

WORLD STEEL RECYCLING
IN FIGURES 2010 – 2014

Steel Scrap – a Raw Material for Steelmaking



Bureau of
International Recycling
Ferrous Division

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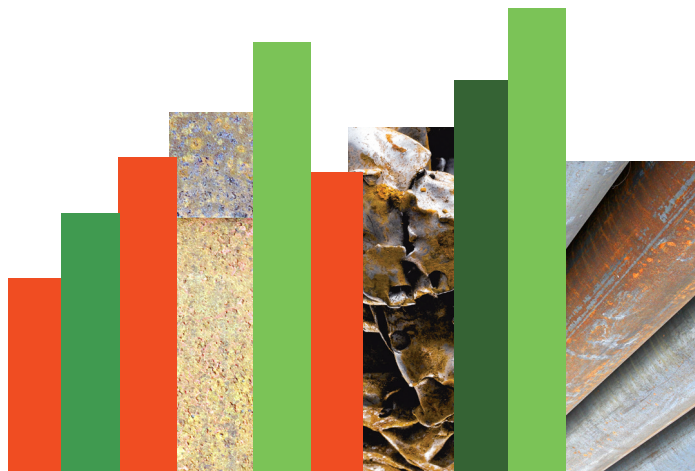
FOREWORD

The new edition of our BIR ferrous report “World Steel Recycling in Figures”, which covers the five-year period between 2010 and 2014, highlights the importance of ferrous scrap as a global raw material for the world’s steelworks and for its iron and steel foundries.

It is a great pleasure for me to announce the publication of the sixth edition of our “World Steel Recycling in Figures” report. This compilation of important statistics relating to the global ferrous scrap markets has received a hugely positive reception since it appeared for the first time in 2010.

In this latest report, we have extended our steel scrap usage reporting regarding the EU-28, China, the USA, Japan, the Republic of Korea, Russia and Turkey, which are the world’s main scrap users. At the same time, we have provided more information about BOF and EAF crude steel developments in these countries. In addition, we have updated our calculation models covering the entire use of steel scrap as a raw material for steelmaking and for global scrap use in iron and steel foundries.

According to our calculations, global scrap use in steelmaking has been between 530m and 585m tonnes per annum in recent years, while its annual use in iron and steel foundries has amounted to between 56m and 76m tonnes.



It is also noticeable that our seven flow charts covering steel scrap exports from the EU-28, the USA, Japan, Russia, Canada, Australia and South Africa have received a particularly warm welcome. As ever, the scale of world trade in steel scrap underlines the need for a free raw materials market.

The sixth edition of the report has been extended by some four pages to incorporate a total of 53 graphs and tables - eight more than in its predecessor.

I would like to extend special thanks to Rolf Willeke, the BIR Ferrous Division's Statistics Advisor, who compiled, prepared and evaluated all the figures and also developed the graphs and tables in our report. Furthermore, I would like to thank very much all the supporters of our publication.

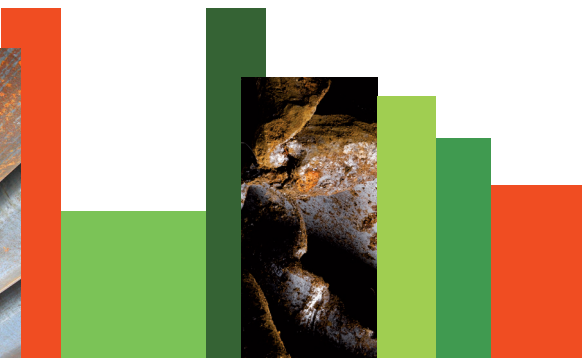
For an even more accurate appraisal of the market, we want to continue to improve the ferrous scrap statistics at our disposal, including our quarterly update of the world statistics.

We hope that our BIR ferrous report "World Steel Recycling in Figures 2010-2014" will be useful to you and to your day-to-day business operations.

Brussels, May 2015

William Schmiedel

President of the BIR Ferrous Division



EXECUTIVE SUMMARY

Final figures for 2014 show a small increase in world crude steel output and in global steel scrap use as a raw material for steelmaking, but there was a drop in external steel scrap trade of 1.9%.

World crude steel production reached 1.665bn tonnes in 2014, up 1% when compared to 2013. According to worldsteel, the Middle East - the smallest region in terms of crude steel production - enjoyed the most robust growth; production grew modestly last year in the EU-28, North America and Asia but fell in the CIS and South America. It is also interesting to note the global increase in basic oxygen furnace production (+1.8% to 1.228bn tonnes) and the small reduction in electric arc furnace production (-0.23% to around 426m tonnes).

Looking at the main scrap-using countries, worldsteel confirms that China's crude steel production reached 822.7m tonnes in 2014 (+0.1% over the previous year) such that the country's share of world output decreased from 49.8% in 2013 to 49.4% the following year. Also last year, increases in crude steel production were registered in the EU-28 (+1.8% to 169.3m tonnes), Japan (+0.1% to 110.7m tonnes), the USA (+1.5% to 88.2m tonnes), the Republic of Korea (+8.3% to 71.5m tonnes) and Russia (+3.6% to 71.5m tonnes), whereas a reduction was recorded by Turkey (-1.8% to 34m tonnes).

Global steel scrap use registered a 0.9% increase to around 585m tonnes in 2014 although developments differed from country to country

According to our figures, last year produced steel scrap consumption increases in the EU-28 (+1%), China (+3%), the USA (+5.1%) and Japan (+0.6%) but a drop in Turkey (-7.3%) as well as smaller declines in the Republic of Korea (-0.3%) and Russia (-0.5%). Also worthy of note for 2014 was the increase in crude steel production among regions/countries with a high percentage of electric arc furnace production, such as the Middle East and some Asian countries like India, Indonesia, Malaysia and Vietnam.

In collaboration with experts from the German Steel Federation (WV Stahl), we have calculated an increase of steel scrap usage in world steel production to around 585m tonnes last year (+0.9% compared to 580m tonnes in 2013). Interestingly in 2014, the steel scrap proportion in global crude steel production was 35.1% whereas our statistics confirmed 53.9% for the EU-28, 10.7% for China, 70.3% for the USA, 33.3% for Japan, 45.6% for the Republic of Korea, 27% for Russia and 82.9% for Turkey.

According to our calculations and in line with the increase in world steel production, own arisings (circulating scrap) and primary iron production recorded gains of, respectively, 0.98% and 0.97%. Our calculations also reveal that scrap purchases by steelworks worldwide increased by 0.8% last year to 378m tonnes, of which 35.2% was attributable to the supply of new steel scrap (process scrap) and 64.8% to old steel scrap (capital scrap), given the reduced availability of capital scrap in some parts of the world last year.

As the world's biggest steel producer, China attracts particular attention. As always, the basic oxygen furnace route dominated the country's crude steel production in 2014, accounting for 93.9% of the total. China's steel scrap consumption climbed around 3% to 88.3m tonnes whereas the country's crude steel production grew at an even smaller rate of 0.1%. It has been suggested that China's consumption of steel scrap is set to exceed 100m tonnes in the coming years.

It is interesting to note that the USA followed up a reduction in 2013 with a crude steel production increase of 1.5% to 88.2m tonnes last year whereas the increase in steel scrap usage was even higher (+5.1% to 62m tonnes). One of the reasons for this was last year's 4.9% upturn in electric arc furnace production to 55.2m tonnes, equivalent to a share of 62.6% of the country's crude steel production. Furthermore, the USA reduced its primary iron production in 2014 (-3.1% to 29.4m tonnes).

The EU-28 recorded an increase in steel scrap consumption last year (+1% to 91.3m tonnes) while its crude steel production climbed slightly more sharply (+1.8%). The biggest steel scrap users were Italy (+0.5% to 19.7m tonnes), Germany (-1.7% to 19.1m tonnes), Spain (+1% to 11.4m tonnes) and France (+2% to 7.7m tonnes). The electric arc furnace share of EU crude steel production was 39% last year as compared to 39.6% in 2013.

Our 2014 figures reveal that the small increase in Japan's steel scrap usage (+0.6% to 36.9m tonnes) was slightly greater than the growth in the country's crude steel production (+0.1%). The electric arc furnace share of crude steel production was 23.2% as against 22.5% in 2013.

Conversely, the Republic of Korea recorded a small drop in steel scrap usage last year (-0.3% to 32.6m tonnes) whereas its crude steel production was 8.3% higher. The electric arc furnace share of crude steel production fell to 33.8%.

It is worth noting last year's small 0.5% decline in Russia's steel scrap usage whereas domestic crude steel production was higher by 3.6%, a development influenced by a drop in electric arc furnace production such that its share of the country's crude steel production was reduced from 30.2% in 2013 to 29% last year. Turkey recorded the steepest drop in steel scrap consumption last year (-7.3% to 28.2m tonnes) whereas the country's crude steel production dipped only 1.8%. The figures show that the electric arc furnace share of domestic crude steel production slipped from 71.3% to 69.8% last year.

Higher ferrous scrap usage in the world's iron and steel foundries

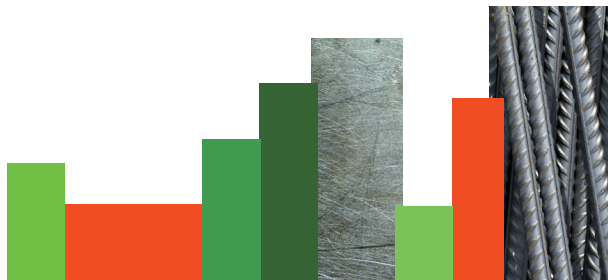
Our calculation model for global ferrous scrap use in iron and steel foundries has been produced in collaboration with experts from the German Foundry Association (BDG), which is also responsible for the Secretariat General of the European Foundry Association (CAEF). Calculations cover the period from 2007 to 2013; it was not possible to incorporate figures for 2014 because world casting production is determined only by magazine "Modern Casting" with a time lag of one year. It should also be pointed out that our calculation model takes into account the high pig iron usage for casting production in the iron and steel foundries of China and India.

For 2013, we have calculated a global ferrous scrap usage of 71.8m tonnes (+1.8% over 2012) for a world iron and steel casting production of 84.9m tonnes (+1.3% over 2012). Furthermore, we have calculated annual ferrous scrap purchases by the world's iron and steel foundries at around 44.3m tonnes (+1.6% over 2012).

Steel scrap imports mainly in decline

Figures for 2014 show a further steep drop in China's steel scrap imports (-42.6% to 2.564m tonnes), thus underlining the country's policy of buying more from domestic sources and of reducing imports. It is also interesting to note that, after a drop of 12% in 2013, Turkey - the world's foremost steel scrap importer - reduced its overseas purchases last year by a further 3.2% to 19.068m tonnes.

