WORLD STEEL RECYCLING IN FIGURES 2017 – 2021

Steel Scrap – a Raw Material for Green Steelmaking

13TH EDITION

Bureau of International Recycling
Ferrous Division

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FOREWORD

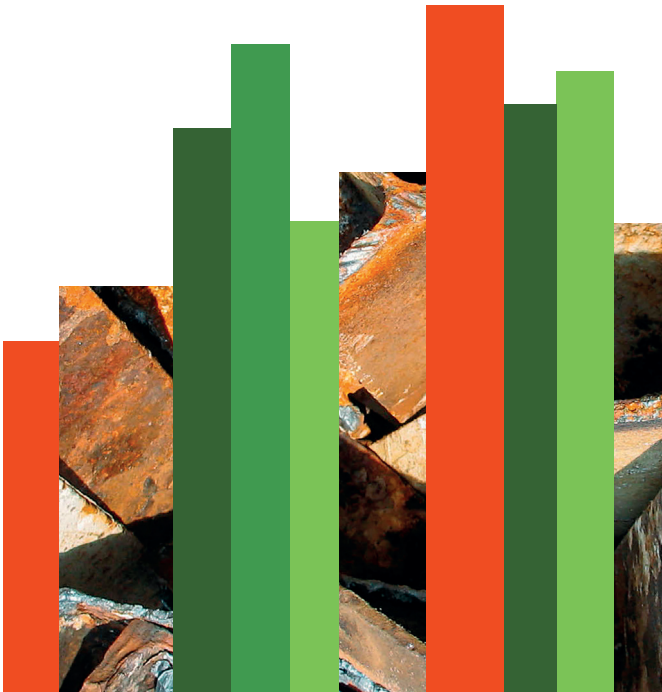
The latest edition of our BIR report "World Steel Recycling in Figures", which covers the five-year period between 2017 and 2021, highlights the global importance of ferrous scrap as a raw material for the world's steelworks and for its iron and steel foundries.

It is a great pleasure for me to announce the publication of what is the 13th edition of "World Steel Recycling in Figures". This compilation of important statistics relating to the global ferrous scrap markets has received a hugely positive welcome ever since it appeared for the first time in 2010. And following a decision from the BIR Ferrous Division board, this latest edition features a new subtitle to emphasize the importance of steel scrap usage for green steelmaking.

The full-year figures for 2021 contained in this report show an increase in world crude steel output and a higher steel scrap usage in most countries and regions. Indeed, total steel scrap use in our seven key countries and regions was around 503 million tonnes last year while corresponding crude steel production was 1.555 billion tonnes. It is important to note that the steel scrap usage figure in our statistics represents verified data for 79.7% of global steelmaking in 2021.

According to our calculations, annual ferrous scrap use in the world's iron and steel foundries has been between 67 and 73 million tonnes over recent years.

The final figures for 2021 also show positive developments in external steel scrap trading, which increased to 109.6 million tonnes.



The 13th edition of "World Steel Recycling in Figures" also contains an overview (supported by graphs) of the main suppliers to Turkey as the world's foremost steel scrap importer, to the EU-27 as the second-largest importer and to the USA as the third-largest. The report once again highlights the scale of world trade in steel scrap and thus serves to underline the need for a free raw materials market.

In total, the report contains eight flow charts – features which have received a particularly warm welcome – and incorporates a total of 60 graphs and tables.

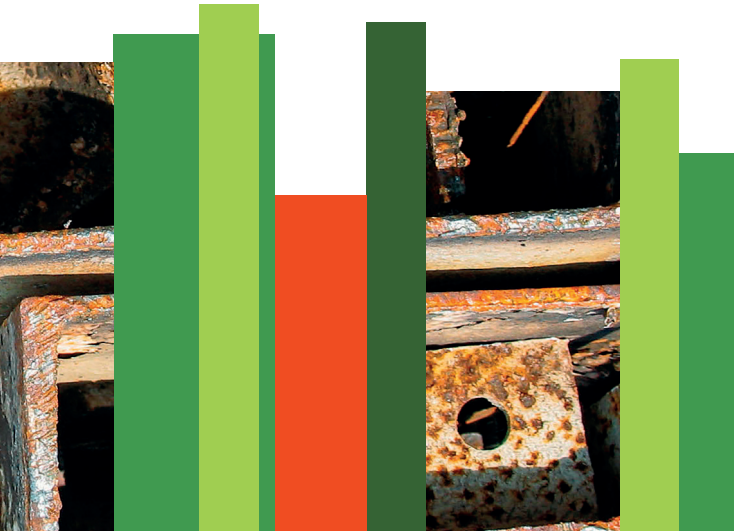
I would like to extend special thanks to Rolf Willeke, the BIR Ferrous Division's Statistics Advisor, who prepared and evaluated all the figures as well as developed the graphs and tables in this report. Since 2017, he has enjoyed the excellent co-operation of Daniela Entzian, the BIR Ferrous Division's Deputy Statistics Advisor, to whom I extend my appreciation. Rolf and his team are working with a worldwide network, so I would like to express my deep thanks to all the supporters of our publication.

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

We hope that, as with its predecessors, the 13th edition of "World Steel Recycling in Figures 2017-2021" will prove useful to you.

