INSG Insight

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An Overview of World Stainless Steel Scrap Trade in 2016

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Introduction

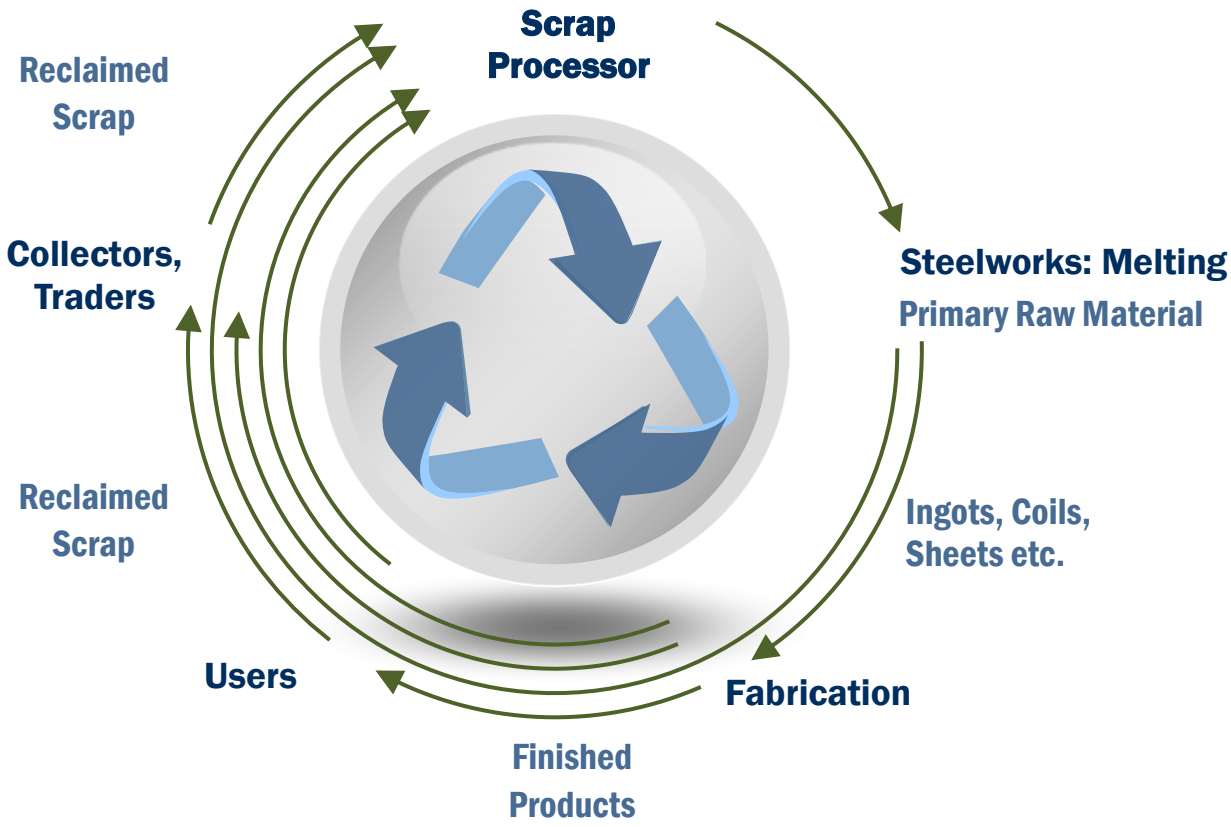
The International Nickel Study Group (INSG) collects data on stainless steel scrap (SSS) trade on a monthly basis as part of its regular market research activities. Detailed figures are published on country basis in the INSG Monthly Bulletin and Yearbook, and are also available on the Study Group's online Statistical Database to members and subscribers.

This Insight report, the 29th in the series, provides members with an analysis of this market, highlighting the major trends of SSS trade between countries around the World.

Secondary nickel units coming from SSS are extremely important when analysing the global nickel market as they are equivalent to more than one third of primary nickel production in recent years. SSS international trade is a very relevant part of the whole SSS market because a considerable part of the material available in some countries is exported and used in other countries.

Finally, integrating scrap into the nickel life cycle is recognizably a significant factor for the protection of the environment and the promotion of the circular economy, giving further weight to the importance placed on this topic by the Study Group.