In 2014, cuts in steel scrap imports were also made by the Republic of Korea (-13.6% to 8.002m tonnes), Taiwan (-4.1% to 4.272m tonnes), the EU-28 (-2% to 3.137m tonnes), Indonesia (-10.9% to 2.137m tonnes) and Canada (-12.9% to 1.52m tonnes). In positive territory were the steel scrap imports of India (+1.1% to 5.699m tonnes), the USA (+8.6% to 4.215m tonnes) and Thailand (+43.9% to 1.383m tonnes).



EU-28: still the leading steel scrap exporter

Global external steel scrap trade - including internal EU-28 trade - amounted to 97.1m tonnes last year (-1.9% compared to 2013). The EU-28 was the leading steel scrap exporter in 2014 following a slender increase of 0.3% to 16.859m tonnes, duly bettering US overseas shipments which declined by around 17.1% to 15.34m tonnes over the same period.

The main buyers of EU-28 steel scrap were Turkey (-5.6% to 9.936m tonnes), Egypt (+12.4% to 1.786m tonnes) and India (+12.5% to 1.523m tonnes). The EU-28's internal steel scrap exports totalled 30.153m tonnes last year (+1.7% versus 2013) - a figure that confirms the active role of inter-EU trade in the raw materials supply chain which feeds into European crude steel production.

The drop-off in US exports was influenced mainly by a reduction in steel scrap shipments to China (-56.8% to 0.79m tonnes), Turkey (-30.9% to 3.616m tonnes), the Republic of Korea (-32.8% to 1.705m tonnes) and Taiwan (-11.3% to 2.682m tonnes).

A downtrend was also clearly visible in Japan's overseas shipments of steel scrap in 2014 (-9.6% to 7.351m tonnes), with a sharp decline in the country's deliveries to the Republic of Korea (-19% to 3.809m tonnes) and to China (-19.1% to 2.106m tonnes). Also lower last year were steel scrap exports from South Africa (-14.2% to 1.489m tonnes) whereas overseas shipments from Canada were virtually unchanged (-0.2% to 4.51m tonnes), with the main buyer being the USA (+4.5% to 3.373m tonnes). Conversely, export increases were recorded by Russia, with a strong gain of 53.2% to 5.689m tonnes, and Australia (+7.4% to 2.362m tonnes).

The world's leading steel scrap exporters are major net steel scrap exporters: last year's export surplus was, for example, 13.7m tonnes for the EU-28 and 11.1m tonnes for the USA.

Our figures show that ferrous scrap is a raw material used worldwide in steelworks and in iron and steel foundries. It is an ecologically beneficial raw material and an international commodity subject to world market prices, thus underlining the need for a free world raw materials market.

Rolf Willeke

Statistics Advisor of the BIR Ferrous Division

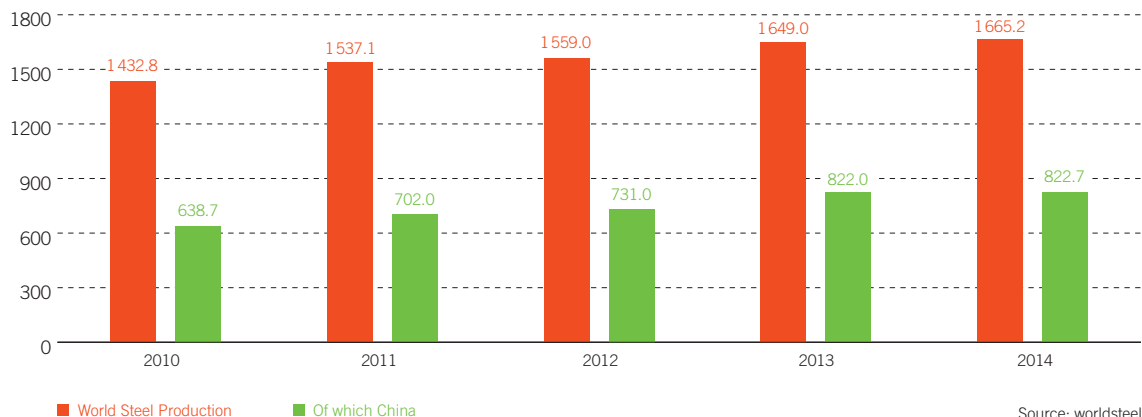
GRAPHS AND TABLES

WORLD CRUDE STEEL PRODUCTION – SUMMARY (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
European Union (28)	172.9	177.8	168.6	166.3	169.3	+1.8
of which Germany	43.8	44.3	42.7	42.65	42.9	+0.7
Other Europe	33.7	39.1	39.9	38.6	38.4	-0.7
of which Turkey	29.1	34.1	35.9	34.7	34.0	-1.8
C.I.S.	108.2	112.7	110.7	108.4	106.1	-2.1
of which Russia	66.9	68.9	70.4	69.0	71.5	+3.6
North America	111.7	118.7	121.6	118.98	121.2	+1.9
of which United States	80.5	86.4	88.7	86.9	88.2	+1.5
South America	43.9	48.2	46.4	45.8	45.2	-1.4
of which Brazil	32.9	35.2	34.5	34.2	33.9	-0.7
Africa	16.6	15.7	15.3	15.96	15.0	-5.9
of which South Africa	7.6	7.6	6.9	7.2	6.6	-8.5
Middle East	20.0	23.0	24.7	26.5	28.5	+7.6
of which Iran	12.0	13.2	14.5	15.4	15.3	+5.9
Asia	917.8	994.7	1026.0	1122.8	1136.0	+1.2
of which China	638.7	701.97	731.0	822.0	822.7	+0.1
Oceania	8.2	7.3	5.8	5.6	5.5	-1.8
of which Australia	7.3	6.4	4.9	4.7	4.6	-1.7
World	1432.8	1537.1	1559.0	1649.0	1665.2	+1.0

Source: worldsteel

WORLD CRUDE STEEL PRODUCTION (MILLION TONNES)



THE LARGEST 12 STEEL PRODUCING COUNTRIES (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
1 China	638.7	702.0	731.0	822.0	822.7	+0.1
2 Japan	109.6	107.6	107.2	110.6	110.7	+0.1
3 United States	80.5	86.4	88.7	86.9	88.2	+1.5
4 India	69.0	73.5	77.3	81.3	83.2	+2.3
5 Korea Rep.	58.9	68.5	69.1	66.1	71.5	+8.3
6 Russia	66.9	68.9	70.4	69.0	71.4	+3.6
7 Germany	43.8	44.3	42.7	42.6	42.9	+0.7
8 Turkey	29.1	34.1	35.9	34.7	34.0	-1.8
9 Brazil	32.9	35.2	34.5	34.2	33.9	-0.7
10 Ukraine	33.4	35.3	33.0	32.8	27.2	-17.1
11 Italy	25.8	28.7	27.3	24.1	23.7	-1.4
12 Taiwan	19.8	20.2	20.7	22.3	23.1	+3.8

Source: worldsteel

WORLD CRUDE STEEL PRODUCTION BY BOF AND EAF PROCESS

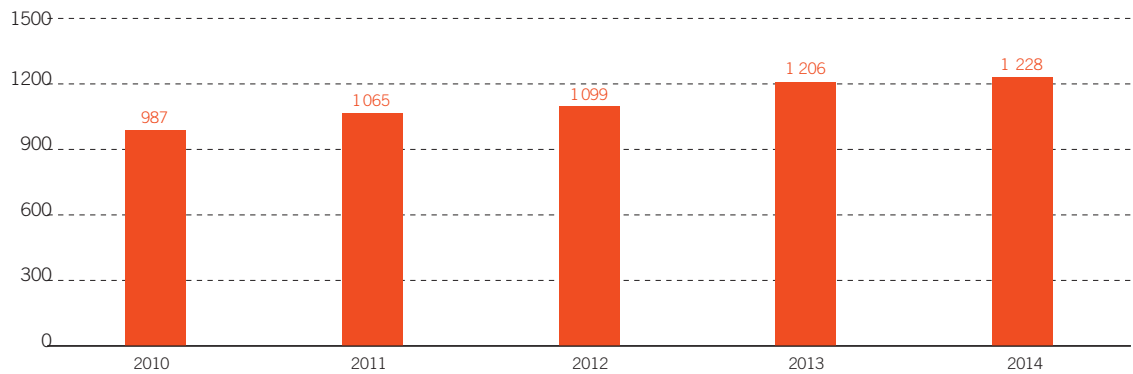
YEAR 2014

	Million Tonnes		Percentage of Total Production	
	BOF	EAF	BOF	EAF
European Union (28)	103.2	66.1	61.0	39.0
of which Germany	29.9	13.1	69.6	30.4
Other Europe	11.7	26.7	30.4	69.6
of which Turkey	10.3	23.8	30.2	69.8
C.I.S.	71.0	27.5	67.0	25.9
of which Russia	47.6	21.9	66.6	30.6
North America	46.4	74.8	38.3	61.7
of which United States	33.0	55.2	37.4	62.6
South America	29.4	15.3	65.1	33.8
of which Brazil	25.6	7.8	75.5	23.0
Africa	4.2	10.3	29.2	70.8
of which South Africa	3.7	2.8	57.0	43.0
Middle East	2.7	25.6	9.6	90.4
of which Iran	2.7	13.6	16.7	83.3
Asia	954.7	178.3	84.2	15.7
of which China	772.2	49.9	93.9	6.1
Oceania	4.2	1.3	75.9	24.1
of which Australia	3.6	1.0	77.6	22.4
World	1 227.6	425.8	73.9	25.6

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

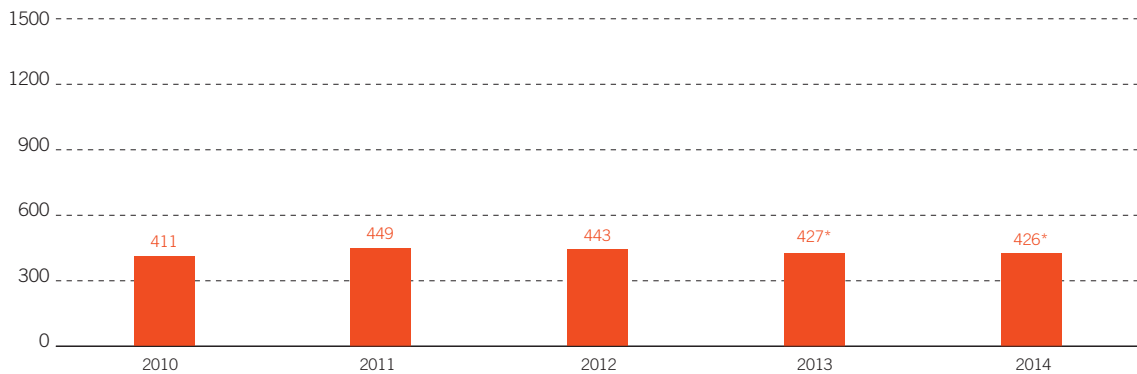
Source: worldsteel

WORLD BOF – BASIC OXYGEN FURNACE PRODUCTION (MILLION TONNES)