Brussels, May 2022

Denis Reuter
President of the BIR Ferrous Division



EXECUTIVE SUMMARY

The 13th edition of "World Steel Recycling in Figures" features a new subtitle highlighting the importance of steel scrap use in green steelmaking. The statistics in our publication show 3.8% growth in global crude steel output in 2021, as well as an increase in steel scrap use in most key countries and regions. It also includes an overview of global external steel scrap trading, revealing an increase in Turkey's imports and in the EU-27's exports.

Global crude steel production totalled 1.952 billion tonnes in 2021, up 3.8% from the previous year. According to worldsteel, global oxygen furnace production was almost unchanged on 1.381 billion tonnes whereas the electric furnace total jumped 14.4% to 563 million tonnes. There were also increases in the global production of both blast furnace iron (+1.2% to 1.346 billion tonnes) and DRI (+9.9% to 114.5 million tonnes).

Data in our corresponding table show a decrease in China's crude steel production last year (-3% to 1.033 billion tonnes), thereby reducing the country's share of global production from 56.6% in 2020 to 53% in 2021. In contrast, increased crude steel production was registered in 2021 by the EU-27 (+15.4% to 152.575 million tonnes), Japan (+15.8% to 96.334 million tonnes), the USA (+18% to 85.791 million tonnes), Russia (+5% to 76.894 million tonnes), the Republic of Korea (+5% to 70.418 million tonnes), Turkey (+12.7% to 40.360 million tonnes) and Canada (+18.1% to 12.976 million tonnes).

New subtitle: Steel Scrap – a Raw Material for Green Steelmaking

The 13th edition of "World Steel Recycling in Figures" features a new subtitle to highlight the importance of steel scrap use for green steelmaking. In the 11th edition, our own calculations and those of worldsteel concluded that, in 2019, 630 million tonnes of steel scrap was being recycled on an annual basis, thus preventing nearly 950 million tonnes each year of CO_2 emissions that would have come from the production of steel from virgin sources.

Besides this significant reduction in greenhouse gas emissions, it should also be noted that steel recycling saves energy and conserves natural resources, thus making a decisive contribution to climate protection.

Higher steel scrap usage in most countries and regions

According to our statistics, steel scrap consumption in China was 2.8% lower last year at 226.21 million tonnes, although the country remained the world's largest user. The proportion of scrap used in China's steel production was 21.9% in 2021 owing to an 11.5% increase in scrap-intensive electric furnace production.

Conversely, there were increases in steel scrap consumption last year in the EU-27, the USA, Turkey, Japan, Russia and the Republic of Korea.

The EU-27 recorded 16.7% growth in steel scrap consumption to 87.853 million tonnes in 2021, alongside the 15.4% increase in its crude steel production. The proportion of steel scrap used in the EU-27's crude steel production increased to 57.6% in 2021.

The USA recorded crude steel production growth of 18% last year and an increase in steel scrap usage of 18.3% to 59.4 million tonnes. The proportion of steel scrap used in US crude steel production improved to 69.2%.

Steel scrap usage increased in Turkey last year (+15.7% to 34.813 million tonnes) while its crude steel production was 12.7% higher. The proportion of steel scrap used in its crude steel production increased to 86.1%.

Our 2021 statistics reveal an increase in Japan's steel scrap usage (+19% to 34.727 million tonnes) compared to a crude steel production gain of 15.8%.

The 5% growth in Russia's crude steel production last year was exceeded by the increase in the nation's steel scrap usage (+7% to 32.138 million tonnes). The proportion of steel scrap used in Russia's crude steel production climbed to 41.7% in 2021.

The Republic of Korea recorded an increase in steel scrap usage last year of 9.5% to 28.296 million tonnes whereas its crude steel production climbed only 5%. The proportion of steel scrap used in the Republic of Korea's crude steel production increased to 40.1%.

Almost 67 million tonnes of scrap used in iron and steel foundries in 2020

Our calculation model for global ferrous scrap use in iron and steel foundries is produced in collaboration with the German Foundry Association (BDG). These calculations cover the period from 2014 to 2020. It was not possible to incorporate figures for 2021 because world casting production is determined by "Modern Casting" magazine with a time lag of one year. For 2020, global ferrous scrap usage of 66.9 million tonnes has been calculated (-4.3% compared to 2019) for a world iron and steel casting production total of 84.2 million tonnes (-1.6%).

Turkey increases overseas steel scrap purchases by 11.4%

Last year brought an 11.4% year-on-year increase in Turkey's overseas steel scrap purchases to 24.992 million tonnes, thus confirming the country as the world's foremost steel scrap importer. Its main suppliers were the USA (-13.7% to 3.768 million tonnes), the Netherlands (+1.9% to 3.214 million tonnes), the UK (+1.4% to 2.337 million tonnes) and Russia (-13.6% to 2.031 million tonnes).

The EU-27 took over as the world's second-largest steel scrap importer in 2021 (+31.1% to 5.367 million tonnes), with the region's main suppliers being the UK (+26.8% to 1.633 million tonnes), Switzerland (+1.9% to 0.796 million tonnes) and the USA (+107.1% to 0.551 million tonnes).

The world's third-largest steel scrap importer last year was the USA (+17.1% to 5.262 million tonnes); its main suppliers were Canada (+18.2% to 3.757 million tonnes), Mexico (+12.9% to 0.562 million tonnes) and the UK (+92.5% to 0.308 million tonnes).