Figure 1 - Stainless steel scrap flow



Source: Cronimet

This report is organised in six sections. The first section summarizes the main trends regarding world stainless steel production. Then we have four sections focusing on regional SSS trade:

- North and South America (Canada, Brazil, Mexico and United States);
- Europe (Belgium, Finland, France, Germany, Italy, Netherlands, Slovenia, Sweden, Spain, Russian Federation and United Kingdom);
- Asia (China P.R., India, Japan, Kazakhstan, Korea P.R., Taiwan (China), Turkey);
- Africa & Oceania (South Africa and Australia).

In the last section will add some final comments about the global market.

General notes

INSG follows the "Harmonized System"[1] (HS) nomenclature to collect and publish international trade data. The pertinent HS Code related to stainless steel scrap is: “720421 Waste and scrap of stainless steel ‘ECSC’ (excl. radioactive, and waste and scrap of batteries and electric accumulators)”. In this report we will refer to this code by the term stainless steel scrap (or SSS).

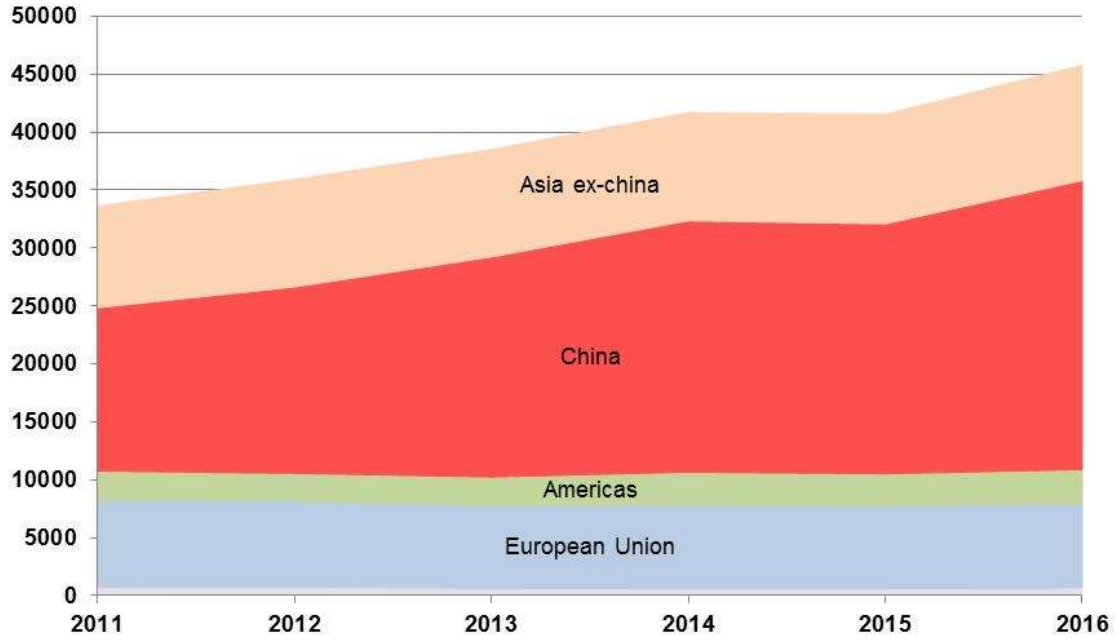
[1] The Harmonized Commodity Description and Coding System generally referred to as "Harmonized System" or simply "HS" is a multipurpose international product nomenclature developed by the World Customs Organization (WCO).

Additional notes (unless otherwise stated): 1) all figures are official statistics; 2) all quantities are in metric tons (t) (usually rounded to thousand tons - kt); 3) the periods are in calendar years; some figures are still preliminary; 4) net trade refers to imports minus exports; 5) mirror statistics (or "mirror") mean that the figure for a specific country is reported by its partners (e.g. imports of country A are the exports of all the reporting countries to country A); 6) percentage figures with "+" or "-" between brackets refer to growth rate (e.g. (-1%) = one percent decrease).

1. World Stainless Steel Production

The typical destination of SSS is in the mills as raw material for the production of new stainless steel, so in this section we will analyse world stainless steel production over the last few years.

Graph 1 – World stainless steel production – 2011-16



Source: ISSF

According to the International Stainless Steel Forum (ISSF), world stainless steel melting production reached 45.8 Mt in 2016, a 10.2% increase compared with 2015.

With 55% of the production, China P.R. is the biggest producing country in the world and over the last few years virtually all the production increases came from there. China recorded an impressive 15.7% growth rebounding from the 0.6% decrease in 2015, driven by strong domestic demand and sustained exports mainly to other Asian countries.