Source: worldsteel

WORLD EAF – ELECTRIC ARC FURNACE PRODUCTION (MILLION TONNES)



*Provisional figures

Source: worldsteel

TOTAL METALLICS FOR STEELMAKING IN THE WORLD (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	1 433	1 537	1 559	1 649	1665	+0.99
of which Basic Oxygen Furnace	987	1 065	1 099	1 206	1228	+1.79
Electric Arc Furnace	411	449	443	427	426	-0.18
(Share Electric Arc Furnace of Crude Steel) in %	28.7	29.2	28.4	25.9	25.8	
Primary Iron	1 034	1 105	1 124	1 207	*1219	+0.97
(Ratio Primary Iron / Crude Steel) in %	72.2	71.9	72.1	73.2	73.2	
Steel Scrap	530	570	570	580	*585	+0.86
(Ratio Steel Scrap / Crude Steel) in %	37.0	37.1	36.6	36.2	35.1	
DRI	70	73	74	76	*78	+4.00
(Ratio DRI / Crude Steel) in %	4.9	4.8	4.7	4.6	4.7	
Total Metallics	1 634	1 748	1 767	1 862	1882	+1.06
(Ratio Total Metallics / Crude Steel) in %	114.0	113.7	113.3	113.0	113.0	

*Provisional figures

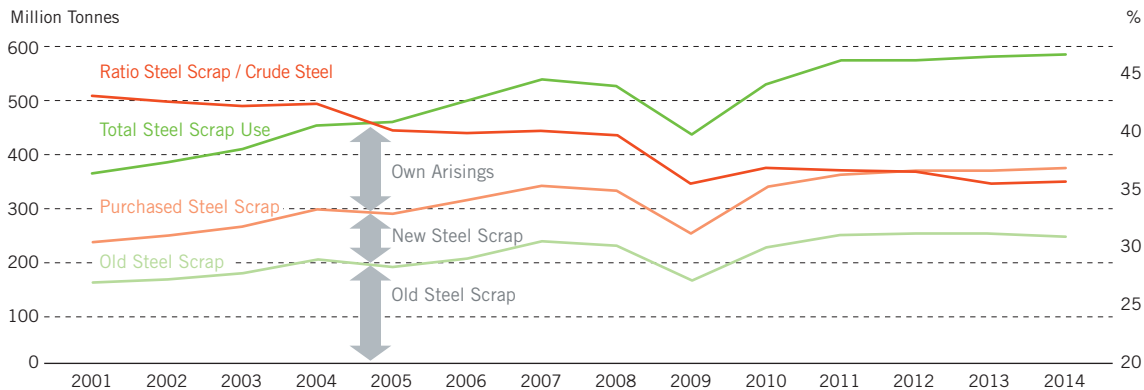
Source: worldsteel, Midrex and *own calculations by WV Stahl/BIR

STEEL SCRAP FOR STEELMAKING IN THE WORLD (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	1 433	1 537	1 559	1 649	1665	+0.99
Total Steel Scrap Use	530	570	570	580	*585	+0.86
(Ratio Steel Scrap / Crude Steel) in %	37.0	37.1	36.6	36.2	35.1	
of which:						
Own Arisings (Circulating Scrap)	190	200	200	205	207	+0.98
(Share Own Arisings of Scrap Use) in %	35.8	35.1	35.1	35.3	35.4	
Purchases by Steelworks	340	370	370	375	378	+0.80
(Share Purchases of Scrap Use) in %	64.2	64.9	64.9	64.7	64.6	
of which:						
New Steel Scrap (Process Scrap)	110	120	120	130	133	+2.31
(Share New Steel Scrap of Total Purchases) in %	32.4	32.4	32.4	34.7	35.2	
Old Steel Scrap (Capital Scrap)	230	250	250	245	245	±0.00
(Share Old Steel Scrap of Total Purchases) in %	67.6	67.6	67.6	65.3	64.8	

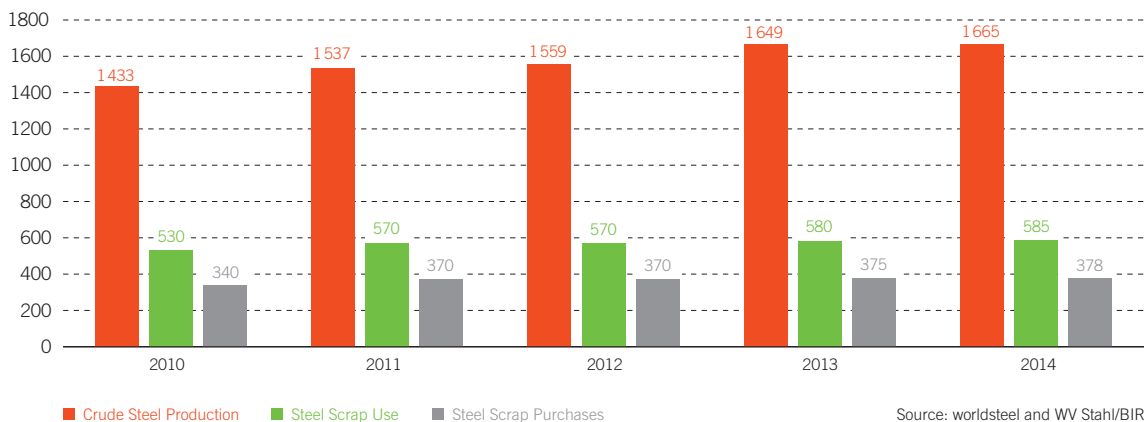
Source: worldsteel and *own calculations by WV Stahl/BIR

STEEL SCRAP FOR STEELMAKING IN THE WORLD



Source: WV Stahl/BIR

STEEL SCRAP USE AND PURCHASES FOR STEELMAKING IN THE WORLD (MILLION TONNES)



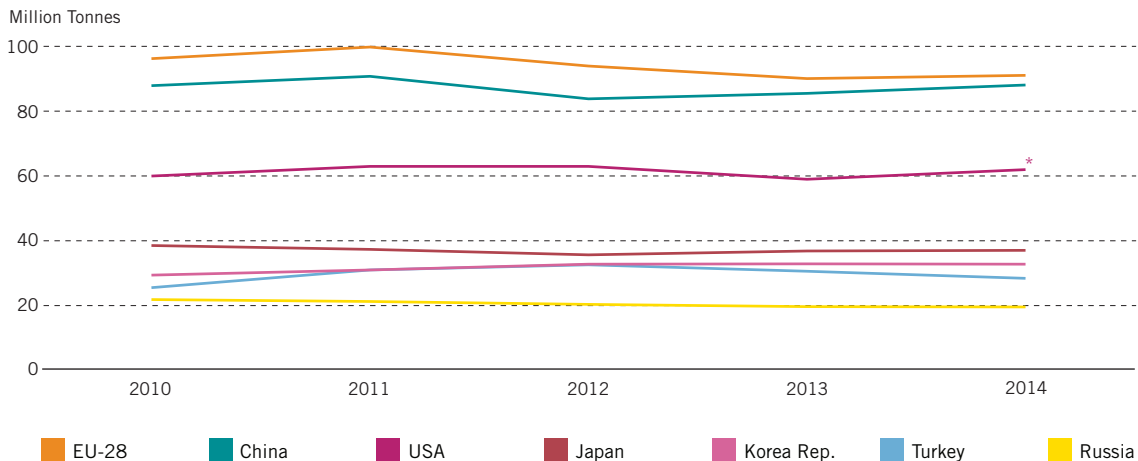
Source: worldsteel and WV Stahl/BIR

MAIN STEEL SCRAP USE FOR STEELMAKING IN THE WORLD (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
EU-28	96.5	100.1	94.2	90.3	91.3	+1.0
China	88.1	91.0	84.0	85.7	88.3	+3.0
USA	60.0	63.0	63.0	59.0	*62.0	+5.1
Japan	38.4	37.2	35.5	36.7	36.9	+0.6
Korea Rep.	29.2	30.8	32.6	32.7	32.6	-0.3
Turkey	25.3	30.8	32.4	30.4	28.2	-7.3
Russia	21.5	21.0	20.1	19.4	19.3	-0.5

Source: EUROFER, CAMU, ISRI /USGS, Ministry of Economy in Japan, KOSA, TCUD, Impextrade LLC, Russia and *own calculations

MAIN STEEL SCRAP USE ANNUAL TREND (MILLION TONNES)



Source: EUROFER, CAMU, ISRI /USGS, Ministry of Economy in Japan, KOSA, TCUD, Impextrade LLC, Russia and *own calculations

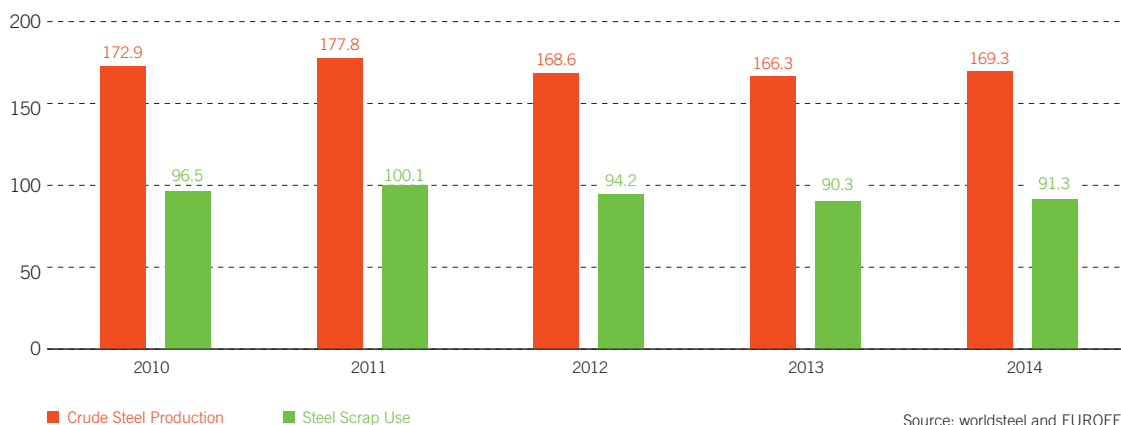
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE EU-28 (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	172.9	177.8	168.6	166.3	169.3	+1.8
of which:						
Share BOF of Crude Steel in %	57.7	57.4	58.3	60.2	61.0	
Share EAF of Crude Steel in %	41.9	42.6	41.7	39.6	39.0	
Total Steel Scrap Use	96.5	100.1	94.2	90.3	91.3	+1.0
Ratio Steel Scrap / Crude Steel in %	55.8	56.3	55.9	54.3	53.9	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and EUROFER