Also higher last year were steel scrap imports into the Republic of Korea (+8.9% to 4.789 million tonnes), Thailand (+18% to 1.653 million tonnes), Malaysia (+9.8% to 1.533 million tonnes) and Indonesia (+3% to 1.462 million tonnes). Conversely, import declines were recorded by India (-4.6% to 5.133 million tonnes), Pakistan (-8.4% to 4.156 million tonnes), Belarus (-14.7% to 1.136 million tonnes) and Canada (-21% to 0.815 million tonnes).

EU-27 overseas steel scrap shipments climb by 11.5%

Global external steel scrap trade - including internal EU-27 trade - amounted to 109.6 million tonnes last year (+9.7% compared to 2020).

The EU-27 was the world's leading steel scrap exporter last year in growing its outbound shipments by 11.5% to 19.460 million tonnes, the main buyer being Turkey on 13.110 million tonnes (+11.3% year on year). The EU-27 also increased its overseas shipments to Egypt (+68.4% to 1.817 million tonnes), Switzerland (+16.4% to 0.561 million tonnes) and Moldova (+37.8% to 0.346 million tonnes).

In contrast, a drop was recorded in EU-27 deliveries to Pakistan (-13.1% to 0.804 million tonnes), the USA (-3.8% to 0.604 million tonnes) and India (-22.4% to 0.535 million tonnes). The largest EU-27 steel scrap exporter in 2021 was the Netherlands, with its total shipments of 4.687 million tonnes representing a 17% increase over the previous year.

EU-27 internal steel scrap exports totalled 29.328 million tonnes in 2021 (+14.5% compared to 2020).

Last year also brought an increase in US overseas steel scrap shipments of 6.1% to 17.906 million tonnes; among the leading buyers to extend their purchases from the USA were Mexico (+51.4% to 3.142 million tonnes) and Vietnam (+44.9% to 1.435 million tonnes). In contrast, decreases in US deliveries were recorded by main customer Turkey (-14% to 3.466 million tonnes), Malaysia (-8.2% to 1.449 million tonnes), Taiwan (-10.8% to 1.423 million tonnes), Bangladesh (-0.9% to 1.356 million tonnes) and Canada (-7.3% to 0.840 million tonnes).

Last year, increases were recorded in steel scrap exports from the UK (+21.4% to 8.287 million tonnes), Canada (+7.8% to 4.863 million tonnes), Australia (+6.9% to 2.224 million tonnes) and Singapore (+35.4% to 0.685 million tonnes), whereas declines in overseas shipments were registered by Japan (-22.1% to 7.301 million tonnes) and Russia (-12.4% to 4.140 million tonnes).

Most of the world's leading steel scrap exporters are major net steel scrap exporters: last year's export surplus was, for example, 14.1 million tonnes for the EU-27 and 12.6 million tonnes for the USA.

Over the past 13 years, we have been able to show the worldwide use of steel scrap as a raw material in steelworks and foundries, as well as to underline that our steel scrap is an ecological raw material and an internationally-traded commodity subject to world market prices.

I am grateful for the very good co-operation with BIR Ferrous Division President Denis Reuter and his board, as well as with the BIR Secretariat. I would like to extend my deep thanks to all those supporting this publication. Last but not least, I would like to offer my special thanks to Daniela Entzian, the BIR Ferrous Division's Deputy Statistics Advisor, for her excellent co-operation.

