue mainly containing lead

20	2620300000	Slag, ash and other residue mainly containing copper (except for ash and slag produced from iron and steel smelting)	Slag, ash and other residue mainly containing copper
21	2620400000	Slag, ash and other residue mainly containing aluminum (except for ash and slag produced from iron and steel smelting)	Slag, ash and other residue mainly containing aluminum
22	2620600000	Slag, ash and residues containing arsenic, mercury, tellurium or its compound (using for separation or production of arsenic, mercury, tellurium and its compound)	Ash and residues containing arsenic, mercury, tellurium or its compound
23	2620910000	slag, ash and residue containing antimony, beryllium, cadmium, chromium	Slag, ash and residue containing antimony, beryllium, cadmium, chromium
24	2620991000	Other slag, ash and residue mainly containing tungsten	Other slag, ash and residue mainly containing tungsten
25	2620999090	Slag, ash and other residue containing other metals or compounds (except for ash and slag produced from iron and steel smelting)	Slag, ash and other residue containing other metals or compounds
26	2621100000	Ash and slag from incinerate of urban refuse	Ash and slag from incinerate of urban refuse
27	2621900000	Other slag or ash (including alginate ash and seaweed ash)	Other slag or ash
28	2710910000	Waste oil containing PCB, PBB (including waste oil with PCT)	Waste oil containing PCB, PBB
29	2710990000	Other waste oil	Other waste oil
30	2713900000	Residues of mineral oils like petroleum	Residues of mineral oils like petroleum
31	3006920000	Waste drugs (lost their usage value due to reasons like exceeding expiration date)	Waste drugs
32	3804000010	Left alkali liquor from wood without concentration sugar removing or chemical treatment.	Left alkali liquor from wood
33	3825100000	Urban refuse	Urban refuse
34	3825200000	Sewage mud	mud
35	3825300000	Medical waste	Medical waste
36	3825410000	Waste halogen organic solvents	Waste organic solvents
37	3825490000	Other waste organic solvents	Other waste organic solvents
38	3825500000	Waste pickle, hydraulic oil and brake oil (including waste anti-freeze liquid)	Waste pickle, waste oil
39	3825610000	Chemical waste mainly containing organic component (other waste from chemical industry and other related industries)	Chemical waste mainly containing organic component
40	3825690000	Other chemical waste (other waste from chemical industry and other related industries)	Other chemical waste
41	3825900090	Other chemical and engineering by- products and wastes without products code	Other chemical and engineering wastes without products code
42	40040000.10	Waste tyres and its chops]	Waste tyres and its chops
43	40040000.20	Vulcanized rubber scrap, its remains and particle & powder(except for hard rubber)	Waste vulcanized rubber
44	4017001010	Hard rubber scrap with varied shapes	Hard rubber scrap
45	4115200010	Leather slag, leather ash, leather sludge, leather powder	Leather slag, leather ash, leather sludge, leather powder
46	47079000.10	Collected wallpaper, waxed paper, carbon paper (included mixed scrap without separation)	Collected wallpaper, waxed paper, carbon paper
47	51031090.90	Thin hair of animals	Thin hair of animals
48	51032090.90	Scrap thin hair of animals (with waste yarn included and collected fiber excluded)	Scrap thin hair of animals
49	51033000.90	Scrap thick hair of animals (with waste yarn included and recollected fiber excluded)	Scrap thick hair of animals
50	51040090.90	Other recollected fibres from thin or thick hair of animals	Other recollected fibres from thin or thick hair of animals
51	5202910000	Re-collected fibres from cotton	Re-collected fibres from cotton
52	56013000.90	Turnings, powders and knots of textile fiber (no longer than 5 mm)	Turnings, powders and knots of textile fiber
53	6309000000	Worn clothes	Worn clothes
54	63109000.90	Separated waste fabric	Waste fabric

55	63109000.90	Other waste fabric	Other waste fabric
56	70010000.10	Scrap glass	Scrap glass
57	7112301000	Ash containing silver or silver compound (with recycling silver as target)	Ash containing silver or silver compound
58	7112309000	Ash containing other precious metals or their compounds (with recycling precious metal as target)	Ash containing other precious metals or their compounds
59	7112912000	Gold or gold compound scrap (except for scrap containing other precious metal as well)	Gold or gold compound scrap
60	7117991000	Silver or silver compound scrap (except for scrap containing other precious metal as well)	Silver or silver compound scrap
61	7112992000	Other precious metals or compounds scrap (with precious metals as recycling target)	Other precious metals or compounds scrap
62	74010000.10	Copper precipitates	Copper precipitates
63	2524	Waste asbestos (ash or fibres)	Waste asbestos (ash or fibres)
64	6806	Waste mineral fibres, slag cotton, rock cotton and other similar mineral cotton and earthen fiber etc.	Waste mineral fibre, slag cotton, rock cotton and other similar mineral cotton and earthen fibre etc.
65		Used waste plastic bags, film and nets	Used waste plastic bags, film and nets
66		Waste fishing nets	Waste fishing nets
67		Gunny bags	Gunny bags
68		Other waste machinery and electrical products and equipment (including waste component parts, and parts that are separated, shredded or broken, except for those in other state conventions)	Other waste machinery and electrical products and equipments
69	9504	Game machines	Game machines

Table 18. Restricted Registration Category on Imports of Solid Waste

	HS-Code	Importing Products	Description appeared in the certificate
1	1703100000	Cane molasses	Cane molasses
2	1703900000	Other cane molasses	Other cane molasses
3	2618001000	Slag particle mainly containing manganese from iron and steel smelting(including slag sand)	Slag particle from iron and steel smelting (Mn＞26%)
4	26190000.10	Scale resistance from steel rolling	Scale resistance from steel rolling
5	26190000.20	Scum and slag containing vanadium from the process of iron and steel smelting	Vanadium slag from iron and steel smelting
6	26209990.10	Slag, ash and residue (V2O5)(except for that generated from iron and steel smelting)	Slag, ash and residue (V2O5)
7	26209990.20	Converter slag from copper smelting (Cu>10%); other finishing slag from copper smelting	Converter slag from copper smelting (Cu>10%)
8			other finishing slag from copper smelting
9	3915100000	PE scrap and leftovers	PE scrap and leftovers
10	3915200000	PS scrap and leftovers	PS scrap and leftovers
11	3915300000	PVC scrap and leftovers	PVC scrap and leftovers
12	3915901000	PET scrap and leftovers	PET scrap and leftovers
13	3915909000	Other plastic scrap and leftovers	PC scrap and leftovers
14			Other plastic scrap and leftovers but PC
15	4004000090	Uncured rubber scrap, leftover and its powders and particles	Uncured rubber scrap, leftover
16	4707900090	Recollected paper or paper boards	Other waste paper

		(included mixed scrap)	
17	5003001000	Uncombed yarns scrap	Uncombed yarns scrap
18	5003009000	Other yarns scrap	Other yarns scrap
19	5202100000	Waste cotton and yarn thread (including cotton thread)	Waste cotton and yarn thread
20	5202990000	Other waste cotton	Other waste cotton
21	5505100000	Synthetic fiber scrap (including fly fiber, waste yarns and recycled fiber)	Synthetic fiber scrap
22	5505200000	Artificial fiber scrap (including fly fiber, waste yarns and recycled fiber)	Artificial fiber scrap
23	6310100010	New separated waste fabric	New waste fabric
24	6310100010	New other waste fabric	New other waste fabric
25	7204210000	Stainless steel scrap	Stainless steel scrap
26	72044900.10	Waste automobile briquettes	Waste automobile briquettes
27	72044900.20	Mixed hardware and appliances with major recovery target iron and steel	Mixed hardware and appliances with major recovery target iron and steel
28	74040000.10	Waste electric motors with major recovery target copper(including waste motors, insulated copper wire, cables, hardware and appliances)	Waste electric motors with major recovery target copper
29	76020000.10	Waste wire with major recovery target aluminum (including waste wire, cable, hardware and appliances)	Waste wire with major recovery target aluminum
30	8101970000	Tungsten scrap	Tungsten scrap
31	8104200000	Magnesium scrap	Magnesium scrap
32	8108300000	Titanium scrap	Titanium scrap
33	81130000.10	Oxygen Titanium scrap	Oxygen titanium scrap
34	8908000000	Knocked down vessels and other floating structures	Waste vessel

Table 19. Automated Registration Category on Imports of Solid Waste

	Code	Importing Products	Description in Certificate
1	4401300000	Scrap sawdust, wood and pieces (whether or not agglomerated in logs, briquettes, slices or other similar shapes)	Wood scrap
2	4501901000	Cork scrap	Cork scrap
3	4707100000	Unbleached craft paper, corrugated paper or paper board scrap	Waste paper
4	4707200000	Scrap paper or paper board made of bleaching chemical wood	Waste paper
5	4707300000	Waste paper or paper board made of machinery wood (e.g. waste newspaper, magazine and other similar publishing material)	Waste paper
6	71129110.10	Gold scrap	Gold scrap
7	71129110.90	Gold-plated scrap (except for those containing other precious metals)	Gold-plated scrap
8	7112921000	Platinum and platinum-plated scrap（except for those containing other precious metals，with major recovery target platinum）	Platinum and platinum-plated scrap
9	7204100000	Cast iron scrap	Iron & steel scrap
10	7204290000	Other alloy steel	Iron & steel scrap
11	7204300000	Tin plated iron & steel scrap	Iron & steel scrap
12	7204410000	Iron & steel scrap produced during the process of machinery processing	Iron & steel scrap
13	72044900.90	Iron & steel scrap without clear classification	Iron & steel scrap
14	7204500000	Broken iron & steel ingot used for remelting	Iron & steel scrap
15	74040000.90	Other copper scrap	Copper scrap
16	7503000000	Nickel scrap	Nickel scrap

17	76020000.90	Other aluminum scrap	aluminum scrap
18	7902000000	Zinc scrap	Zinc scrap
19	8002000000	Tin scrap	Tin scrap
20	8103300000	Tantalum scrap	Tantalum scrap

Annex 3. Profiles of surveyed exporting/importing companies

	Trading materials	Activities	Key exporting/ importing markets	No. of employees	Nature of company structure	Years in the business
1	Iron and steel scrap	Treatment plants, import and export	Imports from nearly 20 countries on all continents Exports mainly to Japan	More than 1000 employees	National company with more than 1000 employees	More than 15
2	Recovered paper scrap	Paper making plants Import and export	Imports from U.S.A. European countries and Japan Exports to U.S.A.	More than 500 employees	Foreign company with more than 500 employees	More than 10
3	Plastic scrap	Treatment, import	Imports from U.S.A. European countries and Japan Exports to Germany	More than 600 employees	Private company with more than 600 employees	More than 10

CASE STUDY ON JAPAN[7]

91. Analysis based on a literature survey and interviews with exporters and importers revealed that there were no clear measures hampering the trade of non-hazardous recyclable materials in Japan. However, the interviewees identified several problems in the implementation of laws and policies that could potentially lead to such measures.

92. The biggest problems in the trade of non-hazardous recyclable materials were noted in the trade of steel scrap, categorized under HS Code 7204.49. Because of the broad definition of the category, a wide range of materials may be contained in this type of steel scrap, including possibly hazardous substances which could undermine the transparency of trade, and lead to trade bans.

93. The main market for Japanese exporting companies is China. Those dealing with steel scrap pointed out that, too often, the export procedures for this material to China are costly and time-consuming In contrast, companies dealing with plastic scrap did not raise any complaints about Chinese trade procedures. It seems that there are different views on Chinese trade procedures depending on the company and the materials traded.

94. This study suggests several steps to reduce the risks of potential measures hampering the trade of non-hazardous recyclable materials.

Analysis of Trade Flows

Production and consumption of recycled paper and board

Structure of production and consumption of paper and board in Japan

95. Used paper serves as raw material input for paper products, board products and other non-paper products. The main raw materials used to produce paper and board are used paper pulp and wood pulp. According to the Paper Recycling Promotion Centre (2007), the ratio of used paper pulp in Japan exceeded that of wood pulp in 1990, and was around 60% in 2007. Used paper is mainly composed of cardboard, newspaper and magazines; cardboard and newspaper constituted about 45% and 26% of the material respectively as of 2007.

96. Used paper can be of one of two types based on the source: "used industrial paper[8]" or "recycled paper.[9]" Used paper generated in households is recovered through voluntary collection by local communities or professional used paper collectors who exchange it for toilet paper. In some cases, newspaper agencies or local governments collect used paper directly. The recovered paper is passed on to direct-wholesalers through depots of waste dealers and used paper collectors. Under the management of direct-wholesalers, used paper is pressed and roped into masses of one ton each by packing machines, then

7 The case study was drafted by Mitsubishi Research Institute Inc.

8 "Used industrial paper" is used-paper discharged from business places handling paper in a large volume such as printing plants, newspaper companies, box-manufacturing plants, etc.

9 "Recycled paper" stands for the paper used once at households, department stores, supermarkets, etc.

transported by truck to paper manufacturers. Used industrial paper is gathered by special collectors, then passed onto direct-handlers, and finally sent to paper manufacturers.

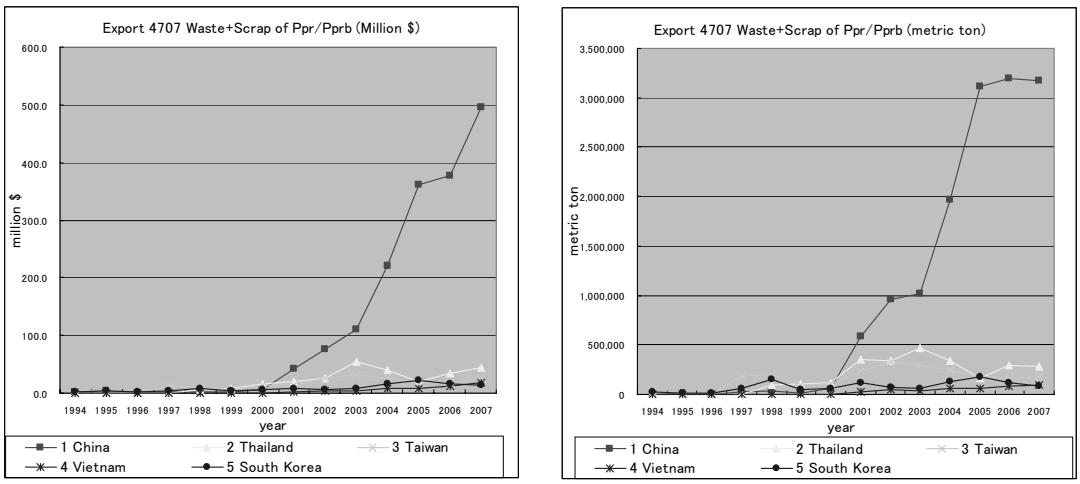
97. Standardized collection routes have not yet been established for some types of used paper such as milk packaging and office paper. Instead, local governments and businesses are dealing with them though their own collection routes. According to the Paper Recycling Promotion Centre (2007), the used paper collection rate[10] was 74%, and its utilization rate[11] was 61% in 2007. The rates have been increasing from year to year, however, there is a significant gap between the utilization rate for the cardboard production (92.9%) and paper production (39.2%).

98. The majority of used paper collected in Japan is reused by domestic paper manufacturers, exports of used have increased rapidly in recent years. This is mainly because of the rapid economic growth of China. In China, the volume of paper production has been drastically increasing every year, driving up the demand for used paper. Based on interviews with exporters, the growing demand for used paper in China is resulting in a shortage of containers for transportation.

Export and import of used paper and board

99. China is Japan's largest export partner for used paper. Exports of used paper to China represented US$495.93 million in 2007. Exports of used paper to China drastically increased in 2001 and have been growing since. China is also the largest partner in terms of export volume with about 3.17 million tons exported in 2007. The volume of used paper exported to China has sharply increased since 2000. However, between 2005 an 2007 the value of the exported materials increased while, the export volume remained more or less unchanged.

Figure 1. Exports of Used Paper for the years 1994-2007



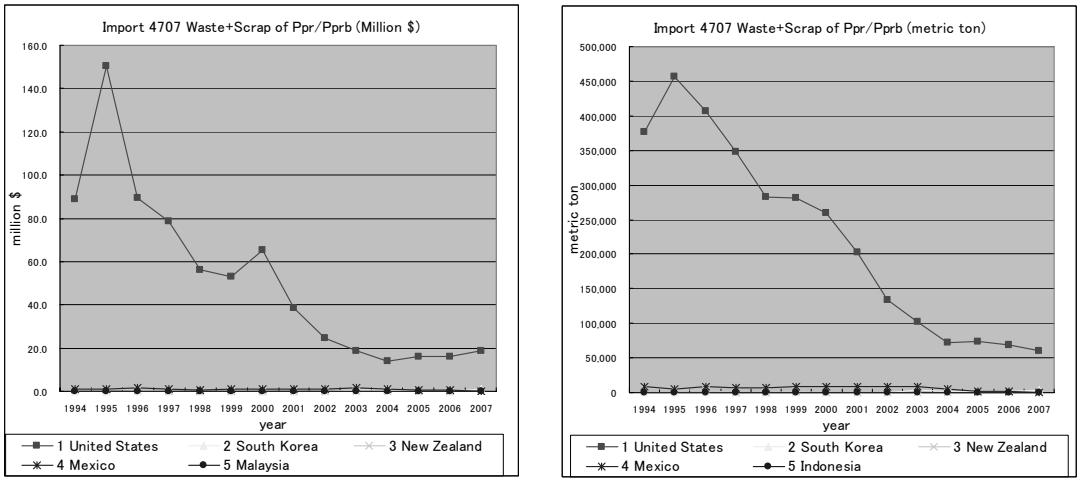
Source: UN comtrade.

100. Most of the used paper imported into Japan is from the United States. In 2007 those imports represented US$18.51 million and 60,000 tons, but have been decreasing since 1995.

10 "Used-paper collection rate" is the ratio of the paper collected as "used-paper" out of the paper and cardboard actually used.

11 "Used-paper utilization rate" is the ratio of the used-paper used as raw material to manufacture paper and cardboard.

Figure 2. Imports of Used Paper for the years 1994-2007



Source: UN comtrade.

Table 20. Exports and Imports of Recovered Paper in 2007

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 US-Dollars	1,000 tons	1,000 US-Dollars
470710	Waste or scrap from unbleached craft or paperboard	43	11,302	1,664	259,295
470720	Waste or scrap from paperboard of bleached chemical pulp	16	6,434	141	25,656
470730	Waste or scrap from paper or board of mechanical pulp	4	873	1,443	231,453
470790	Other paper waste from scrap of paper or board	3	1,517	595	94,038
4707	**Total**	**67**	**20,125**	**3,844**	**610,441**

Source: UN comtrade.

Production and consumption of plastic scrap

Structure of production and consumption of plastic scrap in Japan

101. According to the Plastic Waste Management Institute (2007) the domestic consumption of plastic waste products was 11.2 million tons in 2006. The total volume of discarded plastic waste was 10.05 million tons--4.98 million tons of industrial waste and 5.08 million tons of municipal waste. Of this amount, 9.16 million tons was discarded used products and 0.89 million tons was production/ processing loss. At each phase of the production process, processing and disposal may be conducted in the different ways. These are listed below and explained in Figure 3: Recycling; Oil-liquefaction[12]; Gasification[13]; Use

12 Oil liquefaction: As the raw material of plastics is oil, oil liquefaction is a process to convert plastics back to the original oil by reversing the process of producing plastics.