STEEL SCRAP FOR STEELMAKING IN THE EU-28 (MILLION TONNES)



Source: worldsteel and EUROFER

STEEL SCRAP FOR STEELMAKING IN EU-28 COUNTRIES (MILLION TONNES)

	Steel Scrap Consumption			Crude Steel Production		
	2014	2013	%Change	2014	2013	%Change
Austria	2.728	2.745	-0.6	7.859	7.953	-1.2
Belgium	2.881	2.685	+7.3	7.331	7.093	+3.4
Bulgaria	0.668	0.570	+17.1	0.612	0.523	+17.0
Croatia	0	0	0	0.167	0.135	+23.9
Czech Republic	1.934	1.897	+1.9	5.360	5.171	+3.7
Finland	1.881	1.689	+11.4	3.807	3.517	+8.3
France	7.730	7.575	+2.0	16.143	15.685	+2.9
Germany	19.066	19.397	-1.7	42.943	42.645	+0.7
Greece	1.202	1.212	-0.8	1.022	1.030	-0.8
Hungary	0.390	0.319	+22.3	1.152	0.883	+30.5
Italy	19.690	19.602	+0.5	23.735	24.080	-1.4
Latvia	0	0.245	-100.0	0	0.198	-100.0
Luxembourg	2.456	2.340	+5.0	2.193	2.090	+4.9
Netherlands	1.751	1.693	+3.4	6.964	6.713	+3.7
Poland	5.104	5.037	+1.3	8.541	7.950	+7.4
Portugal	2.309	2.237	+3.2	2.070	2.050	+1.0
Romania	1.723	1.543	+11.6	3.158	2.985	+5.8
Slovakia	1.509	1.445	+4.5	4.705	4.511	+4.3
Slovenia	0.707	0.722	-2.0	0.615	0.618	-0.5
Spain	11.385	11.276	+1.0	14.353	14.252	+/-0.0
Sweden	2.091	2.036	+2.7	4.549	4.404	+3.3
EU-27	91.259	90.347	+1.0	169.297	166.343	+1.8

Source: Steel Scrap Consumption: EUROFER, Steel Production: worldsteel

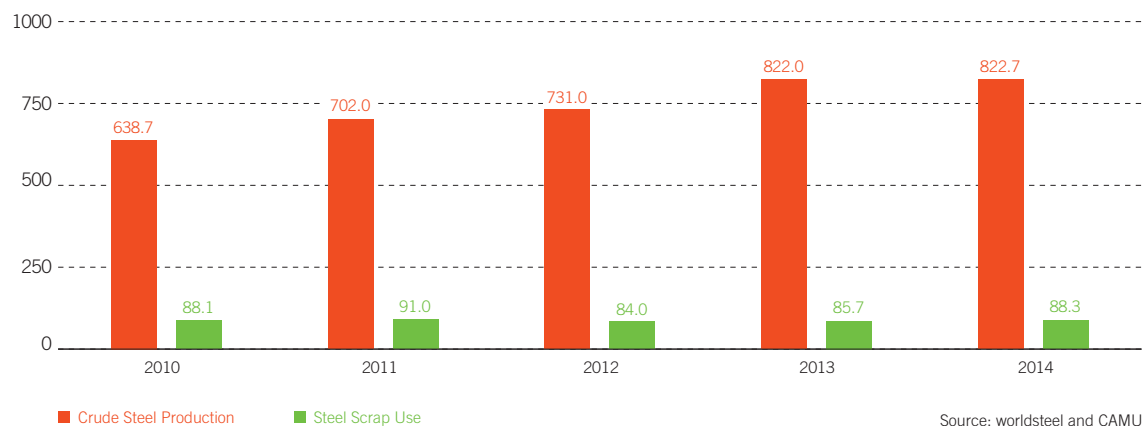
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN CHINA (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	638.7	702.0	731.0	822.0	822.7	+0.1
of which:						
Share BOF of Crude Steel in %	90.2	89.9	89.8	90.5	93.9	
Share EAF of Crude Steel in %	9.8	10.1	10.1	9.5	6.1	
Total Steel Scrap Use	88.1	91.0	84.0	85.7	88.3	+3.0
Ratio Steel Scrap / Crude Steel in %	13.8	13.0	11.5	10.4	10.7	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and CAMU

STEEL SCRAP FOR STEELMAKING IN CHINA (MILLION TONNES)



Source: worldsteel and CAMU

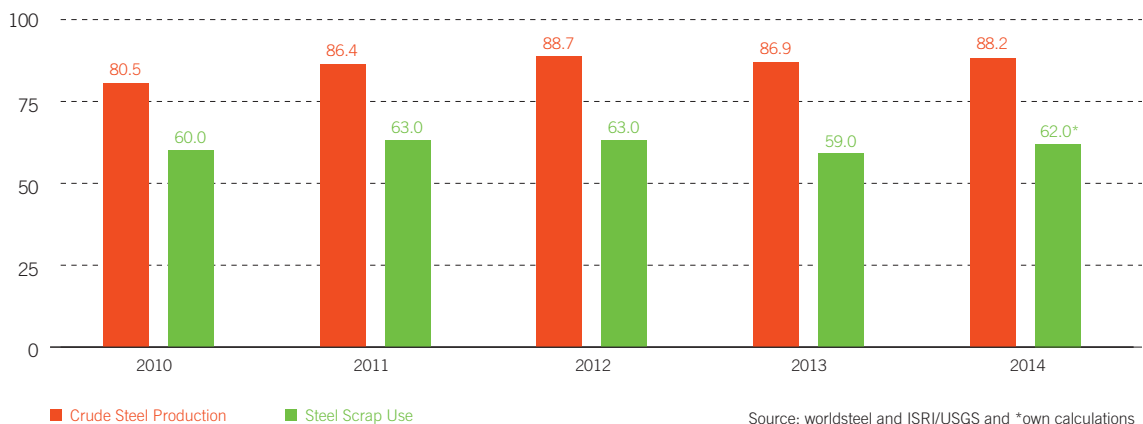
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE USA (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	80.5	86.4	88.7	86.9	88.2	+1.5
of which:						
Share BOF of Crude Steel in %	38.7	39.7	40.9	39.4	37.4	
Share EAF of Crude Steel in %	61.3	60.3	59.1	60.6	62.6	
Total Steel Scrap Use	60.0	63.0	63.0	59.0	*62.0	+5.1
Ratio Steel Scrap / Crude Steel in %	74.5	72.9	71.0	67.9	70.3	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and ISRI/USGS and *own calculations

STEEL SCRAP FOR STEELMAKING IN THE USA (MILLION TONNES)



Source: worldsteel and ISRI/USGS and *own calculations

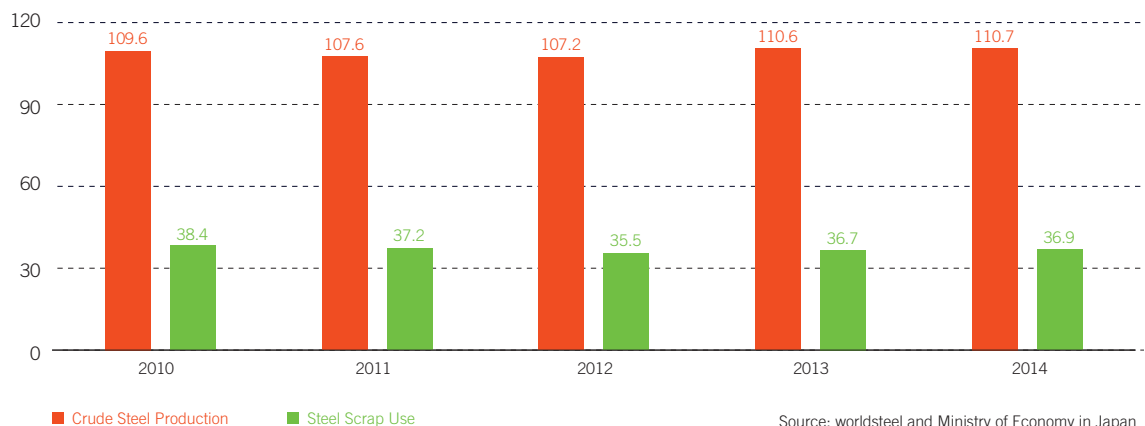
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN JAPAN (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	109.6	107.6	107.2	110.6	110.7	+0.1
of which:						
Share BOF of Crude Steel in %	78.2	76.9	76.8	77.5	76.8	
Share EAF of Crude Steel in %	21.8	23.1	23.2	22.5	23.2	
Total Steel Scrap Use	38.4	37.2	35.5	36.7	36.9	+0.6
Ratio Steel Scrap / Crude Steel in %	35.0	34.6	33.1	33.2	33.3	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and Ministry of Economy in Japan

STEEL SCRAP FOR STEELMAKING IN JAPAN (MILLION TONNES)



Source: worldsteel and Ministry of Economy in Japan

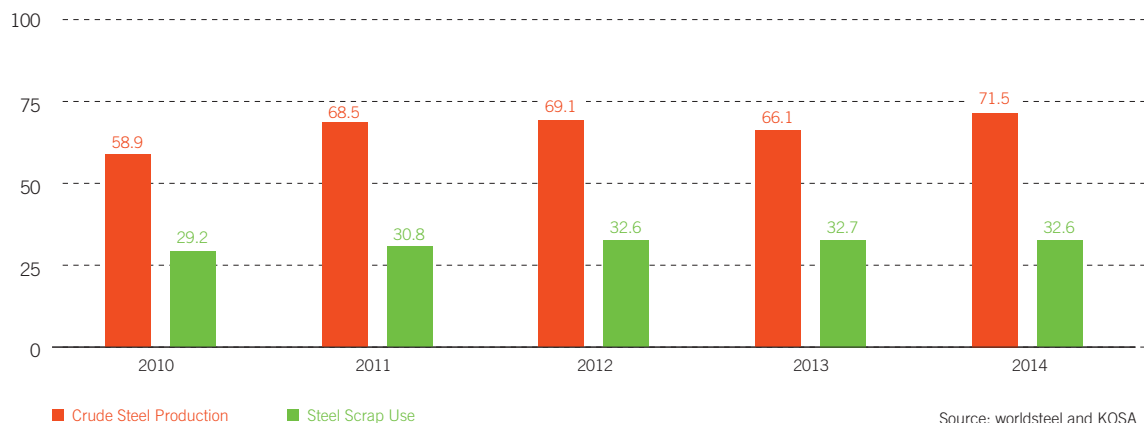
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE REPUBLIC OF KOREA (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	58.9	68.5	69.1	66.1	71.5	+8.3
of which:						
Share BOF of Crude Steel in %	57.9	61.5	62.4	61.0	66.2	
Share EAF of Crude Steel in %	42.1	38.5	37.6	39.0	33.8	
Total Steel Scrap Use	29.2	30.8	32.6	32.7	32.6	-0.3
Ratio Steel Scrap / Crude Steel in %	49.6	45.0	47.2	49.5	45.6	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and KOSA