Rolf Willeke
Statistics Advisor of the BIR Ferrous Division

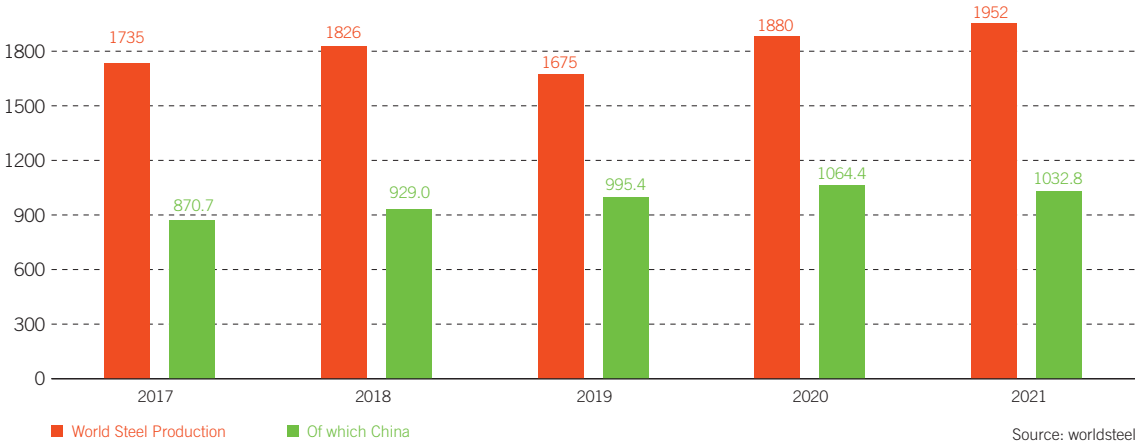
GRAPHS & TABLES

WORLD CRUDE STEEL PRODUCTION SUMMARY (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
European Union (27)	**161.0**	**160.0**	**150.2**	**132.2**	**152.6**	**+15.4**
Other Europe	**49.7**	**49.7**	**45.9**	**47.1**	**52.3**	**+11.1**
of which Turkey	37.5	37.3	33.7	35.8	40.4	+12.7
of which United Kingdom	7.5	7.3	7.2	7.1	7.2	+1.9
C.I.S.	**100.2**	**101.0**	**100.6**	**100.2**	**105.4**	**+5.1**
of which Russia	71.6	72.8	72.0	73.3	76.9	+5.0
North America	**115.4**	**120.9**	**119.7**	**101.0**	**117.9**	**+16.7**
of which USA	81.6	86.6	87.8	72.7	85.8	+18.0
of which Canada	13.2	13.4	12.9	11.0	13.0	+18.1
South America	**44.1**	**44.9**	**41.7**	**38.7**	**45.7**	**+18.1**
Africa	**15.0**	**17.8**	**17.4**	**17.4**	**21.1**	**+21.5**
of which South Africa	6.3	6.3	6.2	3.9e	5.0e	+29.5
Middle East	**34.7**	**43.2**	**44.3**	**45.4**	**45.8**	**+1.1**
of which Iran	21.2	24.5	25.6	29.0	28.5	-1.8
Asia	**1209.0**	**1282.7**	**1349.4**	**1392.3**	**1404.7**	**+0.9**
of which China	870.7	929.0	995.4	1064.7	1032.8	-3.0
of which India	101.4	109.3	111.4	100.3	118.2	+17.9
of which Japan	104.7	104.3	99.3	83.2	96.3	+15.8
of which Republic of Korea	71.0	72.5	71.4	67.1	70.4	+5.0
Oceania	**6.0**	**6.3**	**6.2**	**6.1**	**6.4**	**+5.7**
of which Australia	5.3	5.7	5.5	5.5	5.8	+5.3
World	**1735.1**	**1825.6**	**1675.3**	**1880.4**	**1951.9**	**+3.8**
Total 64 Countries						

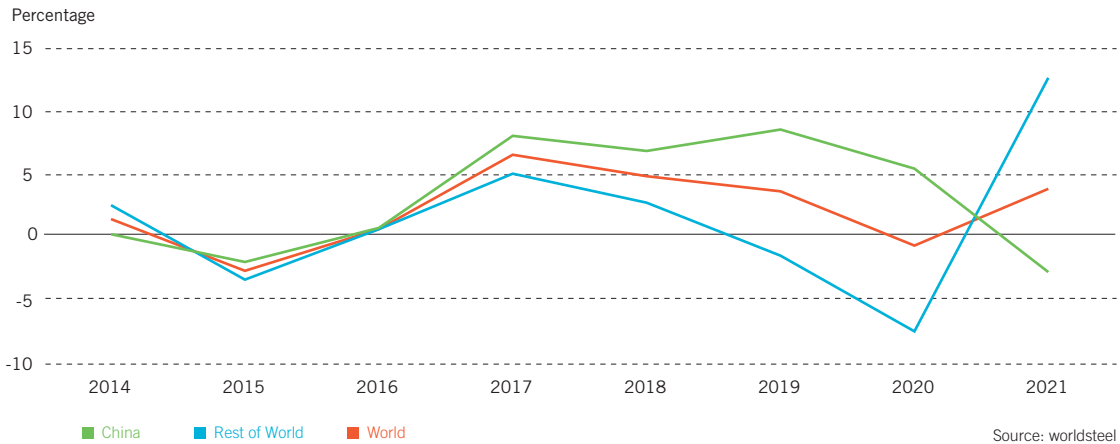
Source: worldsteel and Ruslom

WORLD CRUDE STEEL PRODUCTION (MILLION TONNES)



Source: worldsteel

CRUDE STEEL PRODUCTION ANNUAL GROWTH TREND (IN PERCENT)