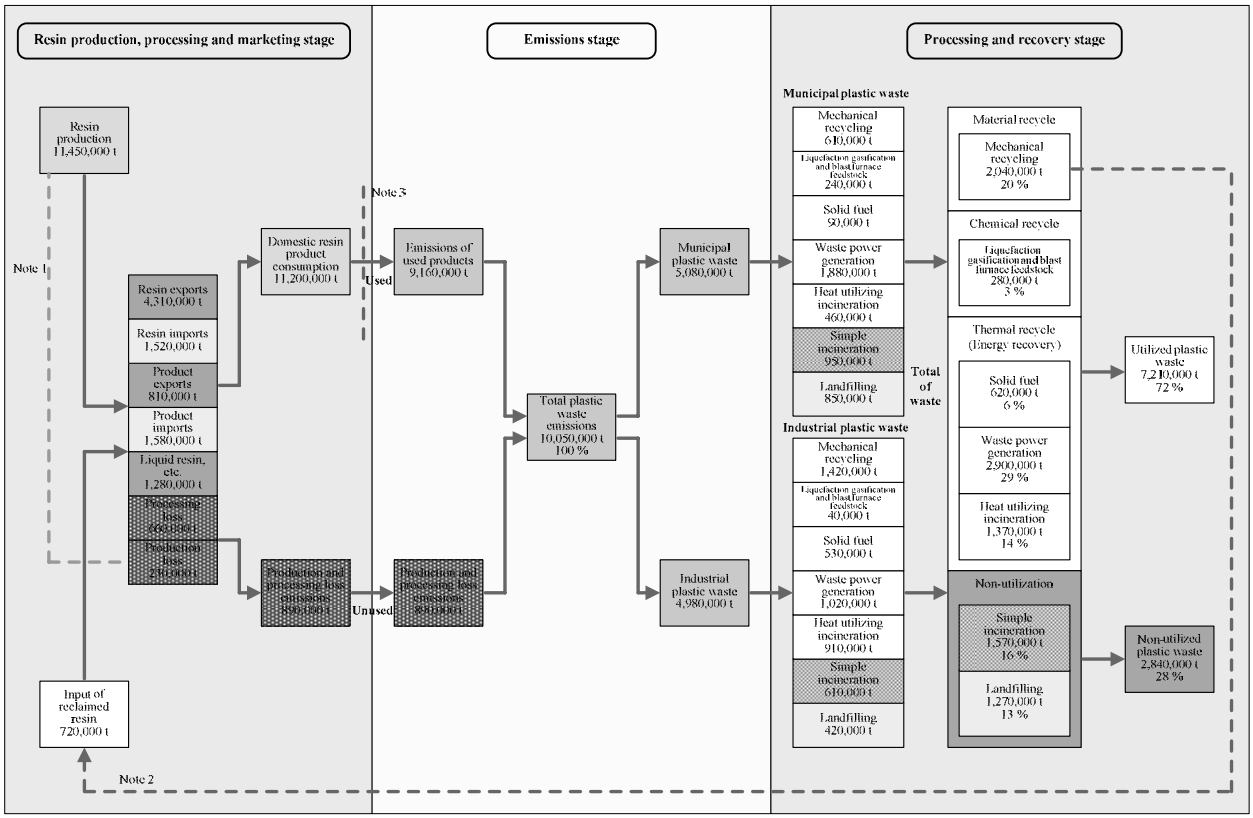
13 Gasification: This is a process to generate mixture of gas composed of carbon monoxide and hydrogen by applying oxygen and steam to plastics and heating it. This mixed gas becomes the chemical industrial raw material to generate hydrogen, methanol ammonia and acetic acid.

as raw materials for blast and coke furnaces[14]; Solid fuel[15]; Waste power generation[16]; Waste-incineration heat use[17]; Direct incineration; Land fill.

102. The utilization of waste plastics in Japan grew steadily in 2006, reaching 72 % of the total amount.

103. In the same year, the amount of material recycled was 2.04 million tons total. Thirty five percent of the recycled materials was used to produce plastic products such as film sheets, piles, and pipes, and 65% was used to produce plastic pellets, flakes, fluff, blocks and ingots.

Figure 3. Flow Diagram of plastic products, waste and recycling in Japan (2006)



Note 1 Production loss is resin not included in resin production
Note 2 For convenience, input of reclaimed resin in 2006 was calculated by subtracting 600,000t of export from the 1,060,000t reclaimed amount in the previous year.
Note 3 Amount of used products (9,160,000t) is estimated by the Plastic Waste Management Institute based on the resin consumption data and product life time data.

Source: Plastic Waste Management Institute (2007)

14 Raw material to blast and coke furnaces: In steel mills, pig iron is produced by feeding iron ores, cokes and secondary raw materials to furnaces and melting the iron ores. At that phase, cokes not only make the temperature of the interior of furnaces high as fuel but also function as the reducing agent to deprive oxygen of oxidized iron, which is the main component of iron ores. As plastics are made from oil, they can also be used as a reducing agent in place of cokes.

15 Solid fuel: This is a type of a solidified fuel, which is produced by pressing and moulding dried and well segregated, crushed waste plastics.

16 Power generation by waste: A representative example is the system where steam is generated in boilers by high-temperature incineration gas generated when waste is incinerated, and power is generated by turning turbines by the generated steam.

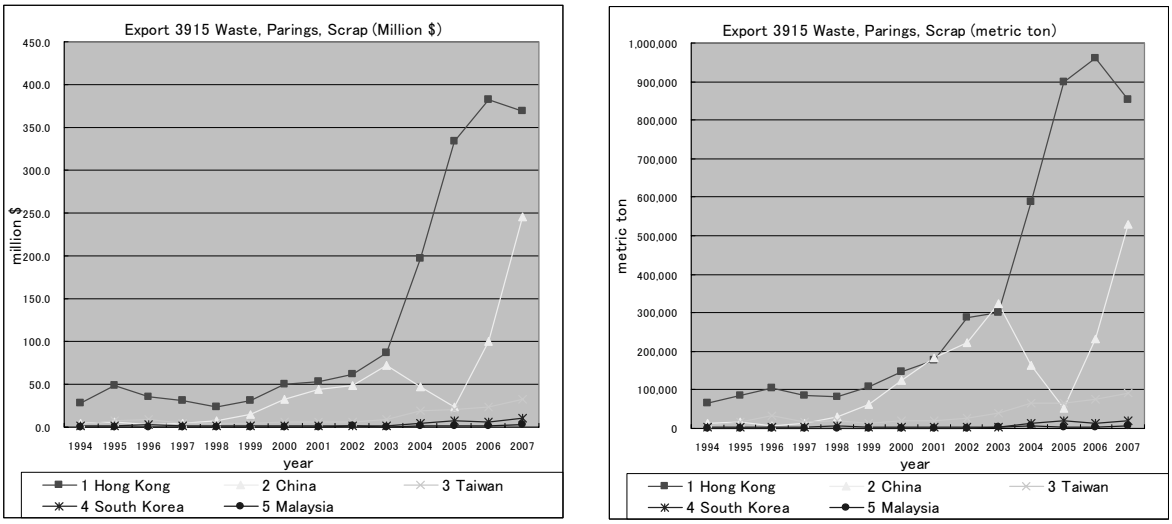
17 Waste-incineration heat use: Discharge heat generated by incinerating waste can be utilized for multiple purposes, such as for greenhouse cultivation and for warm-water pools.

Exports and imports of plastic scrap

104. Japan's largest export partner for plastic waste is Hong Kong, representing US$370 million and 853,000 tons in 2007. Since 1998, both the value and volume of exports to Hong Kong have been increasing. Exports to mainland China fluctuate in recent years with an increase until 2003, then a sudden decrease in 2004 and 2005, followed by a sharp increase again in 2006 and 2007.

105. The main reason for the sudden decrease of exports from Japan to China was the import ban imposed by the Chinese government on plastics from Japan in late 2004. The measure was taken on the grounds that they found hazardous substances in waste plastics imported to Shandong Province during the period from late 2003 through early 2004. The import ban was lifted in September 2005 after which exports of waste plastics from Japan to China started to increase again. Terazono(2006) pointed out that exports to China via Hong Kong increased during the period of import prohibition, and that even after the prohibition was lifted exports to Hong Kong remained high.

Figure 4. Exports of Plastic Scrap for the years 1994-2007



Source: UN comtrade.

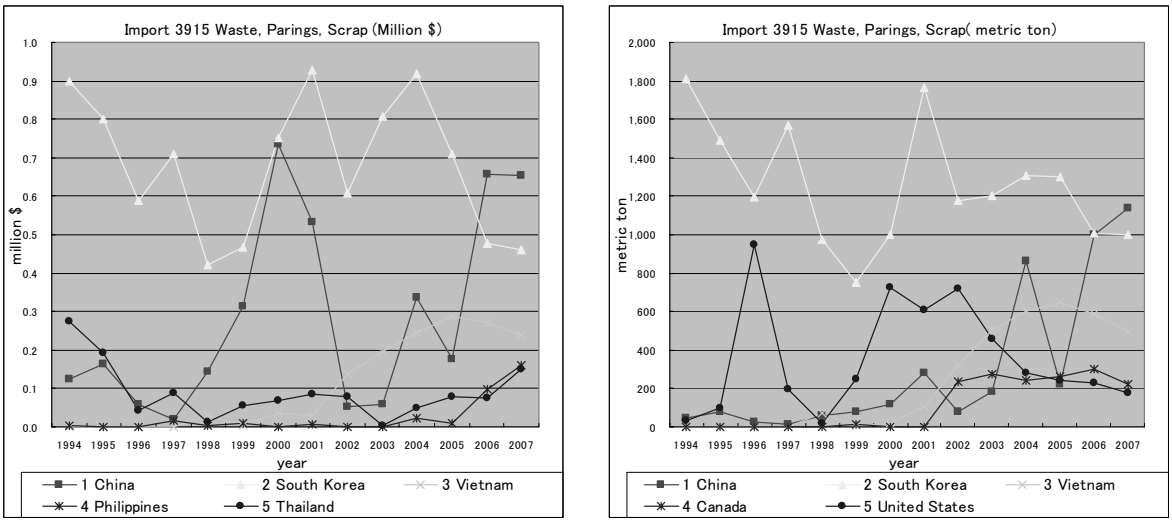
106. Japan's largest trade partner for plastic scrap is China, with exports representing about US$650,000 and 1, 130 tons in 2007. Import volumes are comparatively small and show considerable fluctuation.

Table 21. Exports and Imports of Plastic Scrap in 2007

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 US-Dollars	1,000 tons	1,000 US-Dollars
391510	Polyethylene waste or scrap	2	1,129	336	141,910
391520	Polystyrene waste or scrap	0	21	232	102,304
391530	Polyvinylchloride waste or scrap			57	17,352
391590	Other plastic waste or scrap	1	913	893	407,206
3915	**Total**	**4**	**2,063**	**1,517**	**668,772**

Source: UN comtrade.

Figure 5. Imports of Plastic Scrap in the years 1994-2007



Source: UN comtrade.

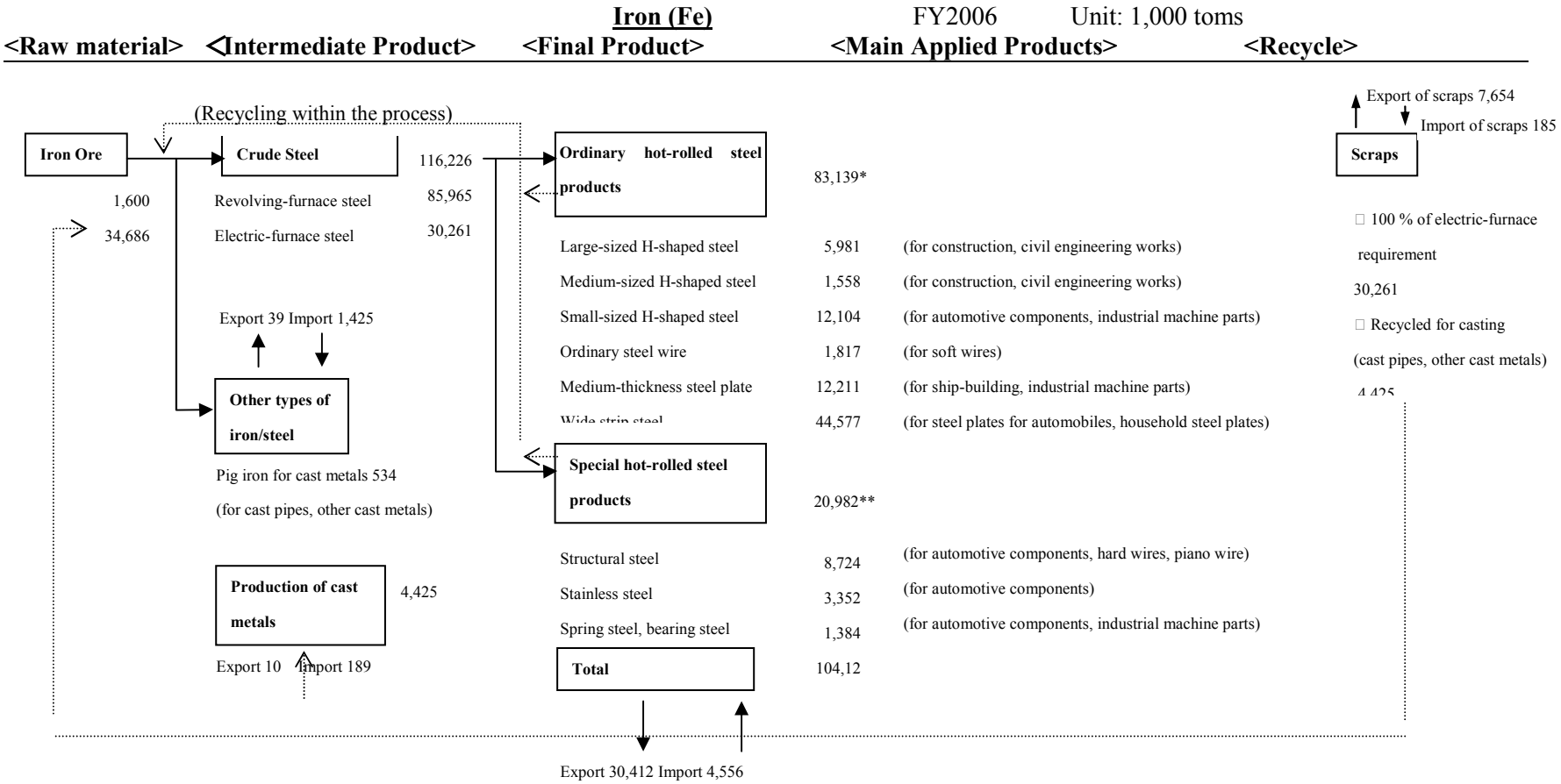
Production and consumption of steel scrap

Structure of production and consumption of steel scrap in Japan

107. Steel scrap can fall into one of three types. The first type is scrap generated during the steel production process which is re-used in the process and will not be traded in the market. The second type is scrap collected during the manufacturing process of products in the machine industry, the automobile industry, and the ship industry. The third type of steel scrap is collected from used goods such as end-of-life vehicles or industrial machines. The second and third types of steel scrap are treated within the market. These are often gathered by scrap collectors and sold to scrap processing companies where they may be processed using one of several methods depending on the quality of the material. After the processing, the scrap is either exported or recycled in domestic steel plants.

108. The volume of steel scrap generated in Japan in 2006 was about 50 million tons. Of this amount, about 7.6 million tons was exported, 30.26 million tons was used to build domestic electric furnaces and about 4.4 million tons was used in the production of cast pipes, such as water pipes, and other cast articles, such as cast iron and cast steel.

Figure 6. Flow diagram of Steel and Steel scrap in Japan



(Iron ore reserve) 79,000 million tons (USGS: MCS 2007). Sources: "Monthly Statistics for Steel, Non-ferrous Metals and Metal Products" issued by METI, "Supply and Demand Situation of Steel", statistical data issued by the Iron and Steel Institute of Japan, and "Up-to-date Information on Supply and Demand of Ferrous Raw Metals", from the Web-site of the Japan Ferrous Raw Metals Association

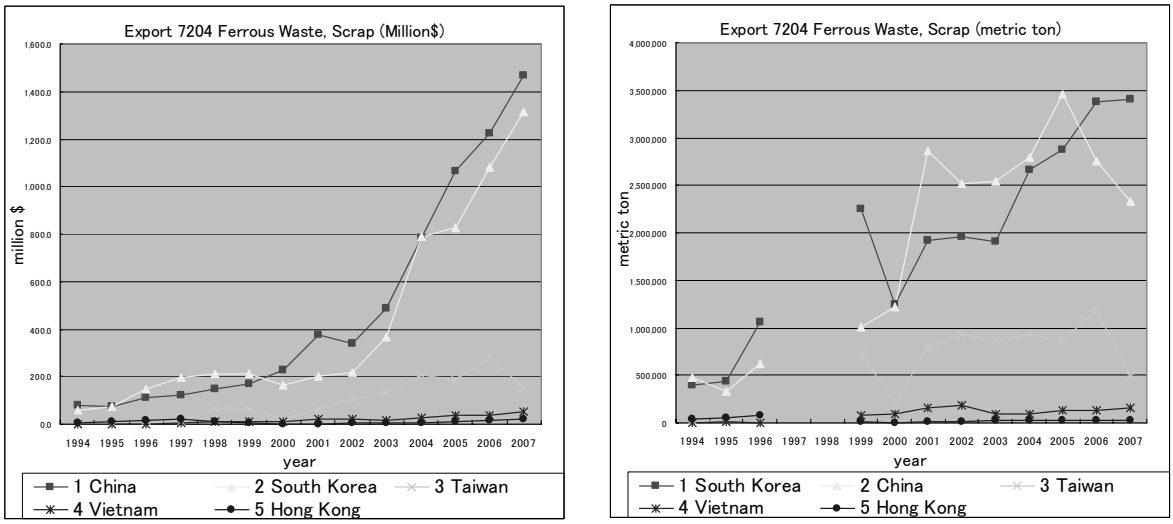
* 85,965,000 tons as crude steel for ordinary steel ** 30,261,000 tons as crude steel for special steel

Exports and imports of steel scrap

109. China is Japan's largest export partner with trade representing nearly US$1,466 million in 2007. In terms of export volume, however, Japan's largest trade partner is Korea with 3.4 million tons exported in 2007.

110. One of the notable trends of the export of steel scrap from Japan is that, while the monetary value of the exports increased constantly after 2000, the volume fluctuated.

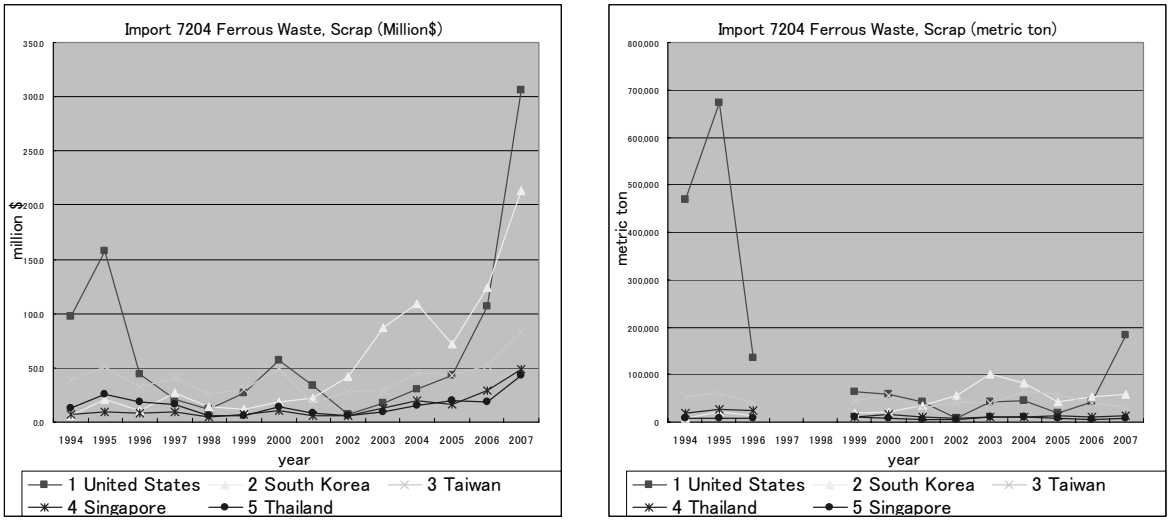
Figure 7. Exports of Steel Scrap for the years 1994-2007



Source: UN comtrade.

111. The United States is the largest source of imports of steel scrap to Japan, with trade representing about US$361.4 million and 183,770 tons in 2007.

Figure 8. Imports of Steel Scrap for the years 1994-2007



Source: UN comtrade.

Table 22. Exports and Imports of Steel Scrap in 2007

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 US-Dollars	1,000 tons	1,000 US-Dollars
720410	Waste or scrap from cast iron	0	167	10	4,200
720421	Waste or scrap from stainless steel	181	655,974	220	544,692
720429	Waste or scrap from allot steel other than stainless	33	150,349	32	37,555
720430	Waste or scrap from tinned iron steel	1	180	3	725
720441	Waste from mechanical working of iron or steel	1	1,209	614	212,781
720449	Other ferrous waste or scrap	121	39,200	5,552	2,239,508
720450	Re-melting scrap ingots, from iron or steel	0	871	17	8,422
7204	**Total**	**338**	**847,949**	**6,447**	**3,047,883**

Source: UN comtrade.

Analysis of trade flows

112. This study shows that Japan's exports of used paper, steel scrap and waste plastics have increased in recent years. The main driver for this increase was the increase in demand from China. The rise of imports by Korea also contributed to increased volume of steel scrap exports from Japan.

113. In recent years, the amount and volume of imports to Japan were smaller than those of exports.

114. The main source of imports of used paper and steel scrap is the United States. The volume of imports of used paper from there has been decreasing year after year. According to the Paper Recycling Promotion Center, the reason for this decrease is that the amount of used paper collected domestically in the US has been increasing.