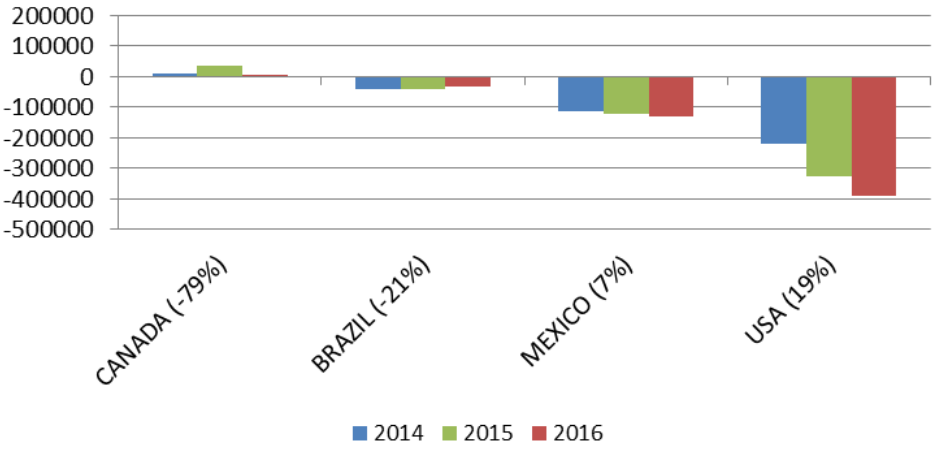
Regarding the different grades, ISSF splits the melt shop production in 2016 as 54% chrome-nickel, 21.5% chrome-manganese and 23.2% chrome stainless steel. The two first grades are the ones using nickel. Compared to 2015, chrome-nickel and chrome-manganese marginally increased their shares, while chrome stainless steel decreased.

Estimated scrap ratios vary from place to place. In the Europe, scrap averages around 60% among the different countries, while in the United States it may reach close to 80%. In Asia, Japan and S. Korea usually use more than 50% of scrap, while Taiwan (China) uses less than that. India uses more than 60% and China P.R. is estimated to use less than 20%. International trade complements domestic sources of scrap for the producers.

2. Americas

In this section, North and South America will be covered, analysing in more detail Canada, Brazil, Mexico and United States (US).

Graph 2 – Stainless steel scrap net trade – Americas – 2014-16



Source: Country Customs, GTI, INSG

Canada is a net importer of SSS: in 2016, imported 221kt (17.6%) and exported 214kt (39%). The US is, by far, Canada's most important market: virtually all SSS came from the neighbour and around 75% was also exported to this country. 12% of the exports went to Thailand.

Brazil is a net exporter of SSS: in 2016, only imported 1kt and exported 35kt (-21%). Brazil's main destination was the Netherlands (43% of all the material).

Mexico is a net exporter of SSS: in 2016, imported less than 1kt and exported 133kt (+7.2%). The largest share of the scrap went to the US (73%).

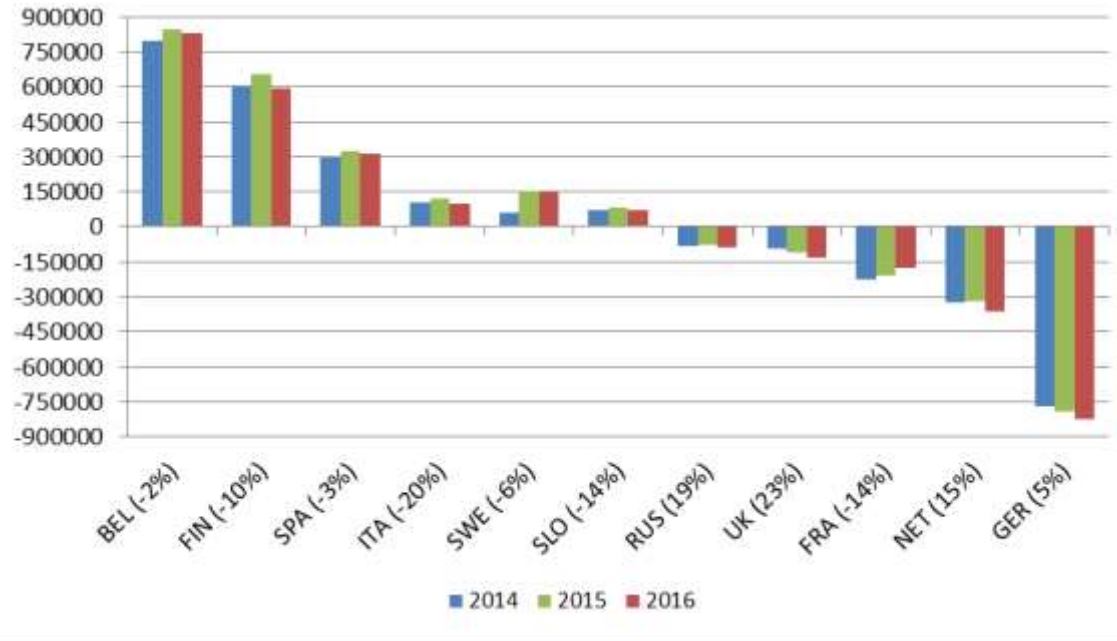
United States is a net exporter of SSS: in 2016, imported 263kt (36.7%) and exported 654kt (25.8%). Neighbouring country Canada was the most relevant trade partner (61% of imports and 28% of exports). Another important source of imports was Mexico (38%). China and Taiwan (China) were both important export destinations (20% and 19% respectively). The US economy generates a large volume of scrap, uses part of it in SS production and exports the rest. The scrap industry is recognized as very dynamic.