Source: worldsteel

WORLD CRUDE STEEL PRODUCTION BY BOF AND EF PROCESS

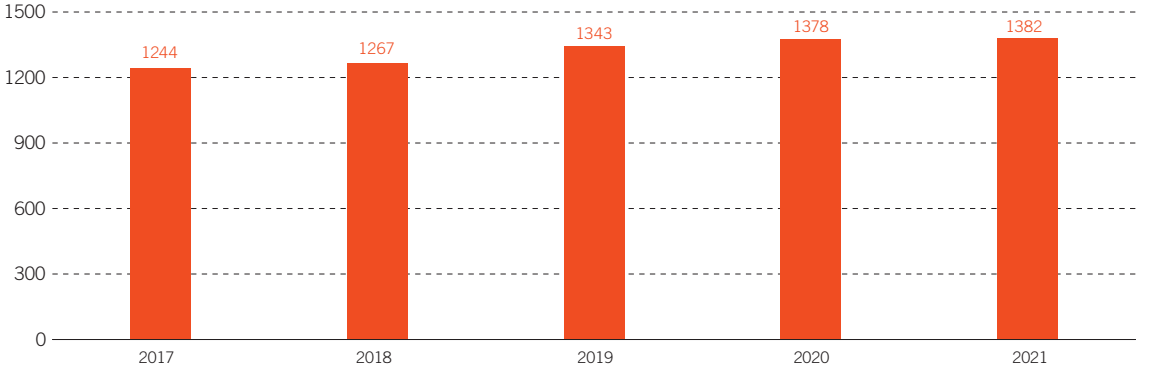
YEAR 2021

	Million Tonnes		Percentage of Total Production	
	BOF	EF	BOF	EF
European Union (28)	**91.5**	**68.3**	**57.3**	**42.7**
Other Europe	**13.7**	**31.4**	**30.4**	**69.6**
of which Turkey	11.5	28.9	28.4	71.6
C.I.S.	**65.2**	**34.8**	**61.8**	**33.0**
of which Russia	44.6	29.5	59.0	39.0
North America	**36.5**	**81.4**	**31.0**	**69.0**
of which USA	26.5	59.3	30.8	69.2
South America	**30.8**	**14.2**	**67.7**	**31.3**
Africa	**3.4**	**17.1**	**16.1**	**83.9**
of which South Africa	2.9	2.1	57.7	42.3
Middle East	**2.8**	**43.1**	**6.0**	**94.0**
of which Iran	2.8	25.7	9.7	90.3
Asia	**1132.8**	**270.2**	**80.7**	**19.3**
of which China	923.5	109.3	89.4	10.6
of which India	53.0	65.2	44.8	55.2
of which Japan	71.9	24.4	74.7	25.3
of which Republic of Korea	48.0	22.4	68.2	31.8
Oceania	**4.9**	**1.5**	**76.2**	**23.8**
of which Australia	4.3	1.5	73.6	26.4
World	**1381.5**	**562.7**	**70.8**	**28.9**
Total 64 Countries				

BOF – Basic Oxygen Furnace
EF – Electric Furnace

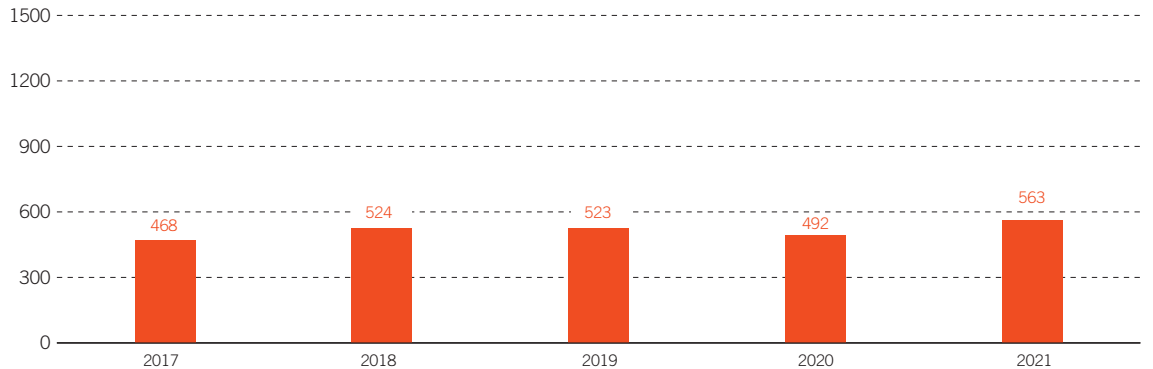
Source: worldsteel

WORLD BOF – BASIC OXYGEN FURNACE PRODUCTION (MILLION TONNES)



Source: worldsteel

WORLD EF – ELECTRIC FURNACE PRODUCTION (MILLION TONNES)



Source: worldsteel

THE 12 LARGEST STEEL-PRODUCING COUNTRIES (MILLION TONNES)

		2017	2018	2019	2020	2021	% 2021/ 2020
1	China	870.9	920.0	995.4	1064.8	1032.8	-3.0
2	India	101.4	109.3	111.3	100.2	118.1	+17.9
3	Japan	104.7	104.3	99.3	83.2	96.3	+15.8
4	USA	81.6	86.6	87.8	72.7	86.0	+18.3
5	Russia	71.6	72.8	72.0	73.2	76.0	+6.1
6	Republic of Korea	71.0	72.5	71.4	67.1	70.6	+5.2
7	Turkey	37.5	37.3	33.7	35.8	40.4	+12.7
8	Germany	43.3	42.4	39.7	35.7	40.1	+12.3
9	Brazil	34.4	35.4	32.6	30.9	36.0	+14.7
10	Iran	21.2	24.5	25.6	29.0	28.5	-1.8
11	Taiwan	22.4	23.2	22.0	20.5	23.2	+10.9
12	Ukraine	21.4	21.1	20.8	20.6	21.4	+3.6

Source: worldsteel and RUSLOM

PRODUCTION OF CRUDE STEEL AND PRIMARY IRON IN THE WORLD (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	1735	1827	1874	1880	1952	+3.8
of which						
Basic Oxygen Furnace (BOF)	1244	1267	1343	1378	1382	+0.2
Electric Furnace (EF)	468	524	523	492	563	+14.4
(Share BOF of Crude Steel) in %	**72.3**	**70.9**	**72.6**	**73.3**	**70.8**	
(Share EF of Crude Steel) in %	**27.2**	**29.2**	**28.3**	**26.1**	**28.9**	
Blast Furnace Iron	1183	1258	1321	1336	1346	+0.8
(Ratio B F Iron / Crude Steel) in %	**68.2**	**68.9**	**70.5**	**71.1**	**69.0**	
Direct Reduced Iron (DRI)	92.2	105.3	109.4	104.3	114.5	+9.9
(Ratio DRI / Crude Steel) in %	**5.3**	**5.8**	**5.8**	**5.5**	**5.9**	