115. The cost of imported steel scrap has increased. Since the imported amount remains at approximately the same level, this increase is a reflection of a global rise in the price of steel scrap.

116. The main trade partners for the three materials are shown in table below.

Table 23. Key import and export markets for each material in 2007

Materials	Exports		Imports	
	Country	Amount (1000 tons)	Country	Amount (1000 tons)
Paper and board	China	3,169,516	United States	60,780
	Thailand	279,397	South Korea	4,033
	Taiwan	175,635	New Zealand	883
Plastic scrap	Hong Kong	852,584	China	1,135
	China	530,832	South Korea	1,003
	Taiwan	91,424	Vietnam	499
Steel scrap	South Korea	3,398,905	United States	183,767
	China	2,326,053	South Korea	59,011
	Taiwan	496,468	Taiwan	32,912

Source: UN comtrade

Legal and Policy Framework

General legal and policy framework for waste management

117. The legal and policy framework for waste management is defined in the Waste Management and Public Cleansing Law. The law stipulates that the country must set up the following:

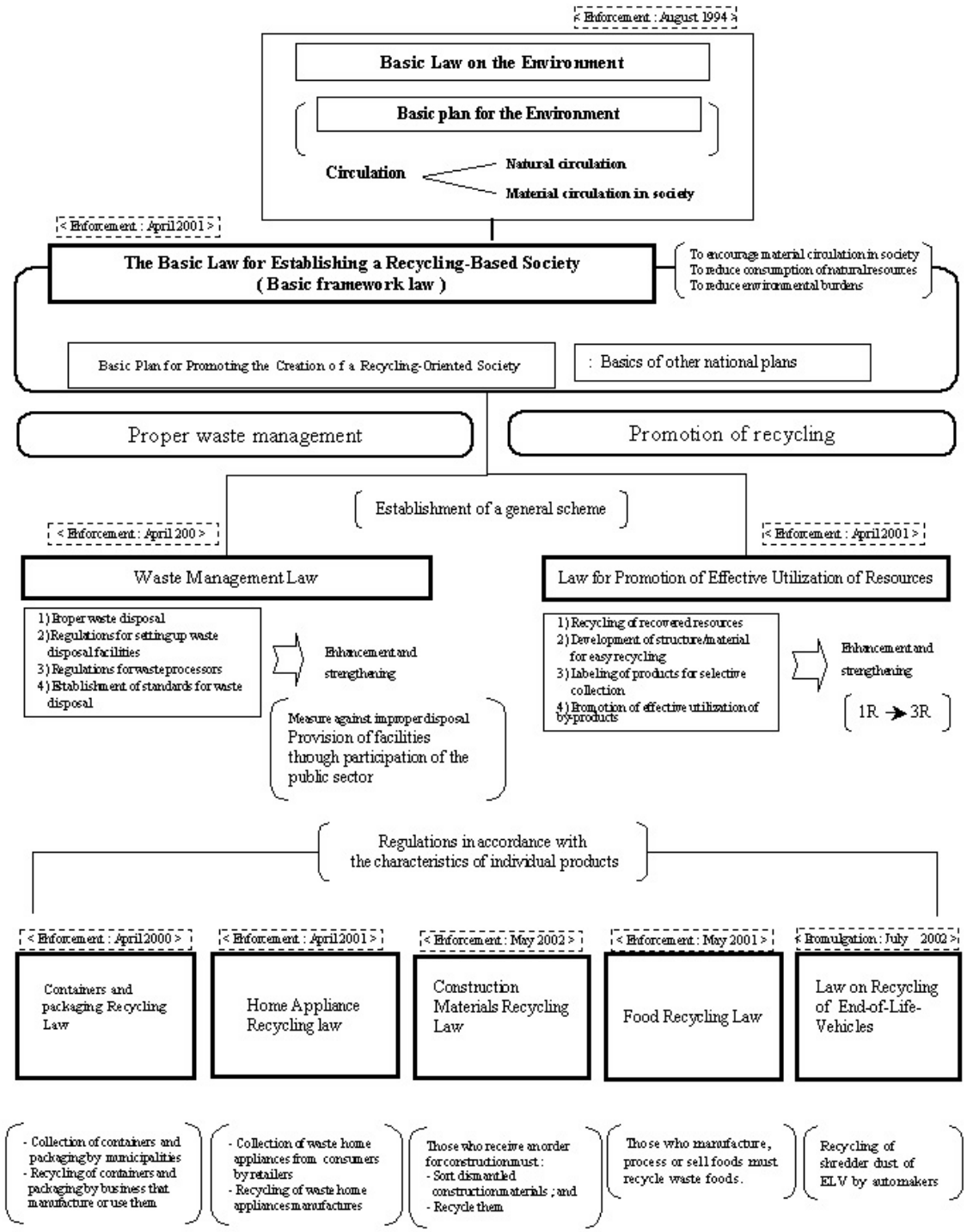
- Proper waste disposal,
- Regulations for setting up waste disposal facilities,
- Regulations for waste processing,
- Standards for waste disposal.

118. According to the Waste Disposal Law, "waste" is defined as "materials in solid or liquid form, which have become unnecessary because they are no longer usable as they are and/or no longer sellable to

others." In the Basic Law for Establishing the Recycling-Based Society, "waste" is defined as the "used-out goods, collected/disposed goods, and goods secondarily used for activities of human beings."

119. In the overall plan for waste management and promotion of recycling, the different recycling processes are defined by the laws shown in Figure 9, depending on the material in question.

Figure 9. General legal and policy framework for waste management and recycling in Japan



Source: METI.

Policy framework for exports of non-hazardous recylable resources

Principles for domestic treatment of waste

120. In 1992, when the national law based on the Basel Convention was enacted ("Law for the Control of Export Import and Others of Specified Hazardous Waste and Other Wastes") the Waste Management and Public Cleansing Law was amended and "principles for domestic treatment of waste" were stipulated. According to these principles, waste generated in Japan must be properly treated in Japan, and any exports to other countries must be inspected by the Minister of the Environment. Additionally, waste imported from overseas must be properly controlled, so as to not taint the treatment of waste generated in Japan. The following criteria are used to inspect exported waste:

- Proper domestic treatment is difficult in light of the domestic facilities and technologies for the treatment of the waste in question, or it is certain that the waste in question will be recycled for use in the importing country;
- The waste in question will not be treated using a method below domestic standards;
- The applicant in the importing country should be a body vested with the legal responsibility for disposal (i.e., a municipality for general waste or a waste-generating business entity for industrial waste.).

121. Because these legal provisions were in place, exported waste wasn't inspected between 1992 and 2002. However, when the "Technical Criteria Concerning Export Verification of Ordinary Waste and Industrial Waste" was established in August 2002, it became legitimate to verify exports in cases where domestic treatment was not difficult, as long as recycling in the importer country was certain.

Export-related provisions and recycling methods under individual recycling laws

122. Following are the laws that regulate individual recycling: the "Container/Packaging Recycling law", the "Home Electric Appliance Recycling Law," the "Law for the Promotion of Effective Utilization of Resources," and the "End-of -Life Vehicle Recycling Law." These laws encourage and facilitate the collection of domestic recyclable resources and help supply them to the recyclable resources trade market. Provisions in the laws related to exports are summarized below.

Table 24. Outline of Individual Recycling Laws, and Recycling Methods and Export-related Stipulation under each Law

Law	Outline of the Law	Recycling Method	Export-related Provisions
The Law for the Promotion of Sorted Collection and Recycling of Containers and Packaging (Container and Packaging Recycling Law, est. 1995; enacted 1997)	Collection / recycling system is stipulated for the packaging of the 4 types of packaging such as glass bottles, PET bottles, plastic containers/packages, and paper containers/packages.	**Glass bottles:** cullet processing **PET bottles**: recycling into flakes, pellets, or polyester raw materials **Plastic containers and packaging**: recycling into products, pellets, flakes, EPS granules, ingots, fluff, etc., oil, gasification, coke-oven chemical raw materials, use as blast furnace reducing agents **Paper containers and packaging**: recycling as solid fuel, paperboard and other products, paper raw materials	No stipulation (Container/Package Recycle Association considers only PET pellets as exportable. Plastic containers/ packages are not permitted to export.)
The Law for Recycling of Specified Kinds of Home Appliances (Home Appliances Recycling Law, est. 1998; enacted 2001)	Collection / recycling system is stipulated for TV sets, refrigerators, and air conditioners.	No description	No stipulation (Depending on home electric appliance recycling facilities, certain policy is said to be in place.)
Law for the Promotion of Effective Utilization of Resources (est. 2000; enacted for office computers in 2001; enacted for home computers in 2003)	As the designated recyclable resource items, personal computers and small-sized secondary batteries are designated, and collection and recycling thereof are being conducted as the industry's voluntary measures.	No description	No stipulation
Law for the Recycling of End-of-Life Vehicles (est. 2002, enacted 2005)	Collection / recycling system are stipulated for all vehicles except for bicycles and special vehicles.	C**FCs**: destruction **Airbags**: recovery / actuation, etc. **Shredder residues**: material recycling or heat recovery In addition to the above, pressed and sheared ELV can be cast into electric furnace or steel converters (whole recycling) or exported as scrap metal	There is no stipulation related to export, except for the following. - With respect to used- cars for export, they are not subject to the law, based on the refund of recycling charges. - Items exported as scrap are considered to be used up entirely.

Source: modified from Table 2-2, p.26 of Kojima et al. (2005)

Enforcement action related to the shipment of waste

Enforcement of the Basel Convention

123. Recyclable materials such as steel scrap, may contain hazardous components, which must be eliminated before the scrap is exported. The Basel Convention gives criteria for determining non-recyclable waste and for establishing whether a recyclable material is hazardous or non-hazardous. The Japanese government has been taking the following measures to ensure the Basel Convention is enforced:

Instruments within Japan

124. Briefing on the Basel Convention. Every year the Ministry of the Environment (MOE) and the Ministry of Economy, Trade and Industry (METI) jointly hold briefings on the Basel Convention, on related domestic laws, and on procedures for exporters of waste.

125. Prior consultation of the legislation related to the trade of waste/recyclables. Parties who wish to export waste can address the department in charge of consulting the MOE or the METI to determine whether the material intended for export is prescribed as waste in accordance with the Waste Disposal Law or as hazardous waste under the Basel Convention. For example, when a company cannot determine whether a material intended for export is categorized as hazardous waste under the Basel Convention, it can consult with the authorities for clarification. Prior to this consultation, the exporter must submit documents that describe the exporter and the importer, the composition of the waste, the treatment methods applied to this waste and past records of the waste. The required documents are:

- A form describing the required verification for the intended export
- A document recording prior consultation of the Waste Management and Public Cleansing Law and Basel Convention-related regulation
- A flow chart of the waste movement and the associated monetary transactions
- Documentation (such as invoices and contracts) of transactions between the waste generator, export/ import transporters, and the disposing company.
- Photographs of the waste
- Documents describing the waste generation process and treatment (process diagram, photographs of facilities, description of related companies)

126. The following documents are to be submitted if required by the Ministry:

- A permit issued in accordance with the Waste Disposal Law
- An analytical table showing the chemical composition of the material
- A permit issued by the importing country
- Other related documents

127. Dialogue with customs officials. The Section in charge of the Basel Convention periodically communicates with customs officials on cases involving illegal exports.

Cooperation with overseas organizations

128. The Japanese government has been engaged in policy dialogues with foreign governments and has exchanged information regarding the definition of waste and hazardous waste materials. Additionally, the Japanese government played a leadership role in establishing "The Asian Network for Prevention of Illegal Transboundary Movement of Hazardous Wastes." Japan has also sought out periodic opportunities to share information on illegal transboundary movements of hazardous waste and other waste with the relevant authorities in east and southeast Asian countries.

Policy and customs regulations related to the trade of recyclable materials

129. Japanese Customs developed several policies and systems to simplify and facilitate the trade procedure for non-hazardous recyclable materials.

Sea-NACCS (Nippon Automated Cargo Clearance System)

130. Sea-NACCS is a computer system that has been in operation since October 1991. This system established electrical customs procedures for import and export cargo shipments. The system has simplified customs procedures and helped shorten the administrative transaction period. Approximately 95% of all import/export declarations for cargo transported by sea are processed through this system.

Authorized exporter system (AEO program)

131. When certain conditions are met—such as no violation of laws or regulations over a designated period of time—the exporter can simplify the export procedure using the Authorized Exporter system. This system is based on World Customs Organization (WCO) AEO (authorized economic operator) guidelines. Through a process of mutual recognition, the trading procedure in the importing country is simplified as well.

Regulation on exports to China

132. Due to the illegal importation of cases of waste and non-hazardous materials into China, the Chinese Government strengthened import-related legislation for these materials in 2003.

133. In 2003, the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ), established a registration system for foreign exporters of non-hazardous recyclable resources to China. The Chinese government started to receive applications from foreign exporting companies in December 2003. After reviewing data, such as three-year export history, acquisition of ISO14001, and the scale and status of the individual exporting companies' facilities, the first round of registrations for exporting companies was held. As a result, 315 certifications were granted to Japanese companies.

134. The registered companies are required to be inspected by a designated institution before the materials are shipped. These institutions are JCIC (Japan China Commodities Inspection Company Limited) for the eastern part of the country and CCIC Japan (China Certification & Inspection (Group)-JAPAN Co. Ltd) for the western part. Both were partly or fully established by CCIC (China Certification & Inspection Group Co. Ltd), a company designated by the Chinese government to oversee trade inspection and certification. Starting in September 2006, pre-shipment inspection of raw waste materials was performed using an electronic system.

Perceived Measures Hampering Trade

135. Interviews with exporters and importers, industrial associations and governmental bodies were conducted to identify possible measures hampering exports and imports of non-hazardous recyclable materials. As described in the Section on analyses of trade flows, the Chinese government prohibited imports of plastic scrap from Japan in late 2004 after illegal exports of the material were detected in violation of the Basel Convention. The ban on imports was lifted in 2005. While there have been no reported issues with regard to the trade of steel scrap and used paper, interviews with experts from steel scrap recycling associations and with journalists revealed concern about a particular type of steel scrap, categorized as HS Code No. 7204.49.

Issues associated with the steel scrap categorized as HS Code No. 7204.49

136. Steel scrap collected and distributed within Japan is classified into several grades according to the generating sources and/or the quality of the material, which is categorized as Item No. 7204 in the HS Code. One of the grades is HS Code No. 7204.49, which is described as "ferrous waste & scrap excluding Items No.7204.10 - 7204.41." This category includes the rest of the items clearly categorised, therefore, there is a higher possibility that small amounts of materials other than steel—such as copper and plastics—are contained in the scrap.

137. There is little demand for this scrap in Japan because of its quality and the cost of segregating the materials. However, rapid and considerable economic growth in developing countries in Asia has brought about huge demand for recyclable materials and led to increased export of materials of this category from Japan. The materials categorized as HS Code 7204.49 account for about 74% of the steel scrap exported from Japan. The segregation of elements is done manually in import countries where labor costs are low.

138. Recently fires broke out in Tokyo Bay[18] in a vessel loaded with steel scrap. It was reported that the ignition may have been caused by waste batteries or other flammable substances contained in the steel scrap. Some experts from an association concerned with steel scrap recycling as well as several journalists pointed out that these incidents demonstrate that there were hazardous materials in the exported steel scrap HS Code No.7204.49. They also suggested that the potential for hazardous materials in exported steel scrap is the highest in the HS Code No.7204.49 of all the HS Code 7204 series. The hazardous materials contained in HS Code No.7204.49 could lead to environmental pollution and have a negative impact on human health if the separation and extraction of valuable materials from them is performed by the informal sector in the importing country without adequate recycling and disposal technologies.

Vagueness of the definition of steel scrap categorized as HS Code NO. 7204.49

139. Because of the recent sharp growth in imports of steel scrap in developing countries, the number of traders handling HS Code No. 7204.49 materials is increasing, some of whom violate the Basel Convention and perform illegal trade. Currently, the majority of steel scrap businesses deal with scrap categorized as HS Code No. 7204.49, whose composition is unclear. This lack of clarity makes it difficult to identify the cause of problems and could lead to the receiving countries tightening their regulations on the trade of such materials, or introducing trade policy instruments such as import bans.

[18] Fire incidents of freight boats shipped steel scrap have occurred 3 times in 2005 and 8 times in 2006, according to Japan Coast Guard.

Discrepancy of trade data

140. There is a huge gap between trade statistics in the reports by Japan and China in reference to HS Code No. 7204.49 (see Table 25). The material declared to customs as HS Code No. 7204.49 in Japan seems to be handled as copper scrap and incorporated into the statistical figure for copper scrap (HS Code 7404.00) on the Chinese side. Explaining the reason for the gap, some traders pointed out that steel scrap exported from Japan under HS Code No. 7204.49 is not accepted as such by the Chinese Customs Office. The importers may declare the same material under HS Code No. 7204.49 to the Japanese Customs and HS Code 7404.00 to the Chinese Customs. Why the Chinese Customs Office treats the material as copper scrap is unclear, but several exporters suggest that this is partly because of the higher import duties for copper scrap compared to those for steel scrap.

Table 25. Trade of Steel Scrap 7204.49 from Japan to China

		Trade Value (1,000 US dollars)		Net Weight (1,000 t)	
Reporting country		Japan (exports)	China (imports)	Japan (exports)	China (imports)
Year	2004	$753,014	$318,499	2,718	1,294
	2005	$1,016,286	$441,821	3,367	1,756
	2006	$1,031,622	$219,762	2,592	908

Source: UN Comtrade.

Table 26. Trade of Copper Scrap 7404.00 from Japan to China

		Trade Value (1,000 US dollars)		Net Weight (1,000 t)	
Reporting country		Japan (exports)	China (imports)	Japan (exports)	China (imports)
Year	2004	$206,641	$659,132	319	1,606
	2005	$355,968	$916,877	385	1,875
	2006	$602,720	$1,138,041	373	1,948

Source: UN Comtrade.

141. In order to cope with the issues just mentioned, some suggest that a more detailed description of materials listed under HS Code No. 7204.49 would be necessary. Further discussion is needed to judge whether this is a viable solution, but several actors have a common concern that the vagueness of HS Code No. 7204.49 could lead importing countries to impose measures hampering trade.

Procedures applied by the importing country

Issues associated with exports to China

142. Chinese regulation generates specific issues.

143. Before shipping, each exporter is required to register with AQSIQ as an exporter of waste materials to China and obtain an export permit. After the permit is granted, the exporter must undergo a pre-shipment inspection performed by JCIC. This inspection may take anywhere from several days to one week. An exporter of steel scrap claimed that, even when the exported material is the same, approval is sometimes given and sometimes not in the pre-shipment inspection. On the other hand, several exporters of plastic scrap and paper scrap testified that the inspection of JCIC is clear and consistent. The reason for the

discrepancy could be the difference in the recyclable materials they export. As mentioned before, the composition of the materials contained in the category of HS Code 7204.49 is unclear, which makes it difficult for the inspectors of JCIC to judge whether the material can be imported in accordance with the Chinese permissions list. However, exporters generally recognize that the Chinese government's permit and pre-shipment inspection policies are necessary from the standpoint of environmental protection and in light of the past illegal export cases[19].

144. Chinese regulation generates other, sector specific, issues. According to several traders of plastic scrap, no clear measures have been imposed by importing countries that hamper trade of those materials. According to one particular company, it must consult with JCIC (Japan China Commodities Inspection Company Limited) prior to each export, in accordance with JCIC procedures. The whole process takes about three days, which is faster than the process for exporting steel scrap. This exporter indicated that this turn-around time was acceptable.

145. In general, the change of market price is critical for an exporter, making a shorter process preferable. When a company has storage in Japan and recycling facilities in China, it can absorb the fluctuation in market price and be more flexible about the processing time. On the other hand, for small companies that have no regular storage or recycling facility and are doing business as middlemen, the daily fluctuation of market prices is more critical, and they tend to perceive the prior consultation of the Chinese trade system as a time consuming and cumbersome process. This means that, in some cases, the perception of whether or not a procedure hampers trade depends on the size and capacity of the exporting company.

Concluding Remarks

Trade flow of recyclable materials

146. This study shows that, at the time of the review, Japan's exports of used paper, steel scrap and waste plastics increase. The main driver for this increase was the increase in demand from China. The rise of imports by Korea also contributed to increased volume of steel scrap exports from Japan.

147. In recent years, the amount and volume of imports to Japan were smaller than those of exports. The main source of imports of used paper and steel scrap is the United States. The volume of imports of used paper from there has been decreasing year after year.

Issues related to potential measures hampering trade

148. Although no explicit measures hampering the trade of non-hazardous recyclable materials can be identified in Japan, a few concerns which could potentially lead to such measures are mentioned in the previous chapter. Following are recommendations for responding to those concerns.