STEEL SCRAP FOR STEELMAKING IN THE REPUBLIC OF KOREA (MILLION TONNES)



Source: worldsteel and KOSA

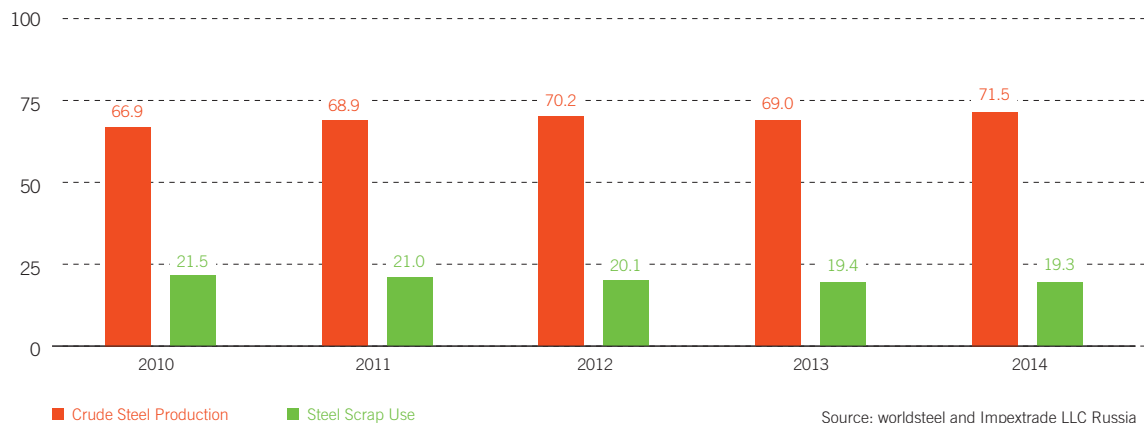
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN RUSSIA (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	66.9	68.9	70.2	69.0	71.5	+3.6
of which:						
Share BOF of Crude Steel in %	63.4	63.4	63.4	66.3	68.1	
Share EAF of Crude Steel in %	26.9	26.9	27.0	30.2	29.0	
Total Steel Scrap Use	21.5	21.0	20.1	19.4	19.3	-0.5
Ratio Steel Scrap / Crude Steel in %	32.1	30.5	28.6	28.1	27.0	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and Impextrade LLC Russia

STEEL SCRAP FOR STEELMAKING IN RUSSIA (MILLION TONNES)



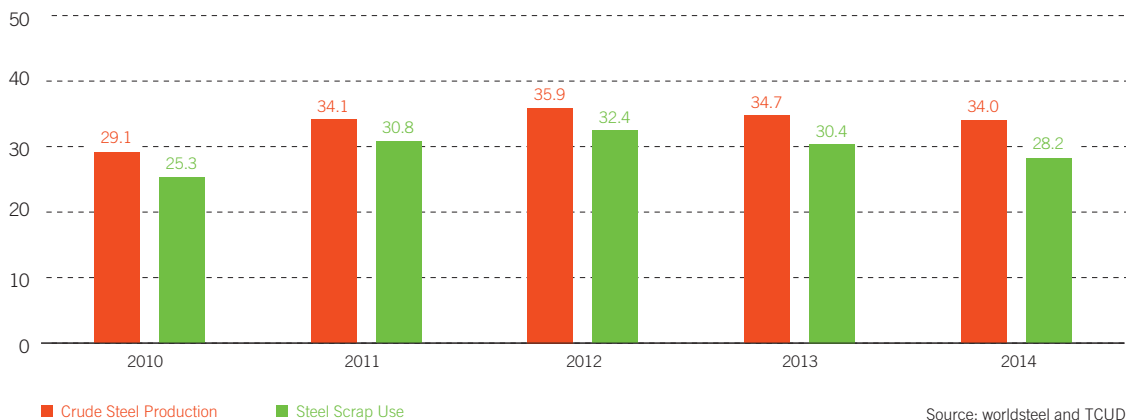
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN **TURKEY** (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Crude Steel Production	29.1	34.1	35.9	34.7	34.0	-1.8
of which:						
Share BOF of Crude Steel in %	28.3	25.9	26.0	28.7	30.2	
Share EAF of Crude Steel in %	71.7	74.1	74.0	71.3	69.8	
Total Steel Scrap Use	25.3	30.8	32.4	30.4	28.2	-7.3
Ratio Steel Scrap / Crude Steel in %	86.9	90.3	90.3	87.6	82.9	

BOF – Basic Oxygen Furnace
EAF – Electric Arc Furnace

Source: worldsteel and TCUD

STEEL SCRAP FOR STEELMAKING IN **TURKEY** (MILLION TONNES)



Source: worldsteel and TCUD

FERROUS SCRAP USE IN IRON AND STEEL FOUNDRIES IN THE WORLD (MILLION TONNES)

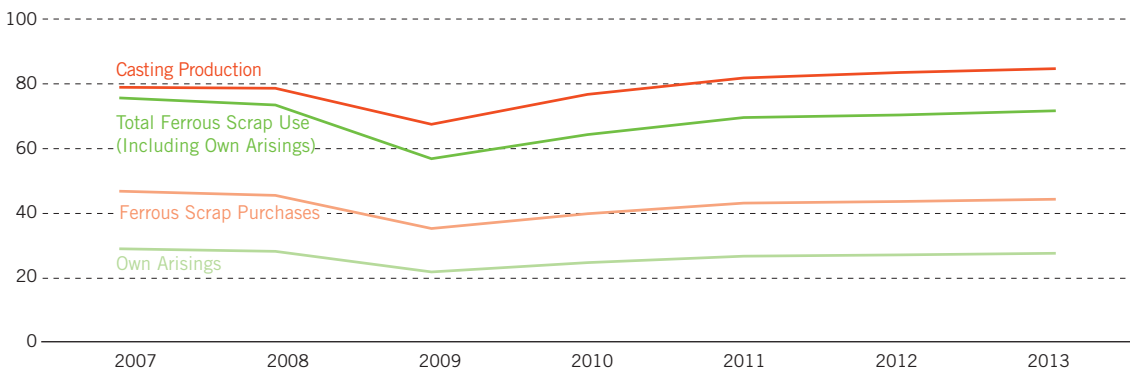
	2007	2008	2009	2010	2011	2012	2013	% 2013/ 2012
Iron Steel and Malleable Casting Production	79.1	78.8	67.6	76.9	82.0	83.7	84.9	+1.3
Total Ferrous Scrap Use	75.8	73.6	56.9	64.4	69.7	70.5	71.8	+1.8
(Ratio Scrap Use / Casting Production) in %	95.8	93.4	84.2	83.8	85.0	84.2	84.7	
of which:								
Own Arisings (Circulating Scrap) ¹	28.9	28.1	21.7	24.6	26.6	27.0	27.5	+1.9
(Share Own Arisings of Scrap Use) in %	38.1	38.1	38.1	38.2	38.2	38.2	38.3	
Ferrous Scrap Purchases	46.8	45.5	35.2	39.8	43.1	43.6	44.3	+1.6
(Share Purchases of Scrap Use) in %	61.8	61.8	61.8	61.8	61.9	61.8	61.7	

Source: Modern Casting and own calculations by BDG/BIR

1. Own Arisings (Circulating Scrap) is the term for lumpy metal remains evolving during the casting process. Elements belonging to this process such as sprues, runners, ingates and feeders are essential to produce a raw casting, but they do not belong to the actual casting and are therefore eliminated during the finishing process of it. Rejects and scrap developing in the foundry are added to the Circulating Scrap as well.

FERROUS SCRAP USE IN IRON AND STEEL FOUNDRIES IN THE WORLD

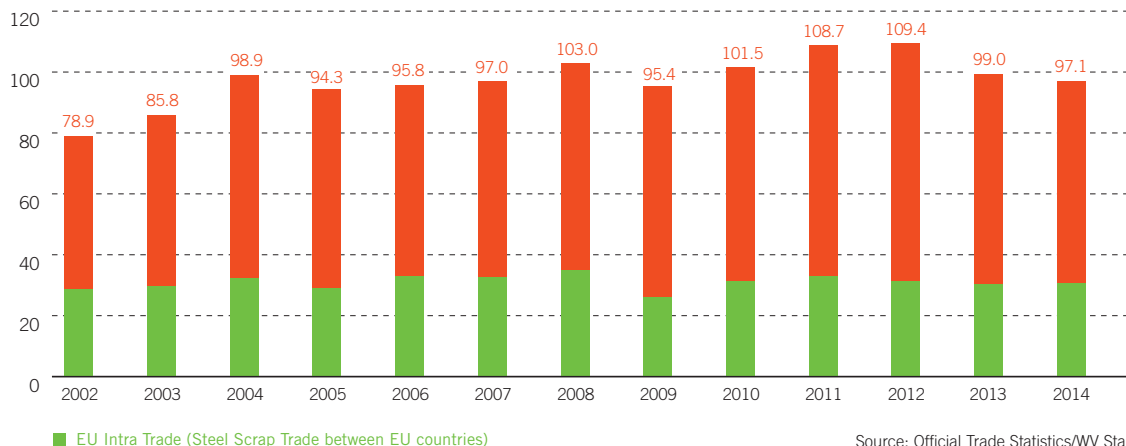
Million Tonnes



Source: Modern Casting and own calculations by BDG/BIR

VOLUME OF GLOBAL EXTERNAL STEEL SCRAP TRADE (MILLION TONNES)

Steel Scrap External Trade Including EU Intra Trade



Source: Official Trade Statistics/WV Stahl

MAIN STEEL SCRAP IMPORTERS (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
Turkey	19.192	21.460	22.415	19.725	19.068	-3.2
Korea Rep.	8.091	8.628	10.126	9.260	8.002	-13.6
India	4.643	6.175	8.180	5.636	5.699	+1.1
Taiwan	5.364	5.328	4.955	4.453	4.272	-4.1
USA	3.775	4.003	3.711	3.882	4.215	+8.6
EU-28	3.646	3.714	3.203	3.191	3.137	-2.0
China	5.848	6.767	4.974	4.465	2.564	-42.6
Indonesia	1.642	2.157	1.944	2.399	2.137	-10.9
Canada	2.226	1.911	2.343	1.746	1.520	-12.9
Thailand	1.282	1.877	1.701	0.961	1.383	+43.9