Source: worldsteel

STEEL SCRAP USE FOR STEELMAKING IN KEY COUNTRIES AND REGIONS (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
China	147.9	187.8	215.9	232.62	226.21	-2.8
EU28/27	93.6	90.939	86.473	75.255	87.853	+16.7
USA	58.8	60.1	60.7	50.2	59.4	+18.3
Turkey	30.27	31.317	27.900	30.077	34.813	+15.7
Japan	35.77	36.513	33.682	29.179	34.727	+19.0
Russia	29.34	31.776	30.173	30.030	32.138	+7.0
Republic of Korea	30.67	29.956	28.601	25.831	28.296	+9.5
Canada	6.29	6.67	6.28	*	*	

* Not available at editorial deadline
EU-27 since 2020

Source: EUROFER, CAMU, USGS/ISRI-calculations, TCUD, Japan Ministry of Economy, RUSMET, KOSA, CARI

STEEL SCRAP USE AND CRUDE STEEL PRODUCTION IN KEY COUNTRIES AND REGIONS (MILLION TONNES)

	Steel Scrap Consumption			Crude Steel Production		
	2021	2020	% Change	2021	2020	% Change
China	226.21	232.62	-2.8	1032.790	1064.732	-3.0
EU-27	87.853	75.255	+16.7	152.575	132.177	+15.4
USA	59.4	50.2	+18.3	85.791	72.732	+18.0
Turkey	34.813	30.077	+15.7	40.360	35.810	+12.7
Japan	34.727	29.179	+19.0	96.334	83.839	+15.8
Russia	32.138	30.030	+7.0	76.894	73.251	+5.0
Republic of Korea	28.296	25.831	+9.5	70.418	67.079	+5.0
Canada	*	*		12.976	10.986	+18.1

*Not available at editorial deadline

Source: CAMU, EUROFER, ISRI-calculations, TCUD, Japan Ministry of Economy, RUSMET, KOSA, CARI, worldsteel

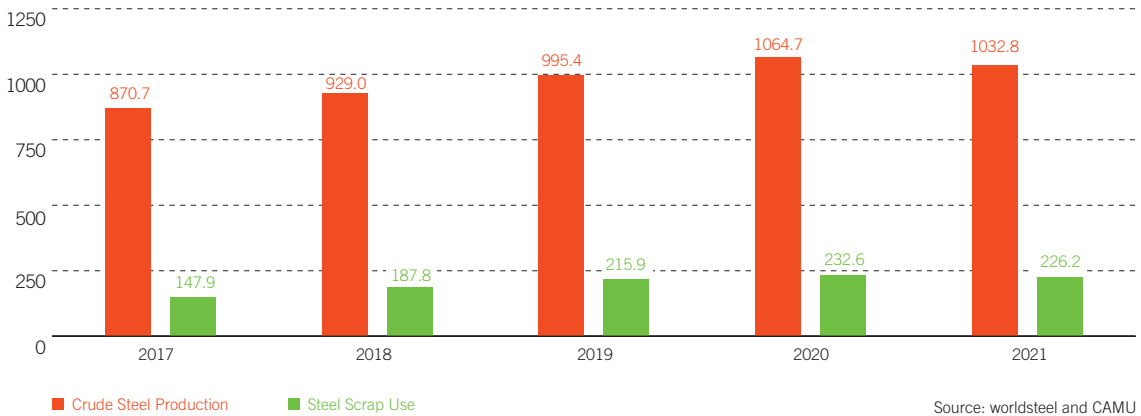
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN **CHINA** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	870.7	929.0	995.4	1064.7	1032.8	-3.0
of which						
Share BOF of Crude Steel in %	**90.7**	**87.0**	**89.6**	**90.8**	**89.4**	
Share EF of Crude Steel in %	**9.3**	**13.0**	**10.4**	**9.2**	**10.6**	
Total Steel Scrap Use	147.9	187.8	215.9	232.6	226.2	-2.8
Ratio Steel Scrap / Crude Steel in %	**17.0**	**20.2**	**21.7**	**21.8**	**21.9**	

BOF – Basic Oxygen Furnace
EF – Electric Furnace

Source: worldsteel and CAMU

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



Source: worldsteel and CAMU

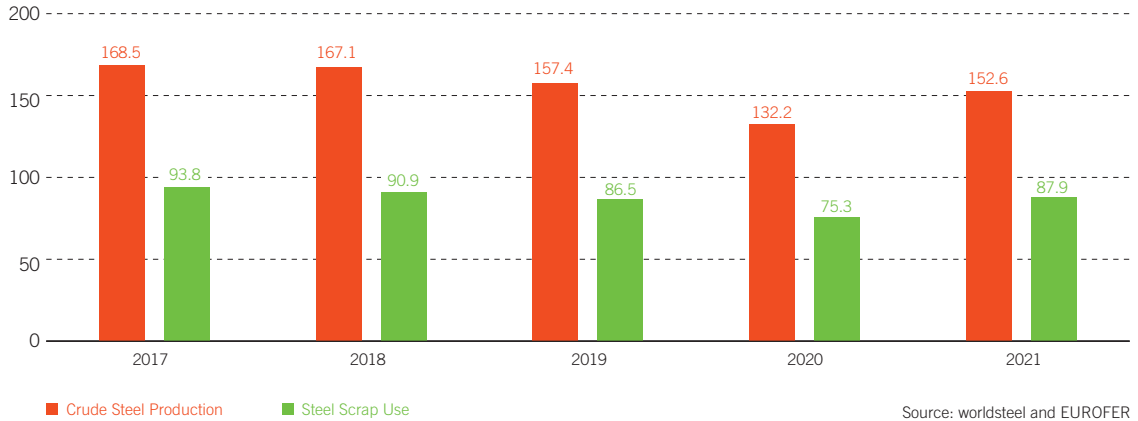
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE **EU-28/27** (MILLION TONNES)