Coping with problems derived from the vagueness in the trade category

149. A wide range of materials may be contained in steel scrap categorized under HS Code 7204.49. Reports indicate that hazardous substances could be mixed in and traded under this category. The vagueness of the category undermines the transparency of trade, and could lead to measures that hamper trade, such as trade bans[20]. To address this problem, further specification of the category is needed in the

[19] For example, hazardous substances (medical waste) in plastic scraps imported to Shandong Province was found during the period of 2003 to 2004 and the Chinese government prohibited the import of plastic scrap from Japan until 2005.

[20] In a reaction the Japanese government indicated that the procedures applied by Japan are that it examines whether the materials are hazardous or not in light of the standard imposed by the relevant law of the Basel

HS Code. However, it is debatable whether or not the segmentation of the code alone could solve the problem, and further discussion of other possible solutions is necessary, such as whether promoting proper sorting of the scrap at the source of generation could more effectively eradicate the potential risk of hazardous substances in the scrap.

Consistency of Statistical Data

150. The study revealed inconsistencies in Japanese and Chinese trade statistics with regard to the composition of steel scrap categorized under HS Code 7204.49. For the discussion of the trade of non-hazardous recyclable materials, accuracy of the basic data is crucial. The relevant authorities must recognise the issues and discuss ways to make the trade data consistent.

Incentives for companies to develop ESM capabilities

151. It is also necessary to encourage business entities to exercise proper environmental oversight of their exported non-hazardous recyclable materials. Japanese customs introduced the AEO program into the trade procedure and launched discussions about mutual recognition with trade partner countries. The AEO program itself is a system for all traded goods. There are several exporters of non-hazardous recyclable materials in Japan which are authorized in the AEO program and are given preferential treatment in the trading process. Giving preferential treatment to exporters and importers with high ESM ability and compliance with the AEO program will improve the proper trade of non-hazardous recyclable materials.

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Appendices

Annex 1. Trade data 2004, 2005 and 2006

152. Trade data from UN COMTRADE database for recovered paper, plastic scrap and steel scrap for 2004, 2005 and 2006.

Convention. In detail, materials exceeding the standard are regulated as hazardous ones; those not exceeding the standard are traded under normal trade regulations. It is natural to impose export approval procedure on controlled substances. Japan does not impose a ban on trade on them.

Table 27. Recovered Paper in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	68	12,556	1,144	132,903
470720	Waste or scrap from paperboard of bleached chemical pulp	5	1,981	50	6,327
470730	Waste or scrap from paper or board of mechanical pulp	5	1,034	1,273	144,180
470790	Other paper waste from scrap of paper or board	3	920	368	41,608
4707	**Total**	**81**	**16,491**	**2,835**	**325,018**

Table 28. Recovered Paper in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	65	12,988	1,623	189,560
470720	Waste or scrap from paperboard of bleached chemical pulp	7	2,201	97	11,994
470730	Waste or scrap from paper or board of mechanical pulp	4	838	1,505	179,322
470790	Other paper waste from scrap of paper or board	2	603	486	55,752
4707	**Total**	**77**	**16,629**	**3,710**	**436,628**

Table 29. Recovered Paper in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	55	11,749	1,671	195,614
470720	Waste or scrap from paperboard of bleached chemical pulp	14	4,399	134	18,800
470730	Waste or scrap from paper or board of mechanical pulp	2	383	1,543	186,497
470790	Other paper waste from scrap of paper or board	1	488	539	63,165
4707	**Total**	**72**	**17,019**	**3,887**	**464,076**

Table 30. Plastic Scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	2	945	212	55,888
391520	Polystyrene waste or scrap	–	–	159	52,795
391530	Polyvinylchloride waste or scrap	0	23	33	8,461
391590	Other plastic waste or scrap	2	1,276	444	157,197
3915	**Total**	**4**	**2,245**	**849**	**274,341**

Table 31. Plastic Scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	2	803	262	78,947
391520	Polystyrene waste or scrap	0	12	186	75,925
391530	Polyvinylchloride waste or scrap	0	11	40	11,574
391590	Other plastic waste or scrap	1	997	571	230,153
3915	**Total**	**3**	**1,824**	**1,058**	**396,598**

Table 32. Plastic Scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	2	1,057	313	114,938
391520	Polystyrene waste or scrap			215	88,617
391530	Polyvinylchloride waste or scrap	0	17	45	13,706
391590	Other plastic waste or scrap	1	815	723	304,003
3915	**Total**	**3**	**1,889**	**1,296**	**521,265**

Table 33. Steel Scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	0	10	19	5,034
720421	Waste or scrap from stainless steel	152	202,837	218	239,687
720429	Waste or scrap from allot steel other than stainless	45	71,563	28	10,900
720430	Waste or scrap from tinned iron steel	0	3	0	86
720441	Waste from mechanical working of iron or steel	2	490	126	34,005
720449	Other ferrous waste or scrap	63	12,060	6,399	1,571,505
720450	Re-melting scrap ingots, of iron or steel	0	48	19	10,550
7204	**Total**	**261**	**287,011**	**6,809**	**1,871,767**

Table 34. Steel Scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	0	36	10	2,950
720421	Waste or scrap from stainless steel	108	189,337	206	242,170
720429	Waste or scrap from allot steel other than stainless	50	64,698	48	26,340
720430	Waste or scrap from tinned iron steel	0	155	0	131
720441	Waste from mechanical working of iron or steel	2	417	266	65,636
720449	Other ferrous waste or scrap	21	2,866	7,030	1,819,431
720450	Re-melting scrap ingots, of iron or steel	0	40	16	12,398
7204	**Total**	**181**	**257,549**	**7,576**	**2,169,057**

Table 35. Steel Scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	0	15	9	2,918
720421	Waste or scrap from stainless steel	138	310,350	297	476,864
720429	Waste or scrap from allot steel other than stainless	38	103,876	36	49,467
720430	Waste or scrap from tinned iron steel	3	670		
720441	Waste from mechanical working of iron or steel	0	147	669	165,071
720449	Other ferrous waste or scrap	9	1,981	6,619	1,979,294
720450	Re-melting scrap ingots, of iron or steel			24	16,538
7204	**Total**	**188**	**417,039**	**7,654**	**2,690,152**

Annex 2. Profiles of surveyed exporting/importing companies

	Trading materials	Activities	Key exporting/ importing markets	No. of employees	Nature of company structure	Years in the business
1	steel scrap	Treatment, and export	Export mainly to China	200	Several offices and treatment facilities in Japan and Several offices in China. One office in Belgium and Hong Kong	More than 10
2	Plastic scrap, Recovered Paper	Import and export	Exports to China	50	Several Offices and treatment facilities in Japan	Less than 10
3	Resin, Plastic Scrap	Import and Export	Exports to China and Hong Kong	50	Several offices and treatment facilities in Japan and China. Part of a trading company which imports food and virgin plastic resin	More than 15
4	Plastic Scrap	Export	Exports to China	50	A company specialized for Plastic Scrap Export. Owns several facilities both in Japan and China.	Less than 10

Annex 3. List of surveyed institutions

- Organization of the Steel Scrap Recycling Industry
- Ministry of the Environment (related to the Basel Convention)
- Ministry of Finance (related to Customs).

CASE STUDY ON THE NETHERLANDS

153. This case study surveys measures and practices that may hamper trade in three non-hazardous recyclable materials: steel scrap, recovered paper and plastic scrap. To this end, key exporters and importers of these materials in the Netherlands were interviewed.

154. Given the small sample size and the qualitative (and unverifiable) nature of the study, the results of the study should be treated only as indicative and may represent only regional concerns. Nevertheless, accounts provided by importers and exporters of these materials in the Netherlands suggest that a number of measures and practices to this trade exist both within and outside of the Netherlands that may hamper trade. Relatively often, these relate to the EU Regulation on shipment of waste and its non-harmonized application, particularly with the enforcement of the shipment requirements. For instance, traders mentioned Article 43 of the EU Regulation prohibits imports of all waste, including non-hazardous recyclable material waste, into the EU from countries that are not parties to the Basel Convention, while such trade restrictions do not exist under the Basel Convention because this Convention does not set rules for trans-boundary movements of non-hazardous wastes. They indicate that in their view inconsistent application and diverging interpretations of the EU Regulations also appear to distort the market and hamper trade in non-hazardous recyclable materials. The absence of an automatic process within the EU to review updated lists under the Basel Convention was mentioned as hampering trade in non-hazardous recyclable materials. Mutual recognition of registered and authorized transporters of materials among EU countries was identified as one key element necessary to further facilitate trade.

155. Provisions related to trade in non-hazardous recyclable materials in other EU regulations s have also been identified as challenging the growth of trade. For instance, the requirement of the prior written informed consent procedure for imports and exports of non-hazardous recyclable material waste by a number of new EU Member States, under the Accession Treaty to the EU, has allegedly hampered the development of a market for recycling in these countries as most of them do not have the recycling capacity.

156. A number of exporters have also identified difficulties faced in their key exporting markets, most notably China. The most frequently mentioned problems include time-consuming procedures; additional pre-departure inspection requirements by Chinese authorities of exports; the costs of those inspections being borne by the traders; and non-transparent criteria for the registration of companies permitted to export non-hazardous recyclable materials.

157. The case study suggests several measures that might enhance trade in non-hazardous recyclable materials, including: safeguards for commercial confidentiality in relation to Annex VII to the EU Shipment Regulation; assistance to new EU Members for compliance with the prior written informed consent procedure; guidance on standards for enforcement actions as well as the application and interpretation of the EU regulations; mutual recognition of registrations or authorisations of waste transporters; and clarification of the procedures for pre-authorization were all proposed.

Analysis of Trade Flows[21]

Production and Consumption of Recycled Paper and Board

158. The Dutch Paper and Board Industry consists of 24 production sites, producing 3.37 million tons of paper and board in 2006. Approximately 5,100 people are employed in these production sites. The main producers in the Netherlands are Smurfit Kappa and SCA.

159. The majority of the companies in this sector are owned by multinational corporations. Total turnover of the industry in 2006 was 2.0 billion Euros; 54% of the total production was for packaging, 42% for graphic and 4% for other papers (e.g. toilet paper). Approximately 80% of the paper and board produced in the Netherlands is exported to other European countries.

160. The total annual consumption of paper and board products in the Netherlands is estimated to be about 3.500 million tons annually (217 kg per inhabitant) by the VNP (Verenigde Nederlandse Papierfabrieken: The Netherlands Paper and Board Association)[22].

161. The separate collection of used paper and board in the Netherlands has been in practice for many decades now, taking place in both households and industry. Almost all collection firms are members of the FNOI (Federatie Nederlandse Oud-papier Inzamelaars, the federation of Dutch collection companies of used paper and board). Large amounts of used paper and board are imported and exported every year.

162. According to the FAO (2007), 2.888 million tons of used paper and board were collected in the Netherlands in 2006. The estimated total amount of waste was 3.500 million tons in 2006, based on the total consumption in that year as estimated by the VNP. With a collection of 2.888 million tons, this would imply that the collection rate of paper and cardboard waste was 82% in 2006. The utilization of used paper and board in the Dutch paper and board industry was approximately 2.346 million tons (75% of the total input of fibres in this industry)[23].

21 The UN's Commodity Trade Statistics Database was used asthe source of most of the data on trade. This database providesthe most complete set of data and it can be used for all case studies. The trade data are presented for the different codes in the Harmonised System (HS) of goods of the World Customs Organization.

22 Source: www.vnp-online.nl

23 Source: www.fao.org

Exports and Imports of Used Paper and Board

Table 36. Exports and imports of recovered paper and board in 2006

HS-Code[24]	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	316	40,456	1,618	193,462
470720	Waste or scrap from paperboard of bleached chemical pulp	60	15,600	124	24,163
470730	Waste or scrap from paper or board of mechanical pulp	253	34,726	202	25,138
470790	Other paper waste or scrap from paper or board	1,253	171,387	1,017	133,088
4707	**Total**	**1,881**	**262,169**	**2,961**	**375,851**

Source : data.un.org (Commodity Trade Statistics Database)

163. Between 2004 and 2006, imports have decreased 17%, while exports have increased 11%. Data for 2004 and 2005 are given in Appendix 1.

164. The Netherlands is a net importer of mixed paper waste or scrap (HS 470790) and a net exporter of paperboard (470710). This is because there is a specific demand in the domestic paper industry for this grade of paperboard, which is a mixture of paper and paperboard, and is collected at households. Another factor is that the firms collecting paper and paperboard in the Netherlands have specialized in sorting the mixed grade to separate paperboard, which is subsequently exported. Also, separately collected cardboard from shops and businesses is exported in large quantities.

Major Trade Partners

165. A large amount of the recovered paper and board exports in 2006 was shipped to China (1.092 million tons), Germany (0.632 million tons) and Belgium (0.329 million tons). The main countries from which recovered paper was imported in 2006 were Germany (0.636 million tons), Belgium (0.578 million tons) and the U.K. (0.291 million tons)[25].

Production and Consumption of Plastic Scrap

166. The plastics industry in the Netherlands is comprised of many small companies. A limited number of larger companies operate in this market, of which DSM, Sabic and Synbra are the most important. Approximately 90% of the companies in this sector have fewer than 50 employees. The total turnover of this industry in the Netherlands is some 6 billion Euros annually[26]. One-third of these companies produce products for the technical and components industry. About 20% of the companies make products for the packaging industry and also 20% produce for the construction industry. Some 30,000 employees are working in this industry. More than 60% of the plastic products produced in the Netherlands have been exported, mostly (approximately 80%) to other European countries.

24 Harmonised System Code: A harmonised code that identifies the commodity (typically 8 digits, for this study the 6 digit-level is acceptable).

25 Source: comtrade.un.org (Commodity Trade Statistics Database).

26 Source: www.nrk.nl

167. Data on the exact consumption of plastics is not available for the Netherlands. Some is used as plastic products but often plastic is incorporated into other products (e.g., cars) where the amount of plastic used is not registered on a national level.

168. Several plastic fractions are collected in the Netherlands, sometimes as a separate fraction (e.g., agriculture foil, packaging), and some other times as part of a larger collection scheme (e.g. end of life vehicles, refrigerators). Also, production scraps from companies that produce plastic products are collected for recycling.

169. According to Prognos, (2008) 1.155 million tons of plastic waste generated in the Netherlands in 2004. Plastics Europe (2006) reports a recycling rate of plastic waste for the Netherlands in that year of around 18%, which amounts to approximately 0.200 million tons. Since 2004, the recycling of plastic waste increased annually to approximately 21% in 2006.

Exports and Imports of Used Plastics

Table 37. Exports and imports of plastic scrap in 2006

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	95	34,089	213	72,395
391520	Polystyrene waste or scrap	7	3,052	21	9,408
391530	Polyvinylchloride waste or scrap	6	1,739	10	3,399
391590	Other plastic waste or scrap	110	49,798	257	114,410
3915	**Total**	**218**	**88,678**	**501**	**199,612**

Source: data.un.org (Commodity Trade Statistics Database).

170. Between 2004 and 2006, plastic imports have increased 30%, while exports have increased 58%. Data for 2004 and 2005 are set forth in Appendix 1.

Major Trade Partners

171. The most significant share of plastic exports in 2006 was shipped to Hong Kong (0.194 million tons), China (0.097 million tons) and Belgium (0.047 million tons). An unknown but significant portion of the plastic waste exported to Hong Kong is subsequently re-exported to China, which, by far, is the largest outlet of plastic scrap from the Netherlands[27]. The imported scrap in 2006 came mainly from Germany (0.116 million tons), Belgium (0.038 million tons) and France (0.026 million tons).

Production and Consumption of Steel Scrap

172. In the Netherlands, two producers of steel are in operation; Corus (part of the Indian Tata Steel company) and Nedstaal.[28] Corus produced approximately 6.9 million tons of steel in 2007[29]. Nedstaal

27 France indicates that the re-exportation of plastic scrap from Hong Kong to China would need to be mentioned on the form the EU Regulation requires to be present with the shipment (Annex VII), because the recycling apparently takes place in China. Transports where the final destination is not mentioned would be considered illegal under the EU Regulation.

28 Corus has a production facility in the Netherlands that produces steel on the basis of the oxy steel process. This process uses primary raw materials for the production and a certain percentage of steel scrap, mainly to regulate the temperature in the production process.

produces steel on the basis of the electric arc process. This process uses nearly 100% steel scrap as feed. Nedstaal does not publish production figures. Based on the data from IISI, (2007) which indicates that around 2 to3% of the steel production in the Netherlands is from electric arc furnaces, it can be estimated that their production must be approximately 0.150 - 0.200 million tons annually.

173. Steel scrap is collected from the steel processing industries, machining industries, steel packaging from industries and businesses and from building demolition sites. Significant amounts of steel scrap come from the shredding of expired vehicles and household appliances. Steel packaging from households is not collected separately. However, nearly all residual waste from households is incinerated and nearly none of the waste goes to landfills. All incinerator facilities separate steel scrap either before placing the waste into the incinerator or by separating the steel from the incineration slags.

174. The total amount of steel scrap generated by domestic sources is not well known. Prognos (2008) estimates the amount was 2.582 million tons in 2004. In that year,, Prognos also estimates the amount of steel scrap that was recycled was approximately 2.204 million tons or 85%. This estimate may be low due to the very low dependency on landfills, which are virtually the only outlets where the material would not be recycled.

Exports and Imports of Used Steel

Table 38. Exports and imports of steel scrap for 2006

HS-Code	Commodity description	Imports		Exports	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	111	25,284	327	69,733
720421	Waste or scrap from stainless steel	794	1,118,228	1,401	1,722,861
720429	Waste or scrap from alloy steel other than stainless	234	63,340	79	27,649
720430	Waste or scrap from tinned iron steel	239	56,012	638	132,535
720441	Waste from mechanical working of iron or steel	353	77,462	435	87,178
720449	Other ferrous waste or scrap	1,470	350,764	3,814	836,216
720450	Re-melting scrap ingots, of iron or steel	31	28,243	0	138
7204	Total	3,232	1,719,333	6,695	2,876,310

Source: data.un.org (Commodity Trade Statistics Database)

175. Between 2004 and 2006, imports have increased 44%, while exports have increased 73%. Data for the years 2004 and 2005 are given in appendix 1.

Major Trade Partners

176. The most significant share of the export of used steel in 2006 was sent to Germany (1.525 million tons) followed by Spain (0.713 tons), Belgium (0.660 million tons) and Turkey (0.635 million tons). Imported scrap steel in 2006 mainly came from Germany (1.407 million tons) followed by Belgium (0.419 million tons) and Denmark (0.227 million tons).

Analysis of Trade Flows

177. The growth trends of trade in these materials over the last few years can be attributed to a growing demand for raw materials in Europe and East Asia. Accordingly, the prices for these materials

[29] Source: www.corus.nl

such as steel scrap, recovered paper and plastic scrap have grown or remained at a stable but elevated level. The price of cellulose for instance reached an historic record in 2006.

178. The Netherlands' geographic advantage has also played a key role in the growth of trade as the Port of Rotterdam provides prime access to Western European markets. Specific sorting and treatment facilities to prepare recyclable materials for manufacturing have also contributed to the growth in the trade of these materials.

179. The analysis of the trade flows shows that a large share of the steel and paper collected is being recycled in the Netherlands. Relatively small amounts are still going to incinerators or landfills. Apart from the economic driver (the monetary value of these materials), the high levels of recycling in the Netherlands is largely due to an effective policy promoting recycling. The most important policy measures, as mentioned in section 3, are a ban and a tax on land filling of recyclable materials. Given the already high recycling rates of steel and paper, the potential for further increases of recycling these materials is limited.

180. Plastic is also being collected for recycling, but the amounts that are going to incinerators or landfills are still considerable. This is due to the relatively high costs of collection and further treatment necessary to make the material suitable for recycling. The economic incentive for plastic recycling is not always sufficient to stimulate a separate collection. Therefore, there exists a considerable potential for plastic recycling through policies to promote it and a reduction in the costs to do so.

181. The main trade partners for the three materials are shown in the following table.

Table 39. Key importing and exporting markets per material (for 2006)

Materials	Exports		Imports	
	Country	Amount (million tons)	Country	Amount (million tons)
Paper and board	China	1.092	Germany	0.636
	Germany	0.632	Belgium	0.578
	Belgium	0.329	UK	0.291
Plastic scrap	Hong Kong	0.194	Germany	0.116
	China	0.097	Belgium	0.038
	Belgium	0.047	France	0.026
Steel scrap	Germany	1.525	Germany	1.407
	Spain	0.713	Belgium	0.419
	Belgium	0.660	Denmark	0.227

Legal and Policy Framework

General Legal and Policy Framework for Waste Management

182. The main legal provisions for environmental protection are set forth in the Environmental Management Act. This Act integrates all aspects of environmental management, including the management of waste. The Environmental Management Act covers subjects including:

- Environmental plans,
- Environmental quality standards,
- Permits for installations,
- Requirements for substances and products (e.g., chemicals),

- Waste,
- Financial instruments,
- Enforcement.