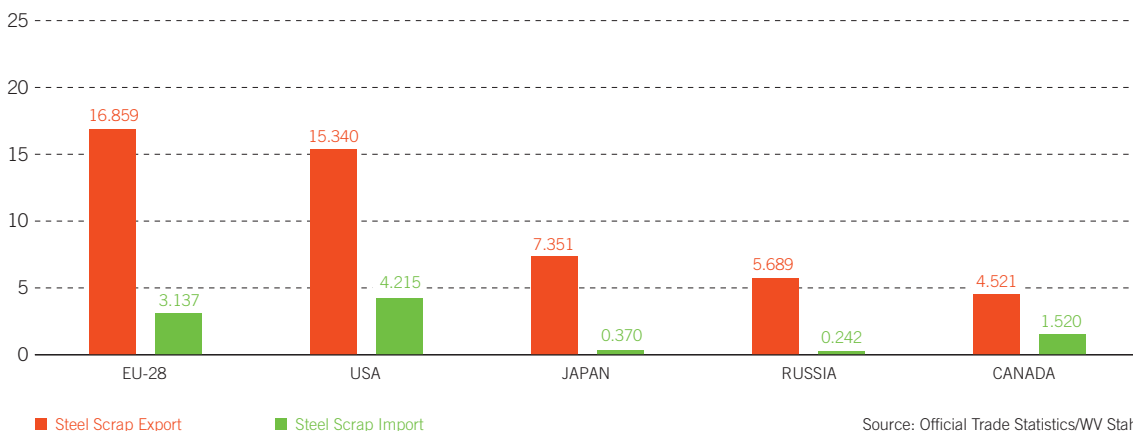
Source: Official Trade Statistics/WV Stahl

MAIN STEEL SCRAP EXPORTERS (MILLION TONNES)

	2010	2011	2012	2013	2014	% 2014/ 2013
EU-28	19.033	18.813	19.579	16.806	16.859	+0.3
USA	20.556	24.373	21.397	18.495	15.340	-17.1
Japan	6.472	5.442	8.586	8.129	7.351	-9.6
Russia	2.390	4.042	4.349	3.714	5.689	+53.2
Canada	5.154	4.832	4.248	4.510	4.521	-0.2
Australia	1.636	1.745	2.245	2.200	2.362	+7.4
South Africa	1.224	1.436	1.632	1.732	1.486	-14.2

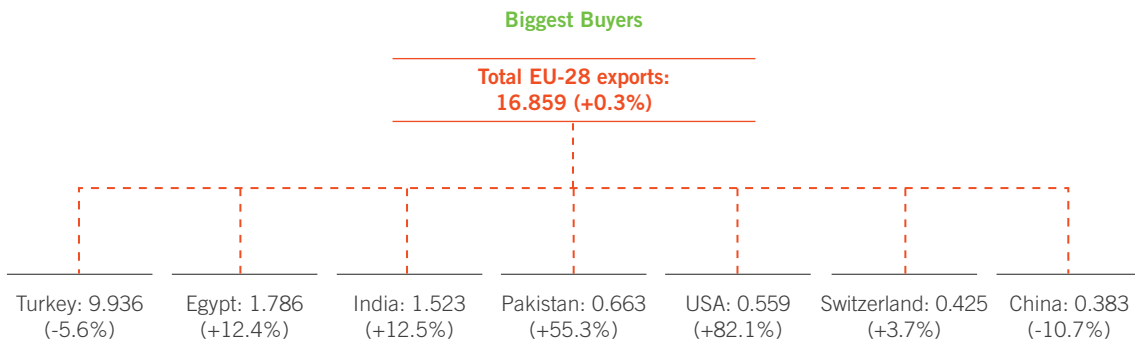
Source: Official Trade Statistics/WV Stahl

MAJOR NET STEEL SCRAP EXPORTERS 2014 (MILLION TONNES)



Source: Official Trade Statistics/WV Stahl

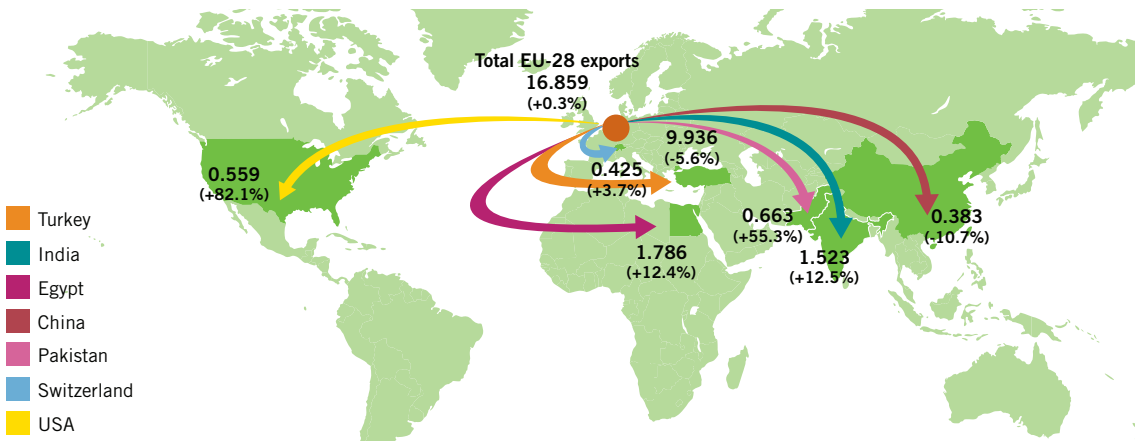
EU-28 STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013

Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF EU-28 STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013

Source: Official Trade Statistics/WV Stahl

EU-28 EXTERNAL STEEL SCRAP EXPORTS BY COUNTRY (MILLION TONNES)

Steel Scrap Exports by Main EU-28 Exporters to Third Countries

Exporters	2014	2013	%Change	Biggest Buyers	2014	2013	%Change
United Kingdom	4.973	4.740	+4.9	Turkey	2.265	2.505	-9.6
				India	0.806	0.670	+20.3
				Egypt	0.739	0.503	+46.9
				Pakistan	0.344	0.180	+91.1
				USA	0.177	0.139	+27.3
Belgium	2.583	2.107	+22.6	Turkey	1.583	1.143	+38.5
				Egypt	0.849	0.741	+14.6
				Netherlands	1.837	2.090	-12.1
Netherlands	1.837	2.090	-12.1	Turkey	1.154	1.371	-15.8
				USA	0.161	0.029	+455.2
				India	0.136	0.129	+5.4
				Egypt	0.130	0.246	-47.8
Germany	1.429	1.218	+17.3	China	0.124	0.174	-28.7
				Turkey	0.689	0.547	+26.0
				Switzerland	0.305	0.285	+7.0
Romania	1.114	1.714	-35.0	India	0.211	0.162	+30.2
Sweden	0.771	0.678	+13.7	Turkey	1.061	1.670	-36.5
				USA	0.272	0.312	-12.8
				USA	0.204	0.114	+78.9
France	0.574	0.685	-16.2	Norway	0.097	0.094	+3.2
				Turkey	0.300	0.375	-20.0
				Morocco	0.098	0.129	-24.0
Bulgaria	0.369	0.576	-35.9	Switzerland	0.073	0.076	-4.0
				Turkey	0.307	0.565	-45.7
EU-28 Extra Trade	16.859	16.806	+0.3				

Source: Official Trade Statistics/WV Stahl

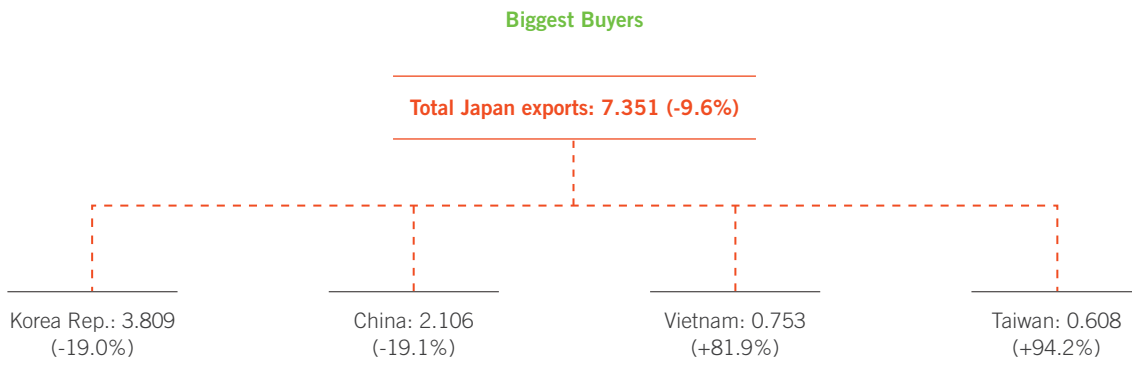
EU-28 INTERNAL STEEL SCRAP EXPORTS BY COUNTRY (MILLION TONNES)

Main Steel Scrap Exports between EU-28 Countries

Exporters	2014	2013	%Change	Biggest Buyers	2014	2013	%Change
Germany	7.747	8.019	-3.4	Netherlands	1.803	1.781	+1.2
				Italy	1.696	1.845	-8.1
				Luxembourg	1.212	1.187	+2.1
				Belgium	1.113	1.217	-8.5
				France	0.864	0.990	-12.7
France	5.671	5.490	+3.3	Spain	1.652	1.564	+5.6
				Belgium	1.499	1.343	+11.6
				Luxembourg	1.234	1.253	-1.5
				Italy	0.639	0.631	+1.3
Netherlands	2.572	2.733	-5.9	Belgium	0.865	0.913	-5.3
				Germany	0.796	0.856	-7.0
United Kingdom	2.001	2.207	-9.3	Spain	0.980	1.244	-21.2
				Portugal	0.526	0.490	+7.3
				France	0.258	0.258	+/-0.0
Czech Republic	1.974	1.851	+6.6	Germany	0.798	0.790	+1.0
				Austria	0.403	0.311	+29.6
				Italy	0.318	0.316	+0.6
Poland	1.792	1.699	+5.5	Germany	1.016	1.004	+1.2
				Czech Republic	0.415	0.386	+7.5
Belgium	1.372	1.170	+17.3	France	0.764	0.598	+27.8
				Netherlands	0.226	0.226	+/-0.0
				Luxembourg	0.224	0.215	+4.2
Austria	1.043	0.911	+14.5	Italy	0.566	0.457	+23.9
				Germany	0.340	0.330	+3.0
EU-28 Intra Trade	30.153	29.663	+1.7				