	2017	2018	2019	2020*	2021*	% 2021/ 2020
Crude Steel Production	168.5	167.1	157.4	132.2	152.6	+15.4
of which						
Share BOF of Crude Steel in %	**59.6**	**58.5**	**59.6**	**56.3**	**56.1**	
Share EF of Crude Steel in %	**40.4**	**41.5**	**40.4**	**43.7**	**43.9**	
Total Steel Scrap Use	93.8	90.9	86.5	75.3	87.9	+16.7
Ratio Steel Scrap / Crude Steel in %	**55.5**	**54.4**	**55.0**	**57.0**	**57.6**	

BOF – Basic Oxygen Furnace
EF – Electric Furnace
*Data EU-27

Source: worldsteel and EUROFER

STEEL SCRAP FOR STEELMAKING IN THE **EU-28/27** (MILLION TONNES)



Source: worldsteel and EUROFER

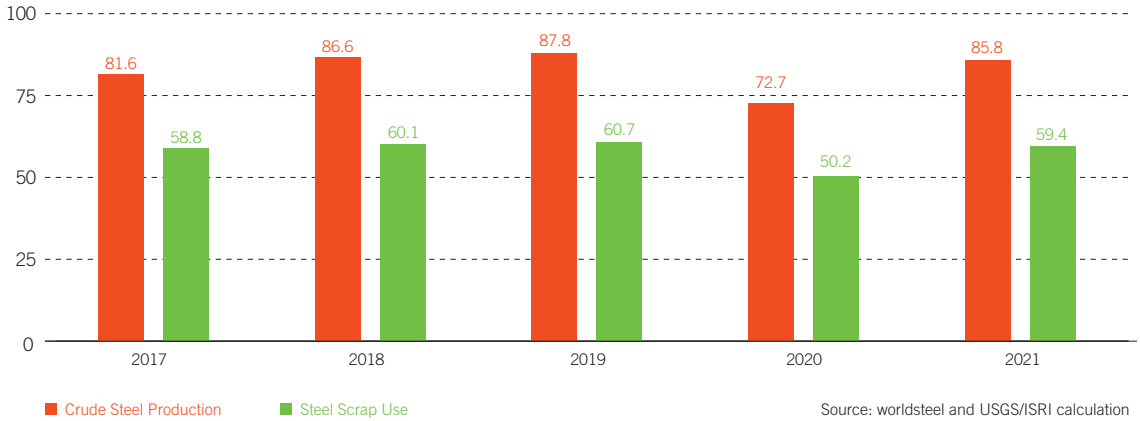
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE **USA** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	81.6	86.6	87.8	72.7	85.8	+18.0
of which						
Share BOF of Crude Steel in %	**31.6**	**32.0**	**30.0**	**29.4**	**30.9**	
Share EF of Crude Steel in %	**68.4**	**68.0**	**69.7**	**70.6**	**69.1**	
Total Steel Scrap Use	58.8	60.1	60.7	50.2	59.4	+18.3
Ratio Steel Scrap / Crude Steel in %	**72.1**	**69.4**	**69.1**	**69.1**	**69.2**	

BOF – Basic Oxygen Furnace
EF – Electric Furnace

Source: worldsteel and USGS/ISRI calculation

STEEL SCRAP FOR STEELMAKING IN THE **USA** (MILLION TONNES)



Source: worldsteel and USGS/ISRI calculation

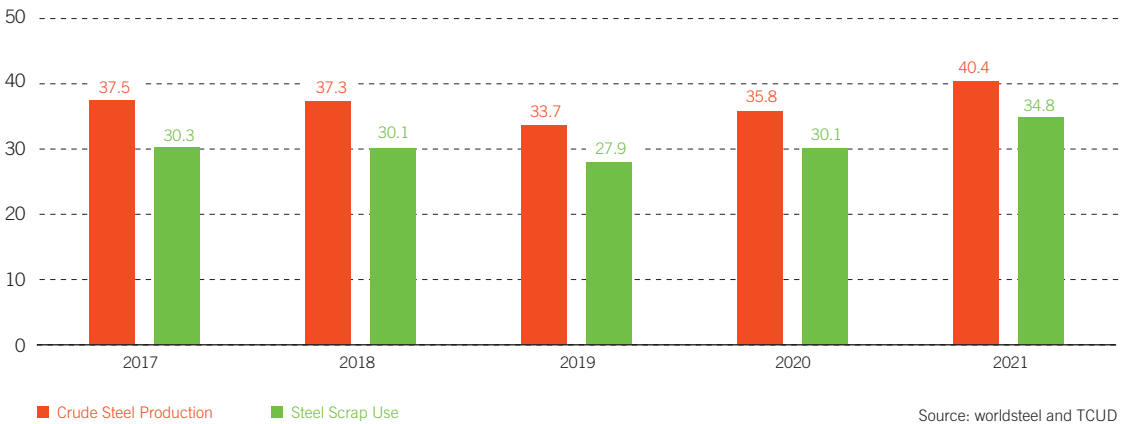
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN **TURKEY** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	37.5	37.3	33.7	35.8	40.4	+12.7
of which						
Share BOF of Crude Steel in %	**30.8**	**30.9**	**32.2**	**30.7**	**28.4**	
Share EF of Crude Steel in %	**69.2**	**69.1**	**67.8**	**69.2**	**71.5**	
Total Steel Scrap Use	30.3	30.1	27.9	30.1	34.8	+15.7
Ratio Steel Scrap / Crude Steel in %	**80.8**	**80.7**	**82.8**	**84.1**	**86.1**	