183. The policy framework for waste management is set forth in the National Waste Management Plan 2002 – 2012, which was enacted in 2003. A revision of the plan is expected to take effect in 2008. The main objectives of the plan are:

- Promoting prevention: the growth of waste generation should be less than the growth of the economy;
- Increasing recovery: a target of 83% recovery of all waste in 2012;
- Maximising the energy content of waste;
- Reducing final disposal;
- Promoting a level playing field for waste management within the EU and promoting use of market-based instruments and innovation.

184. The policy objectives are defined for 34 different waste streams in sector plans, which are part of the National Waste Management Plan. It contains sector plans for metal waste (relevant for steel scrap), paper and cardboard waste (relevant for recovered paper) and plastic waste (relevant for plastic scrap). The overall policy objective for metal waste is to promote recycling for paper and cardboard waste, to promote separation for recycling, and to promote separation for recovery of plastic waste. The two regulations that contribute the most to achieving these objectives are:

- A landfill ban on separated fractions of materials that can be recycled or with a sufficient calorific value to be incinerated with energy recovery; and;
- Landfill tax on residual waste which creates an incentive to separate materials such as metals, paper and plastic for recycling or to incinerate residual waste if separation is not feasible.

Legal Framework for Trade in Non-Hazardous Recyclable Materials

185. In the Netherlands, steel scrap, recovered paper and plastic scrap are classified as waste until they are recycled. Therefore, the legislation on transboundary movement of waste applies to these materials when they are traded for use in the industries. The relevant piece of legislation is the European Regulation (EC) N° 1013/2006 of the European Parliament and of the Council on Shipments of Waste. This Regulation is directly applicable to economic operators in the Netherlands and need not to be enacted into national legislation. The Regulation implements into EU law both the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and the OECD Decision C (2001)107/FINAL concerning the control of transboundary movement of wastes destined for recovery operations.

186. The main provisions in the Basel Convention, the OECD Decision and the EU Regulation have been described in the scoping paper. No additional requirements were introduced into the Dutch legislation. Only a number of decisions which have to be implemented by the Member States, such as the designation of the competent authority for notifications, were enacted by the Dutch government. However,

the Netherlands has developed policy guidance for the application of a number of the provisions of the EU Regulation and, in particular, for the application of the concept of Environmentally Sound Management (ESM) when the authorities raise objections to intended imports or exports of waste. These guidelines are included in the National Waste Management Plan.

Application of ESM to Exports of Waste

187. The key concept of the ESM assessment in the Waste Management Plan is the determination of minimum standards for the treatment of 34 waste streams in the sector plans within the overall plan. These minimum standards define, on the basis of life-cycle assessments, the type of treatment which allows a permit for the treatment installation for waste in the Netherlands. These standards are also used in the event that objections are raised to notified requests for imports or exports of waste. For steel scrap, the minimum standard for exporting is that the material must be recycled. Intended exports for land-filling are not allowed. For recovered paper and plastic scrap, exports are allowed for both recycling and for incineration, with or without energy recovery. Objections are raised for intended exports for land-filling. Objections to the export of these materials are also raised if the authorities in the Netherlands believe that the amount of residual material that would have to be disposed of after treatment in the country of destination does not justify their export as a recycling or recovery operation.

188. Objections can only be raised in case the imports or exports are subject to such a notification procedure. Steel scrap, recovered paper, and plastic scrap are included in the List B of the Basel Convention and are regarded as waste in the OECD Decision and in the EU Regulation. This implies that prior notifications are not required and that there are no specific control procedures for these materials within the EU and within the OECD countries. The only requirements are that a signed contract should be in place between the person organizing the transport and the installation where the waste will be treated and that the transport is accompanied by the information specified in Annex VII of the EU Regulation. This simplified procedure does not apply to exports from an EU country to Bulgaria, Latvia, Poland, Romania and Slovakia. For these five countries, a provision was enacted when they became Members of the EU to apply the prior notified written consent procedure to non-hazardous recyclable materials as well, such as steel scrap, recovered paper, and plastic waste for transitional periods which differ according to country[30].

189. For non-EU countries outside the OECD, the control regime for non-hazardous recyclable materials depends on the importing country. The Commission has requested all non-OECD countries to indicate their preference on how to address exports of non-hazardous waste from the EU to their countries. The countries are given a choice to apply the following regimes to all or just to specific materials on the list of non-hazardous materials:

- a ban on imports;
- the prior notification and written consent procedure of the EU;
- no prior notification and consent procedure;
- another procedure as specified by the importing country.

190. The EU is committed to respecting these choices when assessing exports of wastes to these countries. The replies received from 44 non-OECD countries are published in Regulation N° (EG)

[30] Bulgaria: through 2014, Latvia through 2010, Poland through 2012, Romania through 2015 and Slovakia through 2011.

1418/2007 of 29 November 2007. The control regimes that these countries want to apply for steel scrap, recovered paper and plastic scrap are summarised in Annex 2 to this paper. For the non-OECD countries that did not (yet) reply to the request from the Commission, the prior notified written consent procedure has been applied. The policy of the authorities in the Netherlands is not to object to requests for exports if the material is non-hazardous, not contaminated, and if the installation in the country of destination has a licence, permit or authorisation to receive the material for the treatment for which it is exported.

Application of ESM to Treatment and Recycling Inside the Netherlands

191. By establishing minimum standards for the companies that treat metal waste, paper waste and plastic waste, the National Waste Management Plan indicates which types of facilities may be eligible for an environmental licence to treat these materials (see previous section). The environmental licence itself contains the requirements these companies need to observe for the protection of the environment.

192. The system of issuing environmental licences in the Netherlands is, for large and complex companies, based upon the EU Directive's requirements concerning integrated pollution prevention and control (IPPC)[31]. Requirements for environmental protection in such licences are based on the application of best available techniques (BAT). Techniques that are under consideration are included in BAT reference documents developed by the European IPPC Bureau in Seville, Spain. The companies where steel scrap and recovered paper are used in the steel industry and paper industry are covered by the IPPC directive and their licences are in line with the BAT requirements or will comply with these requirements in the near future.

193. Companies that recycle plastic scrap and companies that prepare non-hazardous waste for recycling are generally not covered by the IPPC directive and the Brief "Waste Treatment Industries". The Netherlands does, on the basis of the Environmental Management Act, apply a system of individual licences to such installations. In practise, this means that these installations also need to apply provisions with the objective to obtain ESM of waste treatment.

Enforcement Actions

194. The Netherlands is one of the most active countries in enforcing the EU Shipment Regulation. The Netherlands started and financed a number of the projects carried out by the European Network for the Implementation and Enforcement of Environmental Law (IMPEL). It also serves as the Secretariat of the IMPEL network for Trans-frontier Shipment of Waste (IMPEL/TFS), which deals with transboundary movement. A structural cooperation unit has been established between the Environmental Inspectorate of the Ministry of the Environment and its enforcement partners within the customs and the policy departments in the Netherlands.

195. The Netherlands is the lead country in the IMPEL/TFS Enforcement Actions project that coordinates the enforcement activities for transboundary movement for a large number of EU countries.[32] The results of the Enforcement Actions in 2007 are presented in Table 40.

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31 Directive 96/61/EC.

32 More information about this project in which 18 out of 27 EU Member States as well as Croatia, Norway, Serbia and Switzerland participated, can be found on the website of IMPEL http://ec.europa.eu/environment/impel/impel_tfs.htm.

Table 40. Results of Enforcement Actions conducted by the IMPEL/TFS in February and June 2007

	February 2007		June 2007	
	All participation countries	The Netherlands	All participation countries	The Netherlands
Number of transports stopped and controlled	1510	827	6619	1266
Number of transports that were transboundary shipments of waste	399	246	795	203
Number of transboundary shipments of waste in violation of the EU Shipment Regulation	99	61	102	41
% violations of pre-selected shipments	25%	25%	13%	20%

Source: IMPEL, 2007a and IMPEL, 2007 b

196. These results reflect enforcement actions of pre-selected transports. The transports are stopped only if there is an indication that there may be waste transports, e.g., on the basis of customs documents before departure in seaports or on the basis of characteristics of the transport vehicle. The percentage of violations, therefore, does not reflect the average of all transboundary shipments of waste, but only pre-selected shipments.

197. The results reflect all types of waste, not only steel scrap, recovered paper and plastic scrap, but also shipments of, for example, hazardous waste, end-of-life vehicles and electronic waste. The results show that violations occur for two reasons: pure administrative omissions or mistakes and illegal shipments.

198. For steel scrap, recovered paper and plastic scrap, the violations that occur in most cases are due to an administrative nature only; the necessary documentation that has to accompany the shipment is missing, incomplete or contains mistakes. In a few cases, the controls revealed the existence of shipments of these materials that were too contaminated to be shipped under the green procedure. More frequently, cases of illegal shipments were discovered with electronic waste and expired vehicles.

Perceived Measures Hampering Trade

199. To identify measures and practices that may hamper trade a number of interviews were undertaken with traders that both import and export non-hazardous recyclable materials.[33] The issues raised during these interviews indicate what problems traders encounter when exporting or importing material to and from the Netherlands. During the interviews, possible solutions for the problems were also requested. Where such suggestions were given, they are included in this chapter for informational purposes. The Dutch environmental authorities have reacted to a number of the issues that were raised by traders. These reactions were included at the end of this chapter. The assessment of measures OECD Countries might wish to consider will be done in the synthesis report on the basis of the results of all 6 case studies. The issues mentioned in this report are those that traders indicated during the preparation of this report. Including them here does not suggest that the measures and practices as indicated by traders are hampers to trade and that these measures should be removed.

200. These measures and practices are presented in the following categories:

- Provisions in the EU Shipment Regulation

[33] Four traders and two trade associations were interviewed for the case study. Detailed profiles of the survey respondents can be found in Annex 3.

- Provisions related to trade in non-hazardous recyclable materials in other EU legal instruments
- Application of the provisions in the EU Shipment Regulation by the Netherlands
- Enforcement of the provisions related to trade in non-hazardous recyclable materials
- Procedures applied by the country of destination

Provisions in the EU Shipment Regulation

Export of Green Listed-Waste to non-OECD Countries

201. All traders interviewed mentioned the problems encountered in the second half of 2007 with the export procedures of green-listed waste to non-OECD countries. When the EU Regulation was enacted in July 2007, most non-OECD countries had not yet responded to the European Commission's request on which procedure they would elect to address exports of green-listed waste to their countries. The Regulation requires the application of the prior written informed consent from the importing countries in cases where those countries had not notified the European Commission. One trader indicated that during the second half of 2007, it redirected 112 containers of 1,700 tons of steel scrap destined for China via the U.S. instead of via Rotterdam, so that it could lawfully circumvent the temporary problem of the prior written informed consent procedure for this material. Only by the end of 2007 had the most important non-OECD countries had responded, in particular China, Hong Kong and India. But the majority of the countries had not yet responded.[34]

Annex VII on Information and Confidentiality

202. The EU Regulation requires that the transport should be accompanied by information about the nature, origin and destination of the materials. The objective of this measure is to facilitate enforcement of the provisions of the Regulation. Enforcement authorities will have difficulties to assess during inspection if the material will be treated under conditions that constitute ESM when the final destination where the material will be recycled or recovered is not known to them. It is also difficult to return the material to the generator of the waste if the name and address of the generator is not mentioned in the documentation accompanying the transport. Traders tend to consider this information commercially confidential, as they fear that the information might be exposed to potential competitors. Some traders attempt to circumvent the Regulation's provisions to protect this confidentiality by using codes instead of detailed information on the form or other provisions that allow authorities to check this information via an online data system if needed.

203. Others also indicated that filling the standardized form to provide the required information adds administrative burdens as most of the information has to be provided to the customs in the CMR documentation. They do not consider that the extra information as required by the Regulation would be essential to managing the waste in an environmentally sound manner for materials with high commercial value.

[34] The applicable procedures for steel scrap, recovered paper and plastic scrap as indicated by the different non-OECD countries in response to the request by the Commission are included in Annex 2. For all other non-OECD countries, the prior written informed consent procedure applies to these materials.

Absence of Automatic Updating and Review Process of the Lists of the Basel Convention

204. The lists of the Basel Convention are under constant review. Unless there is any objection from its Members, the OECD automatically updates their lists to align them with those of the Basel Convention whenever amended. Such an automatic updating and review process is absent in the case of the EU. The European regulation allow possibilities of modifying the list of wastes in order to add the wastes or mixed wastes in the green list according to its annex IIIA and IIIB. However, every time there is any change on the lists a full review has to be undertaken again which prolongs the process. The case of cable waste illustrates this point. While cable waste was added to the List B of the Basel Convention as non-hazardous waste, it was not yet included in the old Shipment Regulation of the EU (Regulation N° 259/93). The competent authorities in the Netherlands considered shipments of cable as unlisted and required a prior written informed consent procedure. Several traders were even prosecuted during the period although the authorities in the Netherlands already had agreed to the listing in the Basel Convention of the material as a non-hazardous material suitable for the green list. This was only remediated when the new EU Regulation was enacted in July 2007. Traders argued that a more speedy procedure or a procedure in accordance with the OECD Decision is needed. That would imply taking over any changes in the Basel Convention automatically, unless a Member State makes a request for a specific assessment on the EU level.

Article 43 of the EU Shipments Regulation

205. The Basel Convention prohibits trade of wastes covered by the Convention between Parties and non-Parties. Trade is only allowed if bilateral or multilateral agreements set the requirements for such trade. Article 43 of the EU Regulation sets the rules for the import of wastes into the EU and refers to these provisions of the Basel Convention albeit with a broader scope of wastes, including non-hazardous recyclable materials. The EU countries are therefore not allowed to import steel scrap, recovered paper or plastic scrap from non-Parties to the Basel Convention (with the exception of the United States, since trade with the U.S. is covered by a multilateral agreement and, therefore, this trade is not covered by the prohibition of Article 43). Even though the amount of material that would be covered by this import prohibition is insignificant, one trade association considers the measures to have few environmental benefits.

Provisions Related to Trade in Non-Hazardous Recyclable Materials in Other EU Legal Instruments

Interim Procedures for New EU Members

206. According to the Accession Treaty to the EU, a number of new EU Member States[35] are required to adhere to the prior written informed consent procedure for the shipments of green-listed waste during the transitional periods. Most of these countries, however, do not have the capacity to recycle the waste. More often, companies willing to be involved in setting up the collection systems in these countries, have limited experience with the notification procedure. In addition, the procedure requiring financial guarantees by the exporting companies would add to their financial burden as they typically have limited financial resources when they begin operations. In addition, issuing large guarantees either limits their cash flow or reduces their ability to get loans from banks. One trade association identified the requirement of such procedures according to the Accession Treaties hampers the development of recycling in these countries and hamper trade.

207. Any change in these rules would be difficult, according to the authorities, as it would require a revision of the accession Treaty to the EU. This is a burdensome procedure which, even in the unlikely case that the EU institutions were willing to initiate it, is not likely to be finalized before the end of the

[35] These countries are: Latvia, Poland, Slovakia, Bulgaria and Romania, see also footnote 12.

transitional period. One possible solution would be a support program to help operators in the new countries with the administrative requirements as well as assistance to them to overcome the burden of the financial guarantee.

Application of the Provisions in the EU Shipment Regulation by the Netherlands

Differences in Application and Enforcement of the Shipment Requirements

208. Several traders indicated that the regulations are complex and are interpreted differently within the EU. They all considered the Netherlands one of the most stringent countries when it comes to interpretation and enforcement of the requirements. In principle, the traders do not object to such strict application and enforcement as long as this would also apply to their competitors, which does not always seem to be the case.

209. One of the elements within the EU Regulation on shipments that was mentioned as an example by different traders was the application of the green list to mixtures. The competent authority in the Netherlands requires the prior written informed consent procedure to be applied to materials that are mixtures of green list materials, while this is not always the case in other Member States.[36] According to the preamble of the green list, green-listed materials should follow the prior notification and consent procedure if they are contaminated to the extent they become a hazardous waste or if the contamination prevents environmentally sound recycling. Traders contend that the procedure of prior written notification and consent should not be applied if the mixture can easily be recycled in an environmentally sound manner. [37]

210. Differences in interpretation of the provisions for cable waste have led to the Omni Metal Service case (C259/05). In that case, Spain (the country of origin) and China (the country of destination) were of the opinion that the material could be shipped with the green procedure that requires only normal commercial control, while the authorities that stopped the shipment in the Rotterdam Harbour in the Netherlands stated that the material was unlisted and that the notification procedure had to be followed. In the end, the European Court of Justice ruled that the Netherlands had the correct interpretation. However, if the material would have been shipped from Spain directly to China, the case would not have been brought to the court because Spanish competent authorities would not have stopped the shipment as being illegal. Issues related to cable have been solved in the new EU Regulation because it is listed on the green list of the Basel Convention and adopted in the new Regulation. The following box indicates other examples given by traders where the requirements for mixtures are applied differently by EU Member States.

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36 An example that was mentioned was cable scrap, which consists in most cases of plastic and copper, both of which are listed on the green list. Under the old EU Regulation this ‘mixture’ of wastes which are all on the green list was not mentioned as a specific entry on the green list.

37 The preamble of the Green list indicates : Regardless of whether or not wastes are included in this list, they may not be subject to the general information requirements laid down in Article 18 if they are contaminated by other materials to an extent which: a) increases the risks associated with the wastes sufficiently to render them appropriate for submission to the procedure of prior written notification and consent, when taking in to account the hazardous characteristics listed in annex III to Directive 91/689/EEC; or b) prevents the recovery of the wastes in an environmentally sound manner.

Box 1. Differences in interpretation regarding mixtures of green-listed materials in the EU

Craft sacks are made of strong paper with an inner liner of plastic. The paper and plastic can be easily separated manually and China allows the import of the material under the green procedure. The Netherlands does not allow this, however, because it is considered as an unlisted mixture. Traders claim that the export via Belgium does not pose problems.

Compressors of refrigerators are metallic structures that contain oil and (H) CFC's. The metallic structure is suitable for recycling once the oil and (H) CFC's have been adequately removed. Traders claim that, according to the competent authorities in the Netherlands, they can be exported as green-listed material. Within Germany, there are 23 different competent authorities for the export of waste. According to some of them, export of these compressors is prohibited. According to others, they can be exported with the prior written informed consent procedure, while others consider that the green procedure could be applied.

Level of the Financial Guarantee and the Procedure to Allow Lower Amounts of the Guarantee

211. The prior written informed consent procedure for amber-listed waste[38] requires that each shipment is covered by a financial guarantee. This guarantee is meant to cover the return costs of the shipment in case illegal traffic is discovered; it should also cover the costs of safe disposal in such cases. In the Netherlands, the standard amount for the guarantee is €450 per ton. This amount is based upon the worst case scenario for hazardous wastes that are included in the amber list. For a number of non-OECD countries, this procedure, including the financial guarantee, also applies to exports of steel scrap, recovered paper and plastic scrap. However, these materials have a value which would cover a large part of the return costs or safe disposal or recovery in case of problems with the shipment. Traders consider that setting the level of the guarantee at the level for hazardous waste is an addition burden for these materials[39].

212. For certain types of waste, the competent authorities have decided to deviate from the standard amount of the financial guarantee. For lead scrap, e.g., the amount of the financial guarantee is much lower. In order to benefit from a lower amount of the financial guarantee, Companies may request from the competent authorities a lower financial guarantee amount. However, traders in the Netherlands report difficulties with this procedure and find it hard to obtain a favourable decision from the competent authorities.

Pre-authorization

213. Competent authorities may designate pre-authorized facilities. Once recognized as pre-authorized facilities the notification procedure is shortened and the time limit for which shipments may be granted is 3 years instead of 1 year. The certainty of authorization as well as the shortening of the decision time is important, in particular as the price of the materials may fluctuate considerably over time. Long procedures to get authorization constitute a large commercial risk in these cases. Traders consider the procedure to be recognized as a pre-authorized facility in the Netherlands to be non-transparent and, as a result, the potential of this instrument to promote trade is not used, which limits the potential of this instrument to promote trade.

38 The Amber list of the EU Regulation consists of two parts: the hazardous waste as included in Annex VIII (list A) of the Basel Convention and the additional wastes included in Appendix 4, Part II of the OECD Decision 2001(107) final

39 This problem could be solved by reference to Article 59 of the EU regulation, which allows that additional measures can be adopted to establish a way to calculate financial guarantees.