Source: Official Trade Statistics/WV Stahl

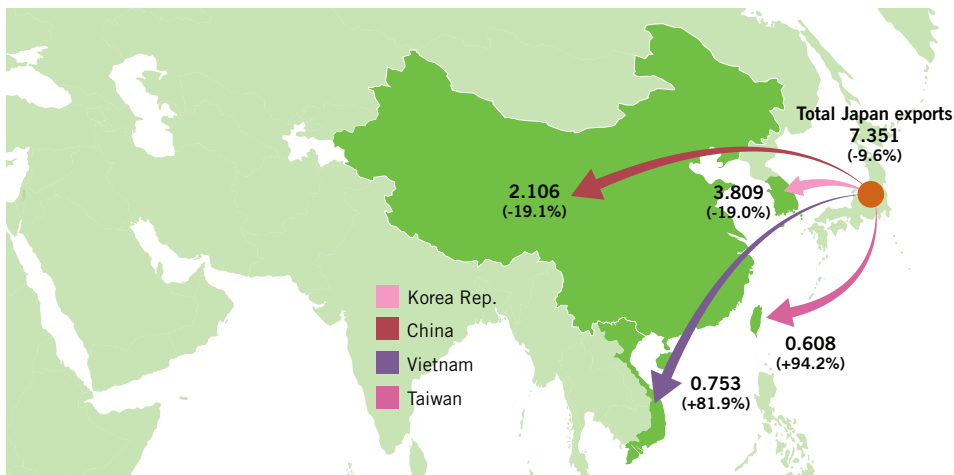
JAPAN STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013

Source: Official Trade Statistics/WV Stahl

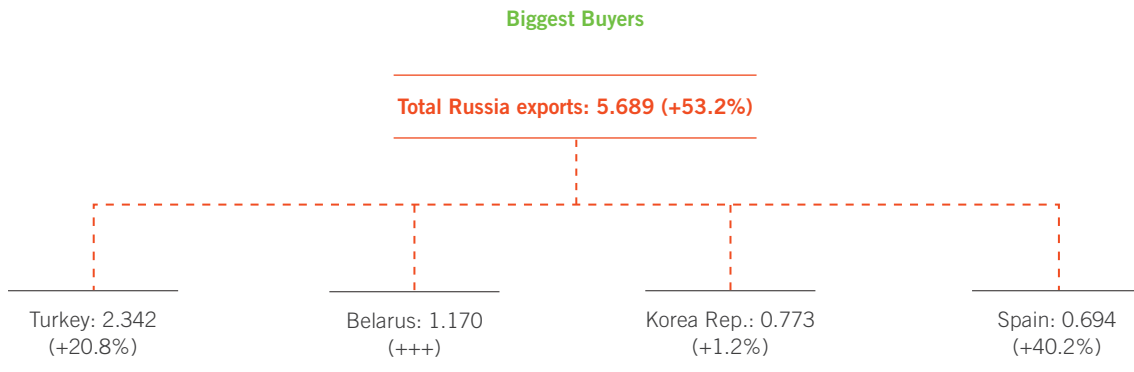
MAIN FLOWS OF JAPANESE STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013

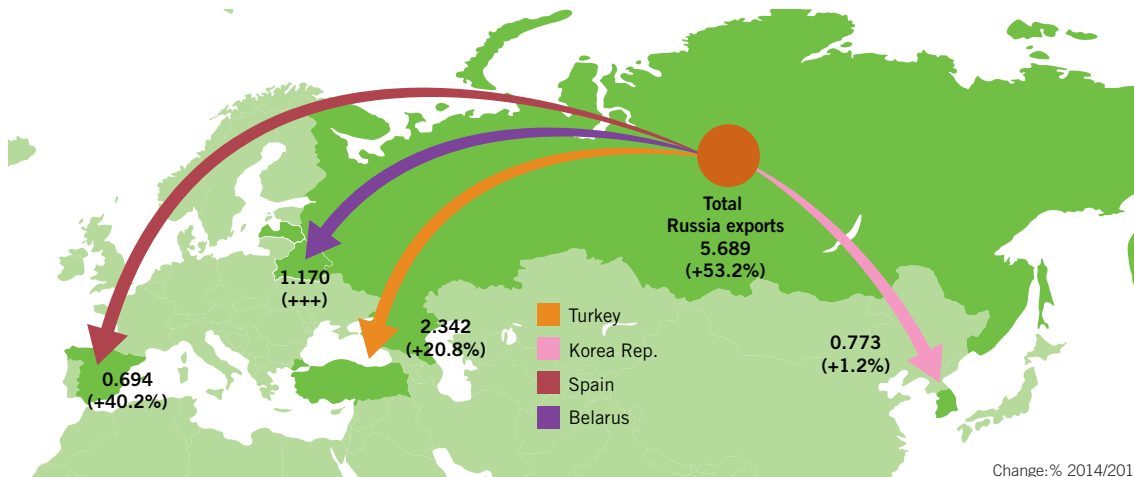
Source: Official Trade Statistics/WV Stahl

RUSSIA STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF RUSSIAN STEEL SCRAP EXPORTS 2014 (MILLION TONNES)

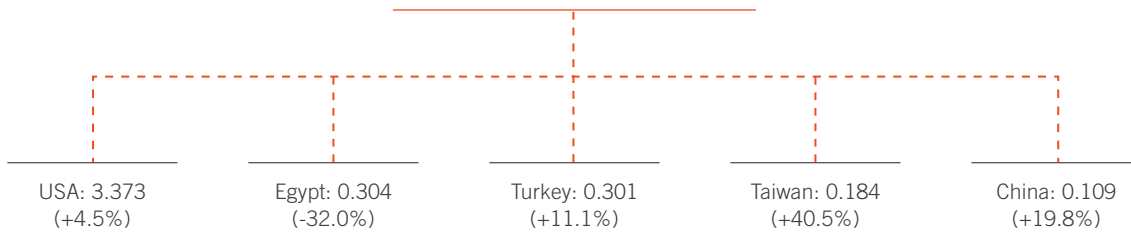


Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

CANADA STEEL SCRAP EXPORTS 2014 (MILLION TONNES)

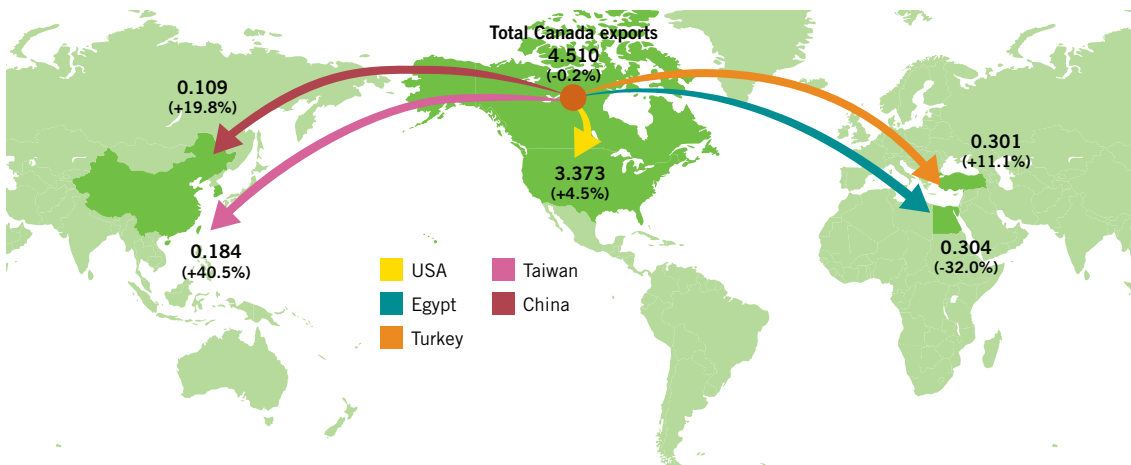
Biggest Buyers

Total Canada exports: 4.510 (-0.2%)



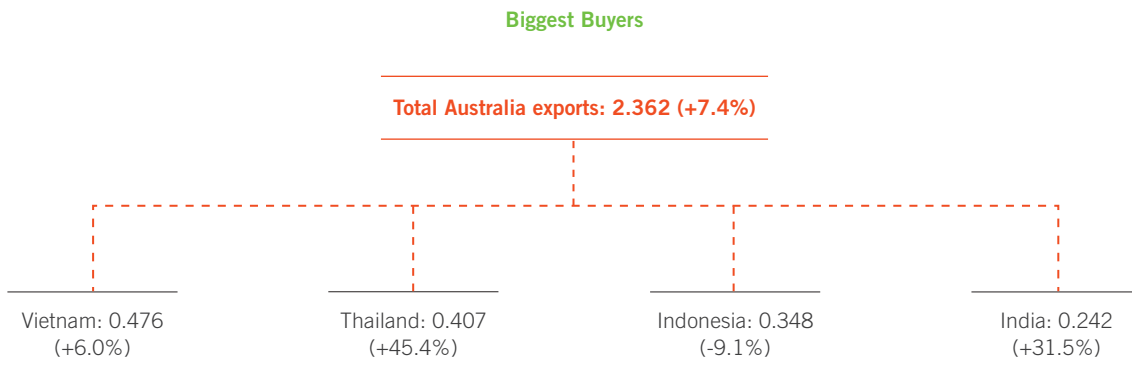
Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF CANADIAN STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



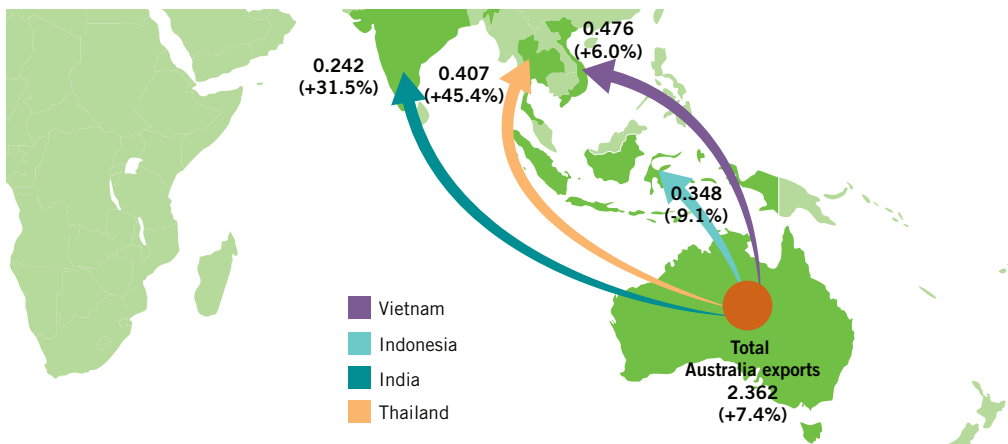
Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