3. Europe

As we can see in Graph 2 some European countries are exporters while others are importers. The 3 most relevant net importers are Belgium, Finland and Spain and the 3 most relevant net exporters are France, the Netherlands and Germany. The

rest of the countries have only traded relatively small tonnages: 1) net importers: Italy, Sweden and Slovenia; 2) net exporters: Russian Federation and the UK. Traditionally, European countries trade a significant amount of SSS between each other.

Graph 3 – Stainless steel scrap net trade – Europe – 2014-2016



Source: Eurostat, GTI, INSG

Belgium is a net importer of SSS: in 2016, imported 903kt (-0.7%) and exported 71kt (11.5%). Most scrap came from Germany (49%) and France (38%) and went to the Netherlands (48%), China P.R. (27%) and France (12%).

Finland (mirror) is a net importer of SSS: in 2016, mirror statistics show that the country imported 607kt (-8.6%) and exported a reported figure of 14.5kt (+92.5%). The main origins of the scrap were the Netherlands (64%), Poland (18%) and Germany (17%).

Spain is a net importer of SSS: in 2016, imported 332kt (-4.2%) and only exported 21kt (-14.6%). Spain concentrated its main source of scrap in the Netherlands (64%, considerably up from 39% in 2015).

France is a net exporter of SSS: in 2016, imported 116kt (-13.8%) and exported 295kt (-13.7%). Belgium (84%) is the most important destination of French scrap.

Netherlands is a net exporter of SSS: in 2016, imported 372kt (-23.8%) and exported 737kt (-8.6%). The country serves as a trading hub, importing and exporting scrap from and to several countries.

Germany is a net exporter of SSS: in 2016, imported 258kt (-12.4%) and exported 1085kt (0.1%). Germany relies on several neighbouring countries to source its scrap units – Russian Federation (6%), Switzerland (8%), Poland (9%), Czech Rep. (13%), Netherlands (16%) and Austria (19%). Exports went mostly to Belgium (42%), Netherlands (18%), Finland (9%), Italy (9%) and Slovenia (8%).

Italy is a net importer of SSS: in 2016, imported 191kt (-2.2%) and exported 92kt (+28.4%). Sweden is a net importer of SSS: in 2016, imported 181kt (-2.8%) and exported 34kt (12.4%). Slovenia is a net importer of SSS: in 2016, imported 81kt (-12.4%) and exported 12kt (flat from 2015).