Mutual Recognition of Transport Licences

214. Several countries have installed national systems of registration and authorization of transport firms that are allowed to transport waste. These registrations and authorization are not recognized in all countries. This implies that a transport firm that has the authorization to transport waste in Germany can only transport waste from Germany to the Rotterdam Harbour in the Netherlands if it is also registered as waste transporter in the Netherlands. The procedures to obtain such registration are not difficult, but mutual recognition of registrations would facilitate trade.

Enforcement of the Provisions Related to Trade in Non-Hazardous Recyclable Materials

Standards Applied During Enforcement

215. In a number of cases, traders observed that it was unclear which standards the enforcement officers were using to make their judgments when declaring that shipments were illegal traffic. One example was given for steel scrap that contained traces of oil contamination. The trader examined the load at its yard and found only minimal amounts of oil, which did not constitute a problem for the recycling process and did not render the material hazardous. However, the transport of the steel scrap was stopped by the enforcement agency due to these traces of oil. When asked about the standard on the levels of 'allowed' contamination, the enforcement agency was not able to provide an explanation on the method and standards upon which their findings were based. Traders pointed out the need for standards on the levels of 'allowed' contamination.

Costs of Inspections in the Harbour

216. The custom authorities and the environmental inspectorate regularly inspect both incoming and outgoing shipments of wastes in the different seaports of the Netherlands. When a shipment in the harbour is selected for inspection, traders had to bear all the costs for the inspection. These include the transport of a container from the vessel to the inspection area and the costs of storing the container during the inspection. Since the container may be blocked for a number of days, the costs of inspection of a container may be up to € 1000 in certain cases. Frequent controls of containers of the same firm may become a serious burden for such companies. Exporting companies have expressed that such frequent control is not justifiable, particularly when they reveal no problems or only minor ones. Exporters proposed that instead of the physical inspection of a large number of containers in the harbour, auditing of the company's performance by the enforcement authorities could reduce their costs without compromising environmental protection.

Procedures Applied by the Country of Destination

217. Several traders indicated problems concerning the procedures applied by the country of destination. In particular, several exporting companies have pointed out a procedure applied to exports to China, which, in a number of European harbours, requires an inspection of the shipment by a Chinese inspection authority (CCIC) before departure in the exporting country. Although the procedure itself is considered to be well-founded and in general its application is rather smooth, several exporters operating in several countries pointed out that the way in which the inspections are being carried out vary harbour to harbour.

218. The most frequently mentioned problems are:

- Procedures are time-consuming; at times taking up to three weeks.

- Since most materials are only inspected visually, decisions on the materials often vary and can be inconsistent. Loads of identical material that are shipped regularly over time may be transported without problems in some cases and blocked in others.

- The costs for inspection are borne by the trader and the amounts are not transparent, varying from €100 to over €1000. The costs are particularly high if the inspectors have to travel to the port of export to conduct the inspection.

- The criteria for the registration of companies which are allowed to export to China are not transparent and the procedure may take a long time. This also applied to the renewal of an existing export licence.

- The inspection authorities in China may block a shipment that was authorized by the Chinese inspector in Europe. This does not occur very often but some traders faced this problem several times per year. It is very difficult to obtain access to the justice system in China.

219. India has installed a system that is similar to the Chinese system. However, India uses international certification and auditing firms and does not have a national inspectors located in foreign harbours. Moreover, the fact that there are several certification- and auditing firms opens this market for competition.

220. In summary, traders considered that certain elements of domestic legal framework in the Netherlands might hamper trade in non-hazardous recyclable materials even though in general they do acknowledge that legislation on shipment of waste is necessary and in most cases justified.

General legal Framework for Waste Management

221. The general legal and policy framework for waste management in the Netherlands constitutes a solid basis for the recycling of waste generated in the Netherlands. None of the persons interviewed indicated specific problems related to this framework.

Legal Framework for Trade in Non-Hazardous Recyclable Materials

222. Several aspects of the EU Regulation on transboundary movement were considered to be causing problems by traders. These include a number of problematic provisions in the Regulation itself, as well as its application in the Netherlands. Several suggestions were made that could reduce the impact on trade of these measures and practices.

Application of ESM to Exports of Waste

223. None of the traders mentioned specific problems with the way the authorities in the Netherlands apply ESM when assessing exports of steel scrap, recovered paper and plastic scrap. The authorities apparently do not contend that ESM is a disguised hamper to trade of the materials that are the subject of the case study.

Application of ESM to Imports of Waste

224. The traders did not mention this as an important issue. The fact that installations in the Netherlands have to meet strict standards does not prevent traders importing the materials necessary for the recycling processes in the Netherlands. However, no interviews were carried out with operators of steel mills, paper mills or plastic recycling firms to check this assumption.

Enforcement Actions

225. The traders indicated that enforcement actions are necessary. There are still a number of operators that do not respect the legislation and, as a result, harm the image of the traders that do respect the law and the environment. They would, however, like to see a more level playing field for enforcement in the EU. The Netherlands is very active, while other Member States make little or no effort to enforce the legislation. Traders indicated that this creates distortions of the market.

Remarks of the Dutch Environmental Authorities Regarding the Issues Raised by Traders

a. Procedures for mixtures of non-hazardous recyclable materials

- The authorities are of the view that the rules for mixtures of non-hazardous recyclable materials have improved in the current EU Regulation, compared to those under the previous Regulation from 1993. According to the current EU Regulation, all mixtures that are not specifically listed should follow the prior informed consent procedure. The current Regulation also foresees that specific mixtures which have been assessed recyclable or recoverable without endangering the environment, can be exempted from the procedure. Such mixtures can be included in Annex III A or III B of the Regulation, which reduces the possibilities of different interpretations by authorities in different EU Member Countries.

b. Derogations for the level of the financial guarantee

226. The procedure implemented in the Netherlands foresees that the level of the guarantee can be lowered if the value of the material reduces the costs. The Dutch authorities do not consider their procedure to request a lower level of the financial guarantee too cumbersome. The companies must simply issue a demand. However, traders don't seem to be aware of this possibility. The authorities hardly ever get such requests.

c. Standards applied during enforcement

227. Part of the problem with unclear standards for acceptable levels of pollution during enforcement can be explained, according to the authorities, by the lack of clarity in the industrial standards. In particular for oil contamination, which was mentioned by industry, the industry standard applied by traders (e.g. the standard as promoted by the Institute of Scrap Recycling Industries, ISRI) is particularly unclear. The standards specify that scrap shall be *'free of all but negligible amounts of oil'*. There can be disagreement between the trader and the enforcement officers if in a specific load the amount of oil is negligible. Moreover, the inspectorate has encountered problems with a number of shipments of scrap engines where the oil was leaking from the containers. They are therefore keen on checking oil contamination in metal scrap because this may pose a genuine risk for the environment.

d. Costs of controls in the harbour

228. The Environmental Inspectorate recognises the high cost of storing containers at the harbour for a long period. However, they do their utmost to reduce the time such containers are blocked. When a company believes that the costs are unreasonable through the actions or inaction of the Inspectorate or customs officials, the company may issue a complaint.

229. Moreover, the Inspectorate and the customs officials use risk profiles to focus their inspection activities. Transports organised by companies that were found to transport non-hazardous recyclable materials in violation of the regulations in the past are more likely to be controlled than transports of those

companies that have not previously committed such violations. This should limit the burden of enforcement for companies that are in compliance with the regulations.

230. The authorities acknowledge that controls at the trader's premises may be used instead of or in addition to controls at the harbour. They indicate, however, that this will not prevent other problems from occurring, e.g., problems in the country of destination. Problems with a particular load in a particular container may not be fully prevented by such controls of installations.

e. Procedures applied by the Chinese authorities

231. The Dutch authorities contend that the current procedures as applied for exports to China constitute an improvement over the situation before these procedures were implemented. The situation for traders has improved as they no longer have to discuss with the customs officials in China on each shipment on the basis of rather unclear rules.

232. Also France has raised several issues regarding the points raised by traders. France mentions the work of the correspondents to provide guidance (information on the work of the correspondents can be found on the internet site of the European Commission (http://ec.europa.eu/environment/waste/shipments/guidance.htm). France also mentioned the possibilities of adaptation of the Annexes of the Regulation in particular Annexes IIIA and IIIB and considered the impact on the trade of Article 43 quite limited. The only case known to France was a request from Angola. France is not in favour of changing this article. France mentioned that helping operators in the new EU member states with the administrative provisions seems necessary and interesting. It also mentioned the possibility of Article 59 to adapt the calculation of the level of the financial guarantee. Finally it mentioned a case of illegal traffic where transformers containing PCB oils were shipped as green listed metal scrap.

Concluding Remarks

233. Considerable amount of steel scrap, recovered paper and plastic scrap are being imported to and exported from the Netherlands, and the overall trade volume has increased over the last few years. The main driving force for this increase is their high prices in the market combined with growing global demand for these recyclables. Steel scrap and recovered paper from domestic sources in the Netherlands have already been recycled at very high percentages with a little additional margin of increase in the coming years. For plastic scrap, the amounts of material from domestic sources may still grow considerably in the coming years.

234. Accounts provided by trading firms of these materials in the Netherlands suggest that a number of measures and practices hamper trade both within and outside of the Netherlands. Relatively often, certain provisions in the EU Regulation on shipment of waste were mentioned and its non-harmonized application, particularly with the enforcement of the shipment requirements. Among others mentioned, trade restrictions in Article 43 of the EU Regulation regarding trade in non-hazardous waste with non-Parties to the Basel Convention trade restrictions; inconsistent application and diverging interpretations of the EU regulation; absence of an automatic process within the EU to review updated lists under the Basel Convention; and lack of mutual recognition of registered and authorized transporters of materials within EU countries.

235. Provisions related to trade in non-hazardous recyclable materials in other EU legal instruments have also been mentioned. The requirement of the prior written informed consent procedure to import and export green-listed waste by a number of new EU Member States was such an example.

236. A number of exporting companies have also indicated difficulties faced in their key exporting markets, notably China. The most frequently mentioned problems include time-consuming procedures;

additional inspection requirement of the shipment by a Chinese inspection authority before departure in the exporting country; the costs of inspection borne by the traders; and non-transparent criteria for the registration of companies permitted to export recyclable materials.

237. The report also suggests several measures to overcome identified problems and promote in non-hazardous recyclable materials. They include:

- Continued effort to clarify the procedures of export to non-OECD countries. It would be useful to continue efforts to clarify the appropriate export procedures for those non-OECD countries that did not yet inform the European Commission thereof.

- Safeguards for commercial confidentiality in relation to Annex VII. In Annex VII, a safeguard measure can be introduced in order to protect the commercial confidentiality on the origin and the final destination of the shipped materials. For instance, one such measure would be to make this information available upon request by the authorities. Another potential solution would be to use a protected central database accessible only to authorities. Another way is to use codes instead of actual information.

- Reducing red tape in relation to Annex VII. Many traders pointed out that the information required for Annex VII is also required for the customs procedures, and that there is room to reduce red tape in this context.

- Speedier review process of the Basel Convention in the EU. The EU could consider the adaptation of a procedure such as foreseen in the OECD Decision 2001(107) final, by which the lists under the Basel Convention are updated automatically, unless an OECD Member Country requests a specific review.

- Exception to Article 43 of the EU Regulation for imports of non-hazardous materials. The provisions in Article 43 of the EU Regulation regarding imports of non-hazardous waste from non-Parties to the Basel Convention could be reconsidered, and modified where appropriate, as these are not required under the Basel Convention. For hazardous materials the provisions of Article 43 should remain in place since this is a requirement under the Basel Convention.

- Assistance for new EU Members' compliance with the prior written informed consent procedure. Assistance to traders in new EU Members to overcome administrative and financial problems related to the prior written informed consent procedure for non-hazardous waste can help develop the recycling industry in these countries.

- Guidance to the application and interpretation of the EU Regulation. Inconsistent applications and diverging interpretations of the EU Regulation could be reduced by developing guidance at the EU level on some of the provisions of the EU regulation which tend to cause such confusion.

- Taking into account of the value of recyclable materials when setting the financial guarantee amount. In setting the amount of the financial guarantee for shipments, the value of recyclable materials could be taken into account. Member States could also simplify and harmonise the current practices when deciding on the adequate amount of financial guarantee.

- Mutual recognition of registrations or authorisations of waste transporters. Mutual recognition by EU countries of the registrations or authorisations for companies involved in transport of waste could further facilitate trade.

- Clarification of the procedures for pre-authorization. The procedures necessary for recognition as a pre-authorized facility are not well known. Trade might benefit from making these procedures better known by clarifying or simplifying them.

- Guidance on standards for enforcement actions. The acceptable level of contamination for green-listed materials is disputable as the applicable standards for the enforcement are not very clear. Guidance on standards for enforcement actions could be useful.

- Reducing the cost of enforcement, e.g. by shifting focus from transport controls to company controls. The financial burden for companies that are subject to frequent control of their transports in harbours can be considerable. Inspecting the same material when it is still on the premises of the company, prior to its shipment, may be a viable alternative or a supplement to transport controls.

238. A number of these suggestions are being taken up in the EU or by the Dutch authorities.

239. It should be noted that, given the small sample size and the qualitative (and unverifiable) nature of the study, the results of the study should be treated only as indicative and may represent only regional concerns. The proposed measures to overcome enhance trade in recyclable materials should also be considered in this context.

240. In the synthesis report, which will be based upon the results of the five case studies, these measures will be analyzed in more details with due consideration of their implication for environmental protection.

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Annexes

Annex 1. Trade data 2004 and 2005

241. Trade data from the UN COMTRADE database for recovered paper, plastic scrap and steel scrap for 2004 and 2005.

Table 41. Recovered paper 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	308	32,566	1,282	138,204
470720	Waste or scrap from paperboard of bleached chemical pulp	62	9,530	194	27,402
470730	Waste or scrap frompaper or board of mechanical pulp	301	35,542	351	39,945
470790	Other paper waste or scrap from paper or board	1,603	147,330	857	110,735
4707	**Total**	**2,274**	**224,968**	**2,685**	**316,286**

Table 42. Recovered paper 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	328	42,029	1,455	173,999
470720	Waste or scrap from paperboard of bleached chemical pulp	50	13,028	100	19,456
470730	Waste or scrap of paper or board from mechanical pulp	243	33,387	206	25,626
470790	Other paper waste or scrap of paper or board	1153	157,738	851	111,285
4707	**Total**	**1,774**	**246,182**	**2,612**	**330,366**

Table 43. Plastic scrap 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	84	19,655	111	32,091
391520	Polystyrene waste or scrap	6	1,951	6	1,929
391530	Polyvinylchloride waste or scrap	4	1,5728	9	3,092
391590	Other plastic waste or scrap	75	21,200	190	72,449
3915	**Total**	**169**	**44,334**	**317**	**109,561**

Table 44. Plastic scrap 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	90	31,999	155	52,824
391520	Polystyrene waste or scrap	6	2,582	3	1,566
391530	Polyvinylchloride waste or scrap	15	4,668	11	3,627
391590	Other plastic waste or scrap	77	34,691	207	92,036
3915	**Total**	**188**	**73,940**	**376**	**150,053**

Table 45. Steel scrap 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap from cast iron	126	42,428	117	47,686
720421	Waste or scrap fromstainless steel	379	567,090	616	901,136
720429	Waste or scrap from alloy steel other than stainless	56	17,785	27	8,421
720430	Waste or scrap from tinned iron steel	242	47,937	469	115,499
720441	Waste from mechanical working of iron or steel	186	61,761	199	67,722
720449	Other ferrous waste or scrap	1,254,	278,235	2,429	562,123
720450	Re-melting scrap ingots, of iron or steel	8	15,335	2	438
7204	**Total**	**2,251**	**1,030,571**	**3,859**	**1,703,025**

Table 46. Steel scrap 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap from cast iron	57	12,907	161	34,395
720421	Waste or scrap from stainless steel	406	571,397	816	1,003,607
720429	Waste or scrap fromalloy steel other than stainless	175	47,303	64	22,614
720430	Waste or scrap from tinned iron steel	153	35,893	467	96,954
720441	Waste from mechanical working of iron or steel	205	44,916	243	48,675
720449	Other ferrous waste or scrap	1,142	272,439	2,963	649,545
720450	Re-melting scrap ingots, of iron or steel	11	10,341	0	29
7204	**Total**	**2,148**	**995,196**	**4,140,361**	**1,855,819**

Annex 2. Procedures for export to non-OECD countries

242. The European Commission presented the replies to their questionnaire to non-OECD countries for the procedures to be applied for export of green-listed waste in Regulation

Country	Steel scrap	Plastic scrap	Recovered paper
Algeria	Own procedure importing country	Own procedure importing country	Own procedure importing country
Andorra	Prohibition	Prohibition	Prohibition
Argentina	Prior notified written consent	Prohibition for PVC and certain other halogenated polymers; prior notified written consent for other scraps	Prohibition for newsprint and mixed grades. prior notified written consent for other grades
Bangladesh	Own procedure importing country	Own procedure importing country for PE and PS. Prohibition for other scraps	Own procedure importing country for cardboard and high grades. Prohibition for other grades
Belarus	Green procedure	Prior notified written consent for PE, PS, PVC, PP and some other scraps, green procedure for polyesters, fluorinated polymers and some others	Green procedure
Benin	Prohibition	Prohibition	Prohibition
Botswana	Prior notified written consent	Prior notified written consent	Prior notified written consent
Brazil	Own procedure importing country	Green procedure	Green procedure
Chile	Own procedure importing country	Own procedure importing country	Green procedure
China	Own procedure importing country	Prohibition for a number of cured resins. No information about PE, PP, PS. Own procedure importing country for PVC	Own procedure importing country
Chinese Taipei	Own procedure importing country	Prohibition for a number of cured resins. Own procedure importing country for other scraps	Own procedure importing country
Costa Rica	Prohibition	Prohibition	Prohibition
Cuba	Green procedure	Green procedure	Green procedure
Egypt	Own procedure importing country	Prohibition	Prohibition for mixed grades, prior notified written consent for other grades
Georgia	Green procedure	Green procedure	Green procedure
Guyana	Own procedure importing country	Own procedure importing country	Own procedure importing country
Hong Kong (China)	Own procedure importing country	Prohibition polyesters, fluorinated polymers. Own procedure importing country for other scraps	Own procedure importing country
India	Own procedure importing country	Green procedure: PET, prior notified written consent for other scraps	Green procedure
Indonesia	Own procedure importing country	Prohibition	Own procedure importing country
Israel	Own procedure importing country	Own procedure importing country	Own procedure importing country
Ivory Coast	Prohibition	Prohibition	Prohibition
Kenya	prior notified written consent	Prohibition for PVC. prior notified written consent for other scraps	Prohibition
Croatia	Own procedure importing country	Own procedure importing country	Own procedure importing country
Kyrgyzstan	Own procedure importing country	Own procedure importing country	Own procedure importing country

Country	Steel scrap	Plastic scrap	Recovered paper
Lebanon	Own procedure importing country	Own procedure importing country for the most important polymers including PVC. Prohibition for other halogenated polymers	Own procedure importing country
Liechtenstein	Own procedure importing country	Own procedure importing country	Own procedure importing country
Macau (China)	Prohibition	Prohibition	Prohibition
Malawi	Prohibition	Prohibition	Prohibition
Malaysia	Green procedure	Prohibition	Green procedure
Mali	Prohibition	Prohibition	Prohibition
Moldova	Prohibition	Prior notified written consent for cardboard, high grades and newsprint. Prohibitions for mixed grades.	Prohibition
Morocco	Prior notified written consent	Own procedure importing country for PE, PP, PET and some others. prior notified written consent for the others	Own procedure importing country
Oman	Prior notified written consent	Prohibition	Prohibition
Pakistan	Own procedure importing country	Own procedure importing country	Own procedure importing country
Paraguay	Green procedure	Green procedure	Green procedure
Peru	Own procedure importing country	Own procedure importing country	Own procedure importing country
Philippines	Prior notified written consent	Prior notified written consent	Green procedure
Russian Federation	Own procedure importing country	Own procedure importing country	Own procedure importing country
Seychelles	Prohibition	Prohibition	Prohibition
South Africa	Own procedure importing country	Own procedure importing country	Own procedure importing country
Sri Lanka	Prior notified written consent	Prior notified written consent	Prior notified written consent
Thailand	Green procedure	prior notified written consent	Green procedure
Tunisia	Prior notified written consent	Prohibition for PVC and fluorinated polymers, prior notified written consent for other scraps	Prior notified written consent
Vietnam	Own procedure importing country	Own procedure importing country for PE, PS, PP, PET and PC. Prohibition for PVC. prior notified written consent for all other scraps	Own procedure importing country

Annex 3. Profiles of surveyed exporting/importing companies

Survey respondents	Trading materials	Activities	Key exporting/ importing markets	No. of employees	Nature of company structure	Years in the business
1	Stainless steel scrap	Treatment, import and export	Imports from nearly 100 countries on all continents Exports mainly to Finland, Taiwan, China and India	More than 50 and less than 100	Part of an multinational company established in 17 countries, with more than 1000 employees	More than 40 years
2	Recovered paper / plastic scrap	Import and export	Imports from Germany and Belgium. Exports to China	Less than 50	One office in the Netherlands and five offices in China	More than 10 years
3	Metal scrap	Treatment, import and export	Imports from Germany, Belgium and France Exports to China, Germany Also domestic deliveries	Less than 50	Part of a multinational company established in more than 10 European countries with more than 1000 employees	More than 10 years
4	Recovered paper, plastic scrap	Collection, treatment, domestic deliveries and export	Exports mainly to China	More than 50 and less than 100	Independent SME	More than 20 years

CASE STUDY ON SOUTH AFRICA[40]

243. The case study on South Africa is based on the same methodology as the other case studies. However, due to the very limited amount of trade in plastic scrap, no traders of this material were interviewed.