AUSTRALIA STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



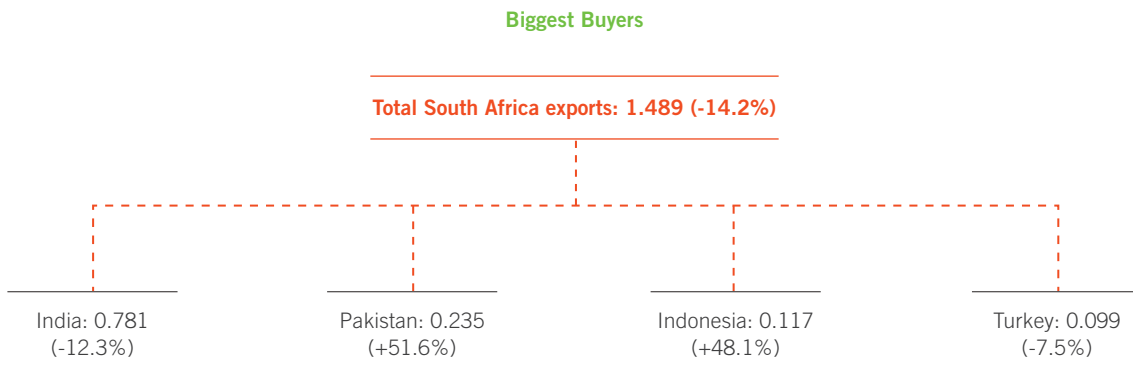
Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF AUSTRALIAN STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013
Source: Official Trade Statistics/WV Stahl

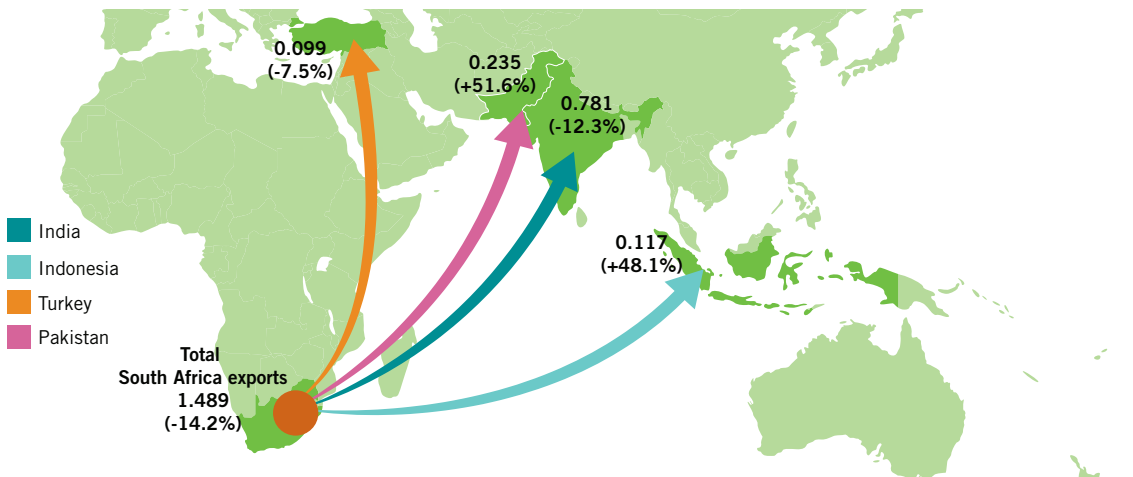
SOUTH AFRICA STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



Change: % 2014/2013

Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF SOUTH AFRICAN STEEL SCRAP EXPORTS 2014 (MILLION TONNES)



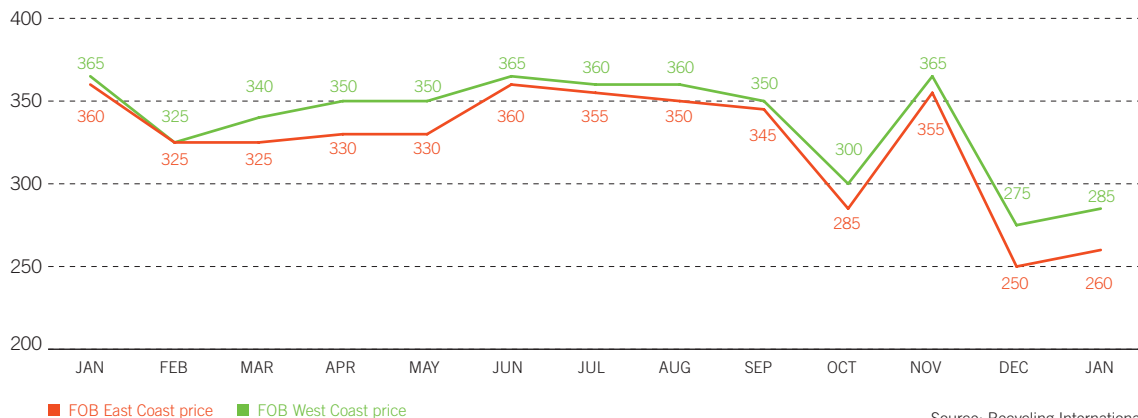
Change: % 2014/2013

Source: Official Trade Statistics/WV Stahl

STEEL SCRAP PRICE CURVES JANUARY 2014/2015

USA Export Prices (US\$/GRT)

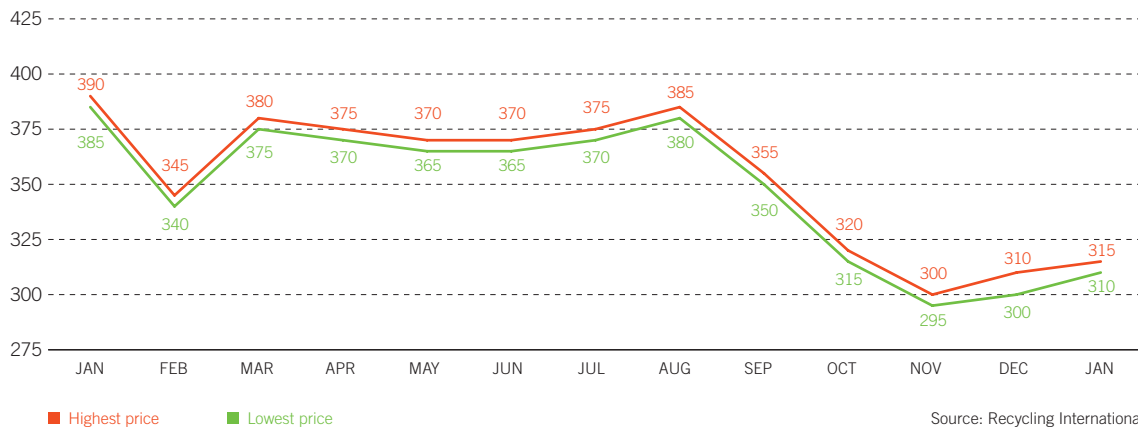
HMS 1, heavy steel scrap (1/4 inch)



Source: Recycling International

CFR Prices for shipments from EU to Turkey (US\$/t)

HMS 80/20 heavy steel scrap

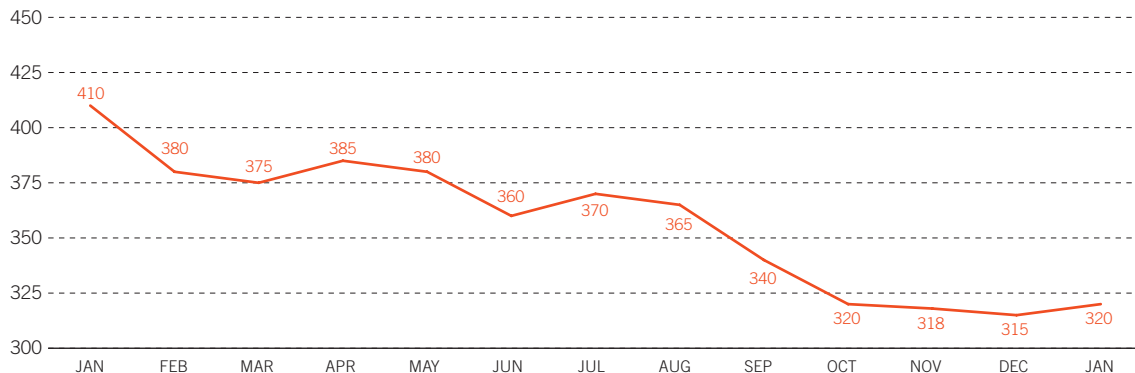


Source: Recycling International

STEEL SCRAP PRICE CURVES JANUARY 2014/2015

USA Domestic Scrap Prices (US\$/GRT)

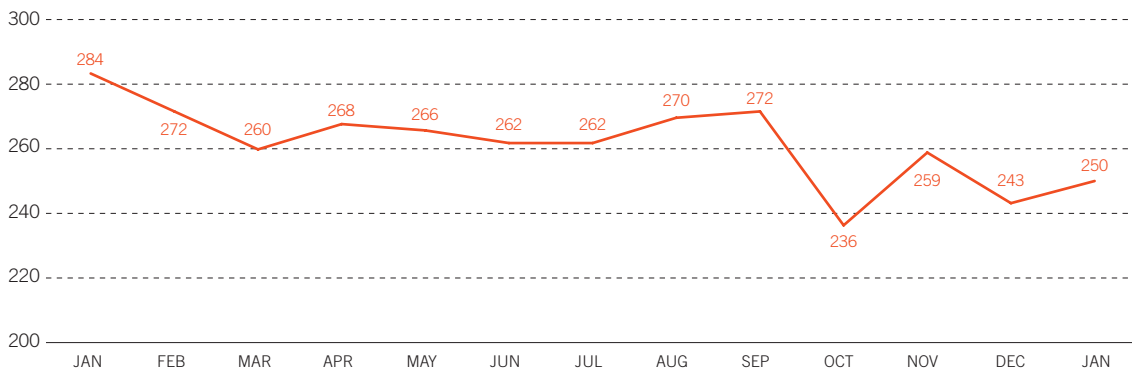
HMS 1 heavy steel scrap (1/4 inch) composite price delivered at mills



Source: Recycling International

Average German Scrap Prices (€/t)

S3/E3 heavy old steel scrap (6mm) free delivered at mills



Source: WV Stahl/pwc

Source: Recycling International

GLOSSARY

BIR	Bureau of International Recycling, Brussels, Belgium
BDG	German Foundry Association, Düsseldorf, Germany
CAMU	China's Association of Metalscrap Utilization, Beijing, China
TCUD	Turkish Steel Producers Association, Ankara, Turkey
EFR	European Ferrous Recovery & Recycling Federation, Brussels, Belgium
EUROFER	European Confederation of Iron and Steel Industries, Brussels, Belgium
ISRI	Institute of Scrap Recycling Industries, Washington, USA
KOSA	Korea Iron & Steel Association, Seoul, Republic of Korea
MIDREX	Midrex Technologies Inc., Charlotte, USA
Modern Casting	Magazine for Foundries and Diecasters, Schaumburg, Illinois, USA
Official Trade Statistics	Prepared by WV Stahl, Düsseldorf, Germany
Recycling International	International trade magazine, Arnhem, The Netherlands
USGS	U.S. Geological Survey, Reston, USA
worldsteel	World Steel Association, Brussels, Belgium
WV Stahl	German Steel Federation, Düsseldorf, Germany



Bureau of
International Recycling
Ferrous Division

BIR – REPRESENTING THE FUTURE LEADING RAW MATERIAL SUPPLIERS

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