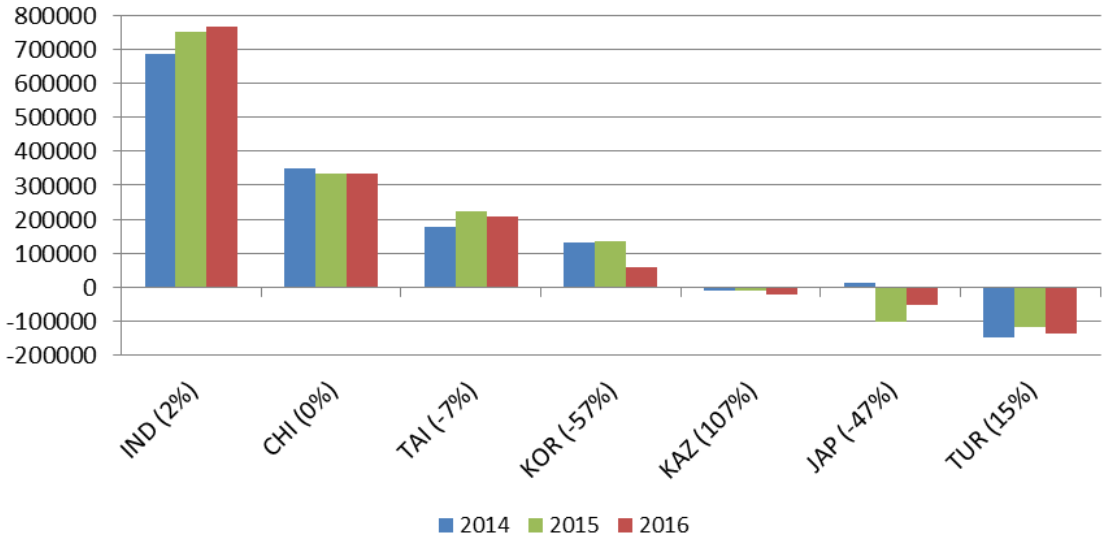
Russian Federation is a net exporter of SSS: in 2016, imported virtually nothing and exported 90kt (18.7%). United Kingdom is a net exporter of SSS: in 2016, imported 44kt (6.3%) and exported 178kt (+18.3%).

4. Asia

India is an importer of SSS: in 2016, imported 766kt (+1.9%). India's demand has been growing steadily since 2009, when the country imported less than 250kt. India imports scrap from many countries around the world. The main ones are: US (11%), Thailand (10%), South Korea (9%), United Arab Emirates (8%) and Malaysia (7%).

China P.R. (mirror) is a net importer of SSS: in 2016, mirror statistics show that the country imported at least 349kt (4.4%). Exports are relatively insignificant. The biggest share of scrap arrived from Hong Kong (40%) arrived, followed by the US (38%). Hong Kong functions as a trade hub, re-exporting virtually all the scrap to mainland China.

Graph 4 - Stainless steel scrap net trade – Asia – 2014-16



Source: Country Customs, GTI, INSG

Taiwan (China) is a net importer of SSS: in 2016, imported around 246kt (-7.2%) and exported 38kt (-6.4%). Taiwan's most important source of imports is the US (31%), followed by Japan (15%). Exports go to Japan (39%), Korea (17%) and China (13%).

Korea P.R. is a net importer of SSS: in 2016, imported 209kt (-27.9%) and exported almost 151kt (-1.9%). Imports mainly come from Japan (40%), Thailand (18%) and US (10%). Exports go mainly to India (47%) and Japan (33%).

Japan is a net exporter of SSS: in 2016, imported 101kt (12.2%) and exported around 154kt (-19%). Korea is the most relevant trading partner (representing 49%

of imports and 56% of exports), followed by Taiwan (22% imports and 24% exports). Other trade partners are the USA (13% imports) and Thailand (9% exports).

Turkey is an exporter of SSS: in 2016, exported 134kt (15.5%). The main destinations were the Netherlands (39%), India (30%) and Spain (16%).