244. The main concern in South Africa is that the steel industry in particular is putting pressure on traders not to export steel scrap but to sell it on the domestic market. The trading climate between traders and the steel industry is very tense there and cases of anti-competitive behaviour such as price-fixing and collusion have been reported. The South African Competition Commission is investigating several such alleged cases, and recently fined and one scrap company. The steel industry requested the implementation of export taxes on steel scrap to reduce exports and improve domestic companies' access to these materials. However, the South African government decided not to take such measures, though it was mentioned that other African countries had done so.

245. The South African paper industry also puts pressure on traders not to export recovered paper. However, due to the more limited volume of exports of recovered paper, tensions over trade in this material are lower.

246. Finally, the complexity of certain importing countries' procedures—China's in particular—with regard to non-hazardous recyclable materials was mentioned as hampering trade.

247. Traders recommend closely following the development of other African country as they implement measures to limit exports of scrap.

Analysis of trade flows[41]

Production and consumption of recovered paper and board

248. The paper and board industry in South Africa produced 2.491 million tons of paper and board in 2006. The total consumption in 2006 of paper and paperboard was 2.144 million tons. Of this, 0.935 million tons was collected and 0.889 million tons was used for the production of new paper and paperboard[42].

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40 This study was drafted by Kees Wielanga (FAact). Due to the very limited amount of trade in plastic scrap, no traders of this material were interviewed.

41 For most of these data on trade the commodity trade statistics database of UN has been used as source. This database provides for the most complete set of data and it can be used for all case studies. The trade data are presented for the different codes in the Harmonized System (HS) of goods of the World Customs Organization.

42 Source: Paper Recycling Association of South Africa (www.prasa.co.za).

Exports and imports of used paper and board

Table 47. Exports and imports of recovered paper and board in 2006

HS-Code[43]	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached kraft or paperboard	0	467	19	1,635
470720	Waste or scrap from paperboard of bleached chemical pulp	0	0	0	67
470730	Waste or scrap from paper or board of mechanical pulp	17	3,178	5	296
470790	Other paper waste or scrap from paper or board	0	90	14	1,201
4707	**Total**	**18**	**3,735**	**39**	**3,199**

Source: UN Commodity trade statistics database

249. Between 2004 and 2006, imports increased by 600%, while exports increased by more than 200%. Data for 2004 and 2005 are given in Appendix 1. These very large growth figures reflect the relatively small trade volume. Trade in recovered paper represents only 4% to 5% of the amount collected. Small increases on trade therefore have large impact.

Major trade partners

250. The largest portion of exports of recovered paper and board from South Africa goes to Thailand (14.001 million tons), Indonesia (7.501 million tons) and India (7.030 million tons). The main countries from which recovered paper is imported are the Netherlands (7.234 million tons), the United Kingdom (4.087 million tons) and Belgium (2.643 million tons)[44].

Production and consumption of plastic scrap

251. In 2006 the total consumption of plastic polymers in South Africa was 1.100 million tons. In total, 1.000 million tons were produced locally, 0.365 million tons were imported, and 0.265 million tons were exported. The recycling sector in South Africa consists of 850 companies (mainly small companies) with a total of 30,000 employees. For local production, 0.150 million tons of recycled material was used.[45]

43 Harmonised System Code: A harmonized code that identifies the commodity (in principal 8 digits, for this study the 6 digit-level seems accurate enough).

44 Source : UN Commodity trade statistics database (COMTRADE).

45 Source: Industry overview 2006 (Plastics Federation of South Africa).

Exports and imports of used plastic

Table 48. Exports and imports of plastic scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	PolyEthylene waste or scrap	0	17	3	655
391520	PolyStyrene waste or scrap	0	0	0	7
391530	PolyVinylChloride waste or scrap	0	1	0	112
391590	Other plastic waste or scrap	2	1,510	3	1,456
3915	**Total**	**2**	**1,528**	**6**	**2,230**

Source: UN Commodity trade statistics database.

252. Between 2004 and 2006, imports increased by 100%, while exports increased by 300%. Data for 2004 and 2005 are given in Appendix 1. Despite these increases,, the amounts traded remained extremely low.

Major trade partners

253. The largest portion of exports in 2006 went to China (2,853 tons), Hong Kong (2,658 tons) and India (287 tons). An unknown, but significant, portion of the plastic waste exported to Hong Kong was subsequently re-exported to the Republic of China making that country the primary recipient of plastic scrap from South Africa. The imported scrap in 2006 came mainly from Germany (810 tons), China (680 tons) and the Netherlands (364 tons). Most exported plastic scrap goes directly or indirectly to China, and small amounts are also imported from China. These traded materials are probably of different quality, but no clear information about these transactions could be obtained.

Production and consumption of steel scrap

254. The total production of steel in the South Africa estimated by IISR for 2006 was 9.718 million tons.

Exports and imports of used steel

Table 49. Exports and imports of steel scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	0	5	0	26
720421	Waste or scrap from stainless steel	1	464	18	35,463
720429	Waste or scrap from alloy steel other than stainless	52	3,959	432	55,999
720430	Waste or scrap from tinned iron steel	1	134	37	17,718
720441	Waste from mechanical working of iron or steel	0	0	0	22
720449	Other ferrous waste or scrap	1	36	126	11,109
720450	Remelting scrap ingots, of iron or steel	0	0	0	20
7204	**Total**	**54**	**4,598**	**612**	**120,356**

Source: UN Commodity trade statistics database

255. Between 2004 and 2006, imports decreased by 36%, while exports increased by 73%. Data for 2004 and 2005 are given in Appendix 1.

Primary trade partners

256. The largest portion of exports of steel scrap went to India (203,281tons), Vietnam (113,311tons) and Malaysia (107,311tons). Imported scrap mainly comes from Zimbabwe (42,891tons), representing 79% of all imports, followed by France (7,115 tons) and Zambia (1,612tons).

Analysis of Trade Flows

257. The growth trends of trade in these materials over the last few years can be attributed to an increasing demand for raw materials in Europe and East Asia. Accordingly, the prices for steel scrap, recovered paper and plastic scrap have risen or remained stable but high. The price of cellulose, for instance, reached a record high in 2006.

258. The main trade partners for the three materials are shown in the following table.

Table 50. Key importing and exporting markets per material in 2006

Material	Exports		Imports	
	Country	Amount (1,000 tons)	Country	Amount (1,000 tons)
Paper and board	Thailand	14.001	The Netherlands	7.234
	Indonesia	7.501	United Kingdom	4.087
	India	7.030	Belgium	2.643
Plastic scrap	China	2.853	Germany	0.810
	Hong Kong	2.658	China	0.680
	India	0.287	The Netherlands	0.364
Steel scrap	India	203.281	Zimbabwe	42.891
	Vietnam	113.311	France	7.115
	Malaysia	107.262	Zambia	1.691

Legal and policy framework

General legal and policy framework for waste management

259. The main legal provisions for environmental protection are laid out in the National Environmental Management Act, 1989 (Act N° 73 of 1989). This Act specifies all general aspects of environmental management and details regulation on the following:

- Cooperative governance,
- Environmental plans,
- Integrated environmental management,
- Environmental authorisations,
- Compliance and enforcement.

260. Until now, waste management in South Africa was mainly handled through landfills. The main concern was to ensure that waste was being collected and sent to sanitary landfills, thus the importance of developing basic criteria for landfills. Furthermore, the system of classification for hazardous waste was established based on this system.

261. The introduction of a new waste Act, which may be adopted before the end of 2008, will change this process by diverting waste away from landfills to better treatment options. These options include recycling, incineration or co-incineration, such as is practised in the cement industry.

262. The objectives of this Act are:

1. to protect human health and well-being as well as the environment by providing measures for
   - minimising the consumption of natural resources;
   - avoiding and minimising the waste generation;

- reducing, re-using, recycling and recovering waste;
- treating and safely disposing of waste as a last resort;
- preventing pollution and ecological degradation;
- securing ecologically sustainable development while promoting justifiable economic and social development;
- promoting and ensuring the effective delivery of waste services;
- remediating land where contamination presents, or may present, a significant risk of harm to health or the environment; and
- achieving integrated waste management reporting and planning;

2. to ensure that people are aware of the impact of waste on their health, well-being and the environment;

3. to provide for compliance with the measures set out in paragraph *(a)*; and

4. generally, to give effect to Section 24 of the Constitution in order to secure an environment that is not harmful to human health and well-being.

263. Voluntary initiatives for producer responsibility are being developed for certain types of waste, such as tyres, paper, and fluorescent tubes.

264. The Act defines waste as any substance, whether or not that substance can be reduced, re-used, recycled and recovered,

- that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
- which the generator has no further use of for the purposes of production;
- that must be treated or disposed of; or
- that is identified as a waste by the Minister by notice in the *Gazette*,

but a by-product is not considered waste; and any portion of waste, once re-used, recycled and recovered, ceases to be waste.

265. The Act also foresees provisions for by-products and for end-of-waste criteria. Under environmental law, steel scrap, recovered paper, and plastic scrap are considered waste until they have been processed in production facilities. Trading these materials with the goal of supplying them to paper production facilities, steel production facilities and plastic recycling facilities would be considered shipments of waste.

266. Under the new Act, waste management in South Africa is expected to evolve from a situation where the majority of collected waste is sent to landfills to more and more waste being re-used, recycled and recovered. The environmental ministry recognises that the current situation is unsatisfactory and that change is needed. This new Act will provide the legal basis necessary to make such change possible.

However, it will take time to see results comparable to other industrialized countries that have longer traditions of modern waste management.

Policy concerns related to imports and exports of waste

267. Major concerns in Africa relate to hazardous substances included in imported waste that cannot be treated properly. This does not only apply to waste, but also to second hand goods, which are cheaply imported, used for a limited time, then disposed of.

268. The paper industry is experiencing a supply shortage as not enough paper is collected domestically to meet the industry demand. As a result, paper is often collected by picking landfills where the quality is poor. A voluntary initiative to promote separate collection is being set up.

269. The situation for plastic scrap is similar as collection systems are not well established. Plastic is also mainly collected by picking landfills if the price of the materials is good enough. The collection and recycling business is mainly an informal economy and investment in this area is consequently compromised. Sorting and recycling facilities have poor working conditions and low standards for health and safety. Furthermore, poor storage of plastic scrap also raises concerns about fire hazards.

270. The major concern of the steel industry in South Africa is getting enough scrap to cover the domestic need. Collection in this area is not well developed either and more steel scrap is exported than imported. Another rising problem is the theft of non-waste metal objects which are then sold to recyclers for their high value as scrap.

Legal framework for trade in non-hazardous recyclable materials

271. South Africa is a Party to the Basel Convention and has implemented the provisions of the convention in national laws via the Import and Export Control Act, 1963 (Act N° 45) of 1963. The practical implementation of the laws is carried out by the International Trade Administration Commission (ITAC) that works under the control of the Department for Trade and Industry. The Department of Environmental Affairs and Tourism assesses whether a transboundary movement of waste is in compliance with the Basel Convention requirements regarding environmental protection. This only applies to hazardous waste covered by the Convention. To date, exports of steel scrap and recovered paper do require a permit from ITAC. This permit also applies to a number of non-waste goods for which export controls are considered necessary, and to a number of other types of metal scrap, but not to plastic scrap. For imports of all used and second-hand goods, waste and scrap of whatever nature, an import permit is required.

272. However, under the new Waste Bill South Africa wants to implement a notification procedure for non-hazardous recyclable materials as well. This would not be onerous. The procedure would require a contract and insurance covering the shipment. A form should be present during the shipment. After notification the authorities would agree to the shipment if the installation that receives the material would have the necessary environmental license. For exports a declaration of the competent authority in the country of destination would be sufficient. South Africa plans only to use environmental criteria as a tool to stop shipments.

Application of ESM to treatment and recycling inside South Africa

273. For recycling activities inside South Africa three layers of requirements may apply:

- A general duty of care requirement with respect to environmental matters

- Specific standards applicable to all operations of the same nature
- A site specific permit laying out detailed requirements for a specific installation

274. These requirements should ensure that waste is treated in an environmentally sound manner in South Africa.

Enforcement and control

275. Control of shipments, including waste, is the purview of the ITAC. They oversee the imports and exports of goods, including wastes and scraps. They also conduct controls at the ports. Enforcement of the rules on movement of waste is also within the competences of the environmental inspectors of South Africa. However, until now they have given little priority to such controls.

Perceived Measures Hampering Trade

276. To identify measures and practices that may hamper trade interviews were conducted with three companies that import and export non-hazardous recyclable materials. The profiles of these companies are given in Annex 2. Due to the small amounts of plastic scrap imported and exported, no companies involved in trade of these materials were interviewed.

Access to raw materials

277. The main problems raised by traders in South Africa were related to access to raw materials. Both the steel industry and the paper industry claim they need more domestic scrap and would like to see limitations on exports. This would not solve the problem for the paper industry as the amounts exported are relatively small compared to the needs. However, steel scrap is exported in significant amounts—in particular to Asian countries such as India, Vietnam and Malaysia. The steel industry has lobbied the government to impose export taxes on steel scrap, but the efforts were unsuccessful.

278. Scrap traders are under pressure from the scrap consuming industry in South Africa to deliver their material to them. The procedure applied to export licences, wherein the requests for exports are published to allow domestic companies to bid on materials traders would want to export, is one of the mechanisms in place to facilitate this. Traders only refrain from exporting if the domestic company's bid is more attractive. If not, the goverment will issue an export license.

279. Another symptom of the tensions between traders and domestic scrap users is anti-competitive behaviour. Currently, cases are under investigation with the Competition Commission in South Africa for price-fixing and collusion in the scrap industry. Recently, one scrap company was fined for these practices, and a possible cartel in the South African steel industry is under investigation.

280. These tensions are in the long term not good for the trading climate. Similar tensions exist between South Africa and its neighbouring countries. The South African steel industry imports large amounts of scrap, in particular from Zimbabwe. These imports are mentioned as problematic because they hamper the development of a local recycling industry in other African countries. Traders claim that some African countries have taken measures to reduce exports of scrap, in particular by installing export taxes.

Theft of metal scrap

281. Because prices for metal scrap have been relatively high, theft has been a problem for companies involved in the collection, trade, treatment, and recycling of metals. Metal objects are stolen and truckloads

of scrap or semi-finished products disappear. This issue requires scrap traders to be attentive to suspicious cargos of material delivered to them.

Concluding remarks

282. South Africa is a developing country that faces challenges in developing its economy as well as its environmental policy. Apart from the collection of scrap metals, collection of recyclable materials from waste still needs improvement. The volume of plastic scrap imported and exported is very limited, and recovered paper is imported and exported in relatively limited amounts. Only steel scrap is traded in large volumes.

283. The export procedures South Africa applies to non-hazardous recyclable materials are relatively simple but may be time-consuming in cases where an export license is required.

284. Traders mentioned problems related to access to raw materials and tensions between traders that want to export materials, in particular metal scrap, and the domestic steel industry seeking to purchase it.

285. Since the problems traders encounter are not specifically related to measures imposed by the government, but are mainly due to theft and tensions within their domestic market, they did not propose specific solutions that could be of particular relevance for the OECD.

286. The most important factor for improving the situation regarding recovered paper would be to improve separate collection of paper in South Africa. The new waste management policy and legislation as proposed by the Ministry of the Environment should be a good base for future changes.

287. Traders are satisfied with the attitude of the South African government regarding their position on export taxes. They warn about the spreading tendency in Africa to use export taxes to limit trade in scrap and recommend that developments in other countries be carefully observed.

Annexes

Annex 1. Trade data 2004 and 2005

288. Trade data from the UN COMTRADE database for recovered paper, plastic scrap and steel scrap in 2004 and 2005.

Table 51. Recovered Paper in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	308	32,566	1,282	138,204
470720	Waste or scrap from paperboard of bleached chemical pulp	62	9,530	194	27,402
470730	Waste or scrap from paper or board of mechanical pulp	301	35,542	351	39,945
470790	Other paper waste or scrap from paper or board	1,603	147,330	857	110,735
4707	**Total**	**2,274**	**224,968**	**2,685**	**316,286**

Table 52. Recovered Paper in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached craft or paperboard	328	42,029	1,455	173,999
470720	Waste or scrap from paperboard of bleached chemical pulp	50	13,028	100	19,456
470730	Waste or scrap from paper or board of mechanical pulp	243	33,387	206	25,626
470790	Other paper waste or scrap from paper or board	1153	157,738	851	111,285
4707	**Total**	**1,774**	**246,182**	**2,612**	**330,366**

Table 53. Plastic Scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	84	19,655	111	32,091
391520	Polystyrene waste or scrap	6	1,951	6	1,929
391530	Polyvinylchloride waste or scrap	4	1,5728	9	3,092
391590	Other plastic waste or scrap	75	21,200	190	72,449
3915	**Total**	**169**	**44,334**	**317**	**109,561**

Table 54. Plastic Scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	Polyethylene waste or scrap	90	31,999	155	52,824
391520	Polystyrene waste or scrap	6	2,582	3	1,566
391530	Polyvinylchloride waste or scrap	15	4,668	11	3,627
391590	Other plastic waste or scrap	77	34,691	207	92,036
3915	**Total**	**188**	**73,940**	**376**	**150,053**

Table 55. Steel Scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap of cast iron	126	42,428	117	47,686
720421	Waste or scrap of stainless steel	379	567,090	616	901,136
720429	Waste or scrap of allot steel other than stainless	56	17,785	27	8,421
720430	Waste or scrap of tinned iron steel	242	47,937	469	115,499
720441	Waste from mechanical working of iron or steel	186	61,761	199	67,722
720449	Other ferrous waste or scrap	1,254	278,235	2,429	562,123
720450	Re-melting scrap ingots, of iron or steel	8	15,335	2	438
7204	**Total**	**2,251**	**1,030,571**	**3,859**	**1,703,025**

Table 56. Steel Scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap of cast iron	57	12,907	161	34,395
720421	Waste or scrap of stainless steel	406	571,397	816	1,003,607
720429	Waste or scrap of allot steel other than stainless	175	47,303	64	22,614
720430	Waste or scrap of tinned iron steel	153	35,893	467	96,954
720441	Waste from mechanical working of iron or steel	205	44,916	243	48,675
720449	Other ferrous waste or scrap	1,142	272,439	2,963	649,545
720450	Re-melting scrap ingots, of iron or steel	11	10,341	0	29
7204	**Total**	**2,148**	**995,196**	**4,140,361**	**1,855,819**

Annex 2. Profiles of surveyed exporting/importing companies

Survey respondents	Trading materials	Activities	Key exporting/ importing markets	No. of employees	Nature of company structure	Years in the business
1	Steel scrap	Collection, trade and processing	Import from Zimbabwe	More than 100	Several subsidiaries in South Africa	More than 50 years
2	Steel scrap	Collection, trade and processing	Export to Asia	More than 50	Several subsidiaries in South Africa	10 years
3	Paper scrap	Collection and trade	(Limited) export to Asia	More than 50	Independent	10 years

CASE STUDY ON THE US[46]

289. Accounts provided by trading firms in the Netherlands suggest that a number of measures and practices within and outside the US that may hamper trade in the three categories of non hazardous recyclable waste covered by this study.

290. Within the US in particular, the frequent demands from the steel-consuming industries to limit exports of scrap in favour of domestic consumption cause problems for trade. Also, some local authorities apply flow management for municipal waste to separate collected recyclables, which limits access to scraps for traders.

291. Traders made a number of suggestions, including better transparency, speediness and predictability of Chinese export procedures, improved harmonization of the procedures applied by different countries around the world, reduced export taxes on non-hazardous recyclable materials, and the recognition of those materials as raw materials or commodities and not as waste.