BOF – Basic Oxygen Furnace
EF – Electric Furnace

Source: worldsteel and TCUD

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



Source: worldsteel and TCUD

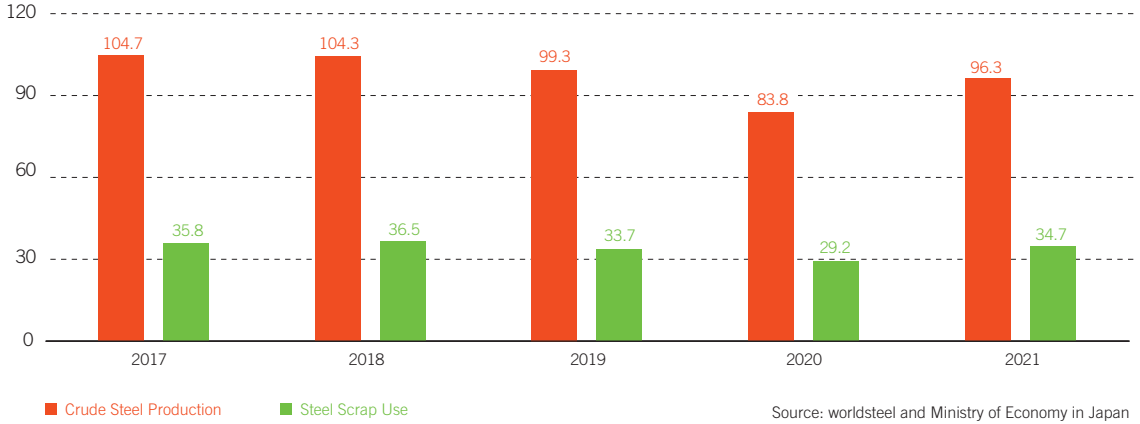
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN **JAPAN** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	104.7	104.3	99.3	83.8	96.3	+15.8
of which						
Share BOF of Crude Steel in %	**75.8**	**75.0**	**75.5**	**74.4**	**74.7**	
Share EF of Crude Steel in %	**24.2**	**25.0**	**24.5**	**25.2**	**25.3**	
Total Steel Scrap Use	35.8	36.5	33.7	29.2	34.7	+19.0
Ratio Steel Scrap / Crude Steel in %	**34.2**	**35.0**	**33.9**	**34.8**	**34.8**	

BOF – Basic Oxygen Furnace
EF – Electric 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

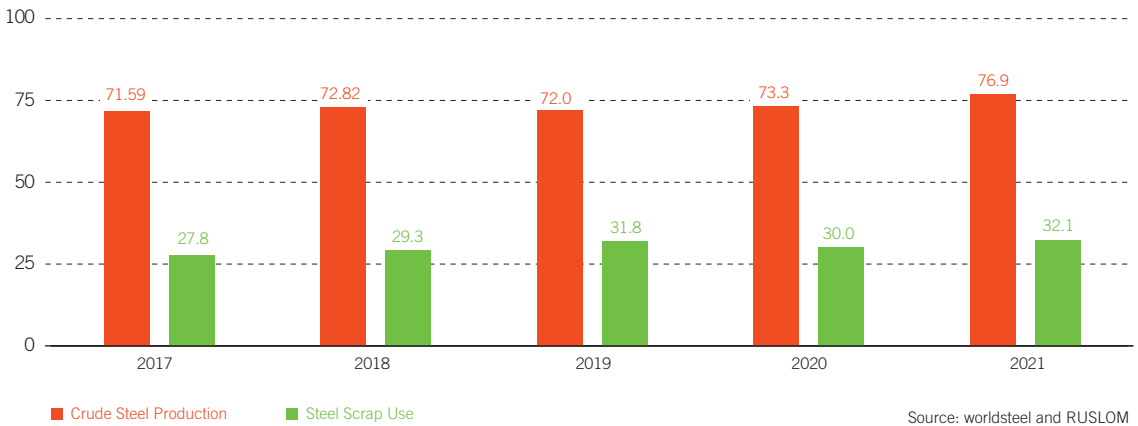
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN **RUSSIA** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	71.59	72.82	72.0	73.3	76.9	+5.0
of which						
Share BOF of Crude Steel in %	**67.7**	**66.7**	**65.9**	**64.1**	**58.0**	
Share EF of Crude Steel in %	**29.0**	**30.7**	**30.2**	**33.6**	**38.4**	
Total Steel Scrap Use	27.8	29.3	31.8	30.0	32.1	+7.0
Ratio Steel Scrap / Crude Steel in %	**39.5**	**41.0**	**43.7**	**40.9**	**41.7**	

BOF – Basic Oxygen Furnace
EF – Electric Furnace

Source: worldsteel and RUSLOM

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



Source: worldsteel and RUSLOM