5. Africa & Oceania

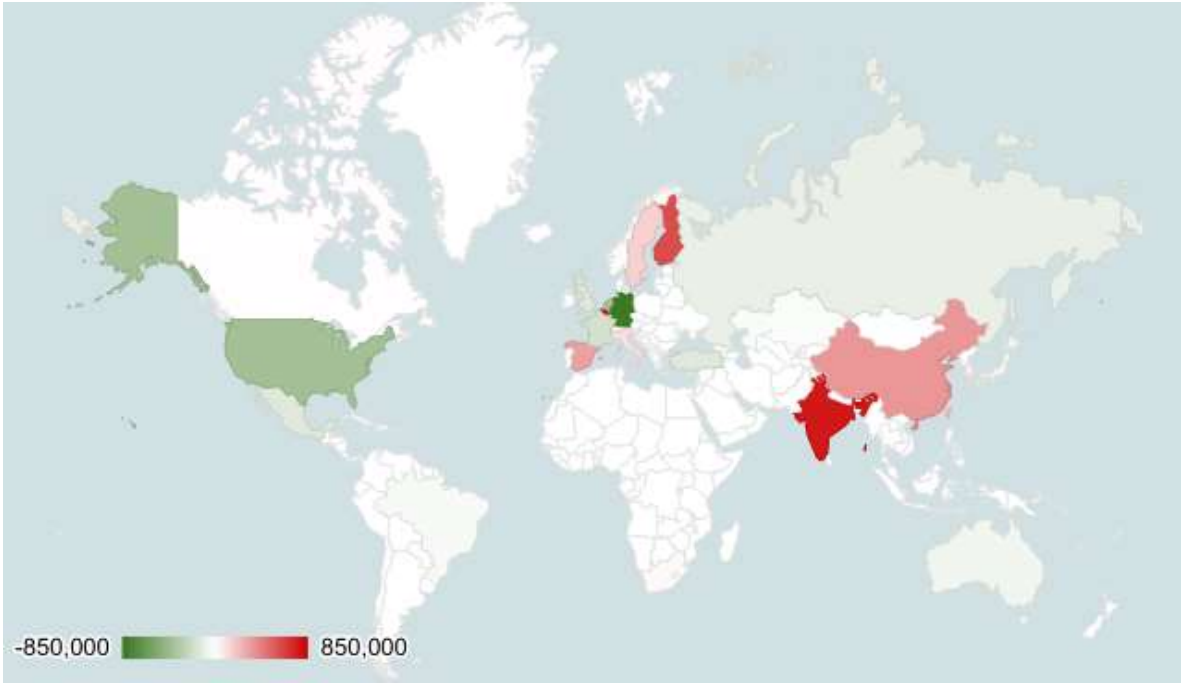
South Africa switched from a position of net exporter to net importer of SSS from 2015 to 2016. In 2016, imports were 22kt (186%) and exports 6kt (-57.1%). Scrap arrived mainly from Malaysia (48%), Namibia (18%), Zimbabwe (12%); and was mostly exported to India (75%).

Australia is a net exporter of SSS: in 2016, imports were negligible and exports totalled 55kt (+9.2%). The biggest destination for exports was India (29%).

6. World of stainless steel scrap trade

Generally speaking SSS is generated by recovering the material from the stainless steel production process itself and from obsolete products and demolished buildings. In this sense, stainless steel scrap generation is more closely linked to producing countries or more advanced ones (used stainless steel in the past). SSS imports are usually more connected to producing countries. Additionally, there are countries which are trading hubs, where the material is imported and re-exported.

Map 1 – Stainless steel scrap net trade – World – 2016



Source: Country Customs, Eurostat, GTI, INSG

Map 1 shows the global view of world stainless steel scrap net trade (imports minus exports) for the most relevant countries. In different tones of green we can find net exporting countries and in red net importing countries.

In short, the Americas are net exporters - the United States is the third largest exporting country (Table 1). Asian countries are net importers - India is the second largest importing country (Table 2).

Table 1 – Top 3 stainless steel scrap exporters

Country	2016		2015		2014	
	k tons	Rank	k tons	Rank	k tons	Rank
Germany	1085	1	1082	1	1109	1
Netherlands	737	2	804	2	899	2
United States	654	3	520	3	548	3

Source: Eurostat, Country Customs, INSG

Table 2 – Top 3 stainless steel scrap importers

Country	2016		2015		2014	
	k tons	Rank	k tons	Rank	k tons	Rank
Belgium	903	1	931	1	870	1
India	766	2	751	2	686	2
Finland (mirror)	607	3	607	3	664	3

Source: Eurostat, Country Customs, INSG

In Europe there are both exporting and importing countries – Germany and The Netherlands are the first and second biggest exporters, and Belgium and Finland (mirror) are the first and third importers, respectively.

Countries in Africa and Oceania are typically small in terms of SSS trade.

The analysis shows that, in addition to a global perspective, there is also a regional focus about scrap trade as a considerable share of trade is done with countries located nearby. Transportation costs and economic integration are amongst the reasons for this.

Considering the countries analysed in this report, in 2016 imports decreased 3.8% and exports increased 3.3%. Both aggregates decreased in Europe and Asia, but were partially compensated by an increase in the Americas. In 2015 we saw a decrease on both sides of trade.

With scrap ratios in the production of stainless steel close to an estimated 60% on average in the European Union, around 50% in Japan, Korea and Taiwan, and lower but still significant in China, stainless steel scrap (and its trade) is an extremely important issue for this sector. Also, recovering material from secondary sources instead of primary ones, especially considering the size of the tonnages involved, is of considerable importance for the protection of the environment and the promotion of the circular economy.

Useful links:
World Customs Organization (WCO): www.wcoomd.org
International Stainless Steel Forum (ISSF): www.worldstainless.org

Member countries are encouraged to contact the INSG secretariat with questions or suggestions for further work on this topic.

Comments or questions

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