Analysis of trade Flows[47]

292. The US-based scrap recycling industry is a capital-intensive industry that transforms more than 145 million tons of recyclable material each year into raw material for industrial manufacturing around the world[48]. In 2006, it was a US$65 billion industry with 50,000 employees.

Production and consumption of recovered paper and board

293. The US paper and board industry produced 84.599 million tons of paper and board in 2006. In the same year, 46.710 million tons of used paper was collected nationally for paper and board production. In total, 31.270 million tons were used for production of new paper and paperboard, and 1.814 million tons of collected used paper and paperboard were used for other purposes[49].

46 The case study was drafted by Kees Wielenga (FFact).

47 For most of these data on trade the commodity trade statistics database of UN has been used as source. This database provides for the most complete set of data and it can be used for all case studies. The trade data are presented for the different codes in the Harmonized System (HS) of goods of the World Customs Organization.

48 Source: Institute of Scrap Recycling Industries (ISRI).

49 Source: Recovered paper data 2006 published by the FAO.

Exports and imports of used paper and board

Table 57. Exports and imports of recovered paper and board in 2006

HS-Code[50]	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached kraft or paperboard	161	18,783	4,834	657,726
470720	Waste or scrap from paperboard of bleached chemical pulp	58	9,825	1,493	274,091
470730	Waste or scrap from paper or board of mechanical pulp	43	5,371	3,699	447,156
470790	Other paper waste or scrap from paper or board	177	31,397	5,895	704,697
4707	**Total**	**438**	**65,375**	**15,921**	**2,083,670**

Source: UN Commodity trade statistics database

294. Between 2004 and 2006, imports decreased by 13%, while exports increased by 23%. Data for 2004 and 2005 are given in Appendix 1.

Major trade partners

295. The majority of exported recovered paper and board goes to China (9.128 million tons), Canada (2.009 million tons) and Mexico (1.139 million tons). The main countries from which recovered paper is imported are Canada (419 thousand tons), representing 95% of the imports, Mexico (18 thousand tons), and China (258 tons)[51]. Trade of recovered paper between the US and Canada goes in both directions. The US exports mainly paper scrap (470730) to Canada, whereas it imports mainly paperboard (470710 or mixed paper (470790) from Canada.

Production and consumption of plastic scrap

296. In 2006 957,500 tons of plastic (bottles) were recycled in the US.

Exports and imports of used plastic

Table 58. Exports and imports of plastic scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	PolyEthylene waste or scrap	76	49,380	356	197,867
391520	PolyStyrene waste or scrap	12	8,670	17	9,635
391530	PolyVinylChloride waste or scrap	13	6,110	65	32,146
391590	Other plastic waste or scrap	456	360,741	626	341,628
3915	**Total**	**557**	**424,900**	**1,065**	**581,276**

Source: UN Commodity trade statistics database

50 Harmonised System Code: A harmonized code that identifies the commodity (in principal 8 digits, for this study the 6 digit-level seems accurate enough).

51 Source : UN Commodity trade statistics database (COMTRADE).

297. Between 2004 and 2006, imports increased by 41%, while exports increased by 43%. Data for 2004 and 2005 are given in Appendix 1.

Major trade partners

298. In 2006, the largest share of exports went to Hong Kong (436,190 tons), China (359,273 tons), and Canada (185,188 million tons). An unknown but significant amount of the plastic waste exported to Hong Kong is subsequently re-exported to the Republic of China, making that country the main recipient of plastic scrap from the US. The majority of the imported scrap in 2006 came from Mexico (153,862 tons), China (96,223 tons), and Canada (96,059 tons). The fact that the US not only exports plastic scrap to China but also imports scrap from China may be partly explained by contracts that stipulate that the exporter take back scrap processed in China for further recycling.

Production and consumption of steel scrap

299. The total production of steel in the US estimated by IISR for 2006 was 98.557 million tons. The largest steel producer in the US that year was US Steel with a production of 21.2 million tons.

Exports and imports of used steel

Table 59. Exports and imports of steel scrap in 2006

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap from cast iron	409	74,427	2,132	412,862
720421	Waste or scrap from stainless steel	179	211,968	1,354	716,271
720429	Waste or scrap from alloyed steel other than stainless	524	113,007	2,355	873,869
720430	Waste or scrap from tinned iron steel	10	2,624	73	30,115
720441	Waste from mechanical working of iron or steel	1,833	479,646	612	95,082
720449	Other ferrous waste or scrap	1,858	425,549	8,369	2,111,754
720450	Remelting scrap ingots, of iron or steel	1	444	8	8,984
7204	**Total**	**4,813**	**1,307,645**	**14,901**	**4,248,937**

Source : UN Commodity trade statistics database.

300. Between 2004 and 2006, imports increased by 3%, while exports increased by 25%. Data for 2004 and 2005 are given in Appendix 1.

Major trade partners

301. The largest share of exports go to China (3.436 million tons), followed by Turkey (2.471 million tons), and Canada (1.511 million tons). Imported scrap mainly comes from Canada (3.143 million tons), followed by the United Kingdom (0.650 million tons), and Sweden (0.265 million tons). The fact that there are significant exports from the US to Canada and at the same time significant imports from Canada is partly explained by the fact that these are two different types of scrap. The US exports large amounts of alloyed scrap (740429) to Canada, whereas Canada mainly exports other ferrous scrap (720449) to the US.

Analysis of Trade Flows

302. The growth of trade in steel scrap, recovered paper, and plastic scrap over the last few years can be attributed to a growing demand for raw materials in Europe and East Asia. Accordingly, the prices for these materials have risen, or remained stable but high. The price of cellulose, for instance, reached a record high in 2006.

303. The main trade partners for the three materials are shown in the following table.

Table 60. Key importing and exporting markets per material in 2006

Material	EXPORTS		IMPORTS	
	Country	Amount (million tons)	Country	Amount (million tons)
Paper and board	China	9.128	Canada	0.419
	Canada	2.009	Mexico	0.018
	Mexico	1.139	China	Nihil
Plastic scrap	Hong Kong	0.436	Mexico	0.154
	China	0.359	China	0.096
	Canada	0.185	Canada	0.096
Steel scrap	China	3.436	Canada	3.143
	Turkey	2.471	United Kingdom	0.650
	Canada	1.511	Sweden	0.265

Legal and policy framework

General legal and policy framework for waste management

304. In the US, waste management legislation and policy are executed on the Federal level and on the state and local levels. States have considerable autonomy over environmental issues—they are responsible for planning and often for issuing permits for installations. On the Federal level the most important actor in waste management is the Environmental Protection Agency (EPA). The agency's primary roles are to set national goals, to provide leadership and technical assistance, and to develop guidance and educational materials.

305. The most important Federal legislation is the Resource Conservation and Recovery Act (RCRA). This Act contains provisions on management of hazardous waste and municipal solid waste. Its main objectives are to:

- Reduce waste and increase the efficient and sustainable use of resources
- Protect humans and ecosystems from exposure to hazardous chemicals
- Manage waste and clean up chemical releases in a safe, environmentally sound manner

306. On the basis of the actions undertaken under the RCRA solid waste program, the dependency of the US on landfills has been reduced and recycling has increased considerably; for municipal solid waste, landfilling reduced from 69% in 1990 to 55% in 2006; over the same period, recycling (including composting) increased from 16% to 32%.

Legal framework for trade in non-hazardous recyclable materials

307. The US is not a Party to the Basel Convention. However, it has implemented OECD Decision C(2001)107FINAL concerning the control of transboundary movements of waste destined for recovery operations (further the OECD Decision). This Decision contains provisions for regulating trade in wastes that provide equivalent environmental protection as the provisions of the Basel Convention. The OECD Decision is therefore considered to be a multilateral agreement under the Convention that allows trade in hazardous waste between the US and other OECD Member Countries that are Parties to the Basel Convention. Moreover, it covers not only trade in hazardous waste, but also trade in non-hazardous wastes, albeit only for recovery (including recycling) and not final disposal. In addition to the multilateral agreement with the OECD Member Countries, the US has bilateral agreements on waste trade with Mexico and Canada and import agreements with Malaysia, Costa Rica and the Philippines. These import agreements regulate imports of hazardous waste to the US, while exports of hazardous waste to these countries are not allowed.

308. The provisions of the OECD Decision are implemented into US Federal law in the RCRA. The EPA is the agency charged with controlling the execution of the provisions regarding imports and exports of waste in the RCRA. The EPA is also responsible for enforcement actions. The regional offices or the states monitor treatment, storage, and the disposal facilities that import waste.

309. For hazardous waste prior notification with tacit consent as laid forth in the OECD Decision applies. For trade in non-hazardous recyclable waste there are no specific import or export procedures. Standard commercial controls, including customs controls, apply and the shipments should be accompanied by the information requested under the customs provisions.

Enforcement and control

310. Control of shipments, including waste shipments, is the purview of both the federal and regional EPA offices. They work in partnership with customs and border protection staff. One example of enforcement activities is border checks. For example, the regional EPA office based in California regularly conducts stops at the Mexican border in cooperation with customs and border patrol. From July 2006 through June 2007, 844 trucks carrying non RCRA regulated/non-hazardous recyclable wastes were stopped and controlled. None of them were in violation of the applicable regulations. In the same period, 367 trucks with hazardous waste were controlled, of which five were in violation of these regulations (EPA CA, 2008).

Perceived Measures Hampering Trade

311. To identify measures and practices that may hamper trade, interviews were conducted with six companies that import and export non-hazardous recyclable materials. The profiles of these companies are given in Annex 2.

312. In general, traders do not encounter too many problems with the US provisions regarding imports and exports of non-hazardous recyclable materials. The procedures adopted in the US for these materials are modelled on the OECD Decision and do not require any particular notification. Furthermore, the standard commercial control documents, such as contracts between supplier and buyer, as well as standard customs documentation, are sufficient for importing or exporting these materials.

313. The following problems were mentioned, however:

- The prohibitive measures imposed by the importing countries, in particular China;

- The variance in procedures depending on the country of origin or destination;
- Demands from US steel-consuming industries to limit exports of steel scrap;
- Limited access to materials due to flow management provisions imposed by some US local authorities.

Prohibitive control procedures imposed by China

314. China has implemented a system by which companies must obtain a permit from the local Environmental Protection Agency in order to import waste. Both the foreign exporting company and the importing company in China must obtain a permit. Only materials that meet the specifications in the Chinese 'List of Waste that can be used as Raw Materials' can be imported. Steel scrap, recovered paper, and plastic scrap are listed and the requirements, particularly regarding the level of contamination with non-desired materials, are specified. Shipments of these materials are inspected upon arrival in China by the customs and the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Pre-departure inspections are also required in the port of origin inside the US. This inspection is conducted by the China Certification and Inspection Group (CCIC) with the goal of ensuring that all shipments that leave for China meet the requirements of the Chinese legislation. Traders indicate that this pre-inspection has the advantage of decreasing the number of shipments that encounter problems upon arrival. However, in practice the system presented a number of problems, which were mentioned during the interviews.

The pre-departure inspection by the CCIC may be time-consuming and costly

315. Normally the inspection takes place within a reasonable time frame, but in certain cases it may take weeks before an inspector makes his report. Also, the cost of the inspection depends on the distance the inspectors have to travel. Since the CCIC does not have offices in all ports these travel costs may be high.

A favourable decision of the CCIC in the US is no guarantee that the shipment will pass the ASQIQ control in China

316. Although the situation is much better than before the installation of the pre-departure control system, it is still possible that shipments released by the CCIC for departure to China may encounter problems with the ASQIQ control upon arrival in China. The CCIC uses visual inspections only, which can be arbitrary. If a problem arises in China it is difficult to settle because the mechanisms in place for appeal in cases of a perceived arbitrary decision by the Chinese authorities are limited and access to judicial recourses is complicated.

Criteria applied for registration as an exporter

317. To be entitled to export to China the exporting company needs a specific permit. The criteria for granting these permits are not totally transparent, and renewing a permit may take a long time. Until a permit is re-issued, a company is not entitled to export to China.

The variance of procedures depending on the country of origin or destination

318. Not only China, but other countries have their own procedures for trading non-hazardous recyclable materials. Several exporters indicated that this makes trade difficult for companies that export to many countries. The fact that countries require different information and apply different procedural steps adds considerably to the exporter's administrative burden. In principle, this would also apply to other

exported goods. Customs requirements may also vary to a certain extent from one country to another. However, since steel scrap, recovered paper, and plastic scrap are considered waste in most countries, different provisions for imports and exports of waste are added onto these already variable customs procedures. Exporters mentioned the following examples:

319. The OECD aimed to harmonise the procedures among member countries according to the OECD Decision. However, the EU has implemented its own Regulation[52] based on the OECD Decision, but with some differences. In particular, the use of a specific document (Annex VII) was mentioned as problematic, since it requires information which would normally not be necessary for other commercial transactions. Two exporters pointed out that they were concerned about releasing sensitive commercial information regarding the origin and final destination of the materials.

320. One exporter also mentioned that the rules are applied differently within the EU countries. Some, like the Netherlands, are strict while others, like Italy, are more lenient.

321. One exporter pointed out that India's export procedures are similar to China's, but that the pre-departure controls are more flexible.

Demands from the US steel consuming industries to reduce exports of steel scrap

322. There is pressure by the steel consuming industries in the US to adopt measures to reduce exports of steel scrap. An example is the request from the American Scrap Coalition (ASC), an industrial interest group formed by a number of steel consuming industries, to stop credit facilities for scrap traders that want to export steel scrap. The ASC claims that US industries aren't getting access to scrap at reasonable prices. Export taxes in a number of countries, including the Russian Federation, India, Pakistan, Indonesia and China have made it more difficult for the US to import steel scrap, yet exports of these materials are increasing steadily.

323. The scrap traders are opposed to any restrictions on exports. They argue that the high prices reflect the global demand for scrap and the high prices of primary raw materials and deny that there is a shortage of domestic scrap in the US. Despite these efforts on the part of the steel industry, the US government has not taken any measures to limit exports. A long lasting conflict with the US steel consuming industries is not beneficial to trade, and there are indications that the ASC is willing to redirect its efforts to combating export taxes in other countries, rather than asking for export restrictions on US scrap.

Limited access to material due to flow management provisions imposed by some US local authorities

324. Certain local or regional authorities in the US have implemented measures for flow management of waste. These measures are intended to ensure that waste, in particular municipal waste, goes to adequate disposal facilities. The authorities grant exclusive rights to a single operator to collect municipal waste and deliver it to a designated installation close to the area where the waste is generated. Some traders indicate that they have encountered problems when authorities apply flow management to separately collected materials which are suitable for recycling. In these cases, the materials go only to the designated operator; this limits access to these materials by other traders.

325. It is important to note that this problem is not widespread in the US and affects a limited number of municipalities which have elected to implement flow management measures. Even those municipalities do not always apply flow management measures to recyclable materials.

52 Regulation (EC) N° 1013/2006 on Shipments of Waste.

Concluding remarks

326. The US is one of the largest exporters of steel scrap, recovered paper, and plastic scrap in the world, despite a large domestic demand for all three of these materials. The amounts exported have been increasing over the years. However, the amounts imported are much smaller than the amounts exported.

327. The measures in place in the US regarding trade of non-hazardous recyclable materials are based on those stipulated in the OECD Decision. Traders haven't mentioned any particular problems with these measures, though export procedures for the same materials as applied by other countries can present issues. China's export procedures were mentioned in particular.

328. In addition, the fact that different countries all have their own specific procedures makes trade for those that export and import materials from a large number of countries complicated. These diverging provisions and procedures add considerably to the administrative burden for traders.

329. Export taxes imposed by a number of countries to limit exports of steel scrap have the effect of limiting the domestic scrap consuming industry's access to raw materials. They claim that scrap prices are unnecessarily high and, until recently, requested measures to limit exports of scrap from the US. In the meantime the scrap consuming industries also see that combating export taxes in the other countries could help improve their access to raw materials.

330. Flow management of municipal waste by some local and regional governments in the US was reported to extend beyond municipal waste destined for disposal and affect access to separately collected recyclables. The impact of flow management should not be overstated, as it exists only in a limited number of municipalities, and seldom applies to recyclable materials.

331. Several traders suggested possible measures to promote trade. These measures are not targeted at the US specifically; indeed, the US regulation is already aligned with some of them (typically, the US already regards traded paper, plastics and metals as commodities; see item 4 below). However, according to the US traders who were contacted, these suggestions could positively affect trade in recyclable materials. They include:

- Improving transparency, speediness, and predictability of Chinese export procedures;
- Better harmonising the measures applied to non-hazardous recyclable materials traded as waste;
- Negotiating a reduction of export taxes on steel scrap to ensure sufficient access to raw materials;
- Recognizing non-hazardous recyclable materials as raw materials or commodities and not as waste.

332. This last measure should, in the view of traders, help overcome most of the problems identified. Traders believe that most problems affecting trade in their materials come from the fact that authorities impose specific measures to waste. They consider that, provided the material is well defined and directly suitable for use as secondary raw material in industrial manufacturing process, such additional measures are not necessary. Instead, they believe such materials should be traded as standard raw materials, without additional procedures.

References

EPA CA (2008), Enforcement and Empergency Response Program Compliance Monitoring and Enforcement, Final report for Fiscal Year 2006 – 07. EPA California, 2008.

EPA (2008), EPA'sReport on the Environment 2008. U.S. Environmental Protection Agency, Washington DC, 2008.

Annex 1. Trade data 2004 and 2005

333. Trade data from the UN COMTRADE database for recovered paper, plastic scrap, and steel scrap in 2004 and 2005.

Table 61. Recovered paper in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached kraft or paperboard	177	22,717	3,869	502,909
470720	Waste or scrap from paperboard of bleached chemical pulp	45	7,959	1,236	224,383
470730	Waste or scrap from paper or board of mechanical pulp	51	6,073	3,267	393,888
470790	Other paper waste or scrap from paper or board	233	36,398	4,523	392,242
4707	**Total**	**506**	**73,147**	**12,895**	**1,513,422**

Table 62. Recovered paper in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
470710	Waste or scrap from unbleached kraft or paperboard	171	22,168	4,285	600,868
470720	Waste or scrap from paperboard of bleached chemical pulp	58	10,509	1,476	250,940
470730	Waste or scrap from paper or board of mechanical pulp	58	7,280	3,661	456,773
470790	Other paper waste or scrap from paper or board	208	32,346	5,187	412,185
4707	**Total**	**495**	**72,302**	**14,609**	**1,720,766**

Table 63. Plastic scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	PolyEthylene waste or scrap	35	14,191	268	110,724
391520	PolyStyrene waste or scrap	4	2,401	19	9,541
391530	PolyVinylChloride waste or scrap	17	5,314	61	23,200
391590	Other plastic waste or scrap	341	164,895	398	203,578
3915	**Total**	**396**	**186,802**	**745**	**347,043**

Table 64. Plastic scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
391510	PolyEthylene waste or scrap	55	28,940	279	142,683
391520	PolyStyrene waste or scrap	6	3,653	18	9,690
391530	PolyVinylChloride waste or scrap	14	6,291	58	25,804
391590	Other plastic waste or scrap	392	214,775	505	273,687
3915	**Total**	**468**	**253,659**	**860**	**451,864**

Table 65. Steel scrap in 2004

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste of scrap from cast iron	331	64,324	1,039	204,961
720421	Waste or scrap from stainless steel	146	163,718	503	581,482
720429	Waste or scrap of alloy steel other than stainless	293	79,862	1,824	398,665
720430	Waste or scrap from tinned iron steel	10	2,130	83	19,354
720441	Waste from mechanical working of iron or steel	1,528	412,820	844	111,601
720449	Other ferrous waste or scrap	2,317	574,653	7,600	1,634,544
720450	Remelting scrap ingots, of iron or steel	31	1,279	7	6,287
7204	**Total**	**4,657**	**1,298,788**	**11,899**	**2,956,895**

Table 66. Steel scrap in 2005

HS-Code	Commodity description	IMPORTS		EXPORTS	
		1,000 tons	1,000 USD	1,000 tons	1,000 USD
720410	Waste or scrap from cast iron	382	63,528	1,127	256,854
720421	Waste or scrap from stainless steel	111	126,336	602	697,001
720429	Waste or scrap from allot steel other than stainless	424	83,957	1,574	458,503
720430	Waste or scrap from tinned iron steel	17	3,310	77	24,944
720441	Waste from mechanical working of iron or steel	1,420	350,082	948	129,315
720449	Other ferrous waste or scrap	1,479	326,527	8,663	1,891,450
720450	Remelting scrap ingots, of iron or steel	2	1,117	10	8,904
7204	**Total**	**3,836**	**954,857**	**13,001**	**3,466,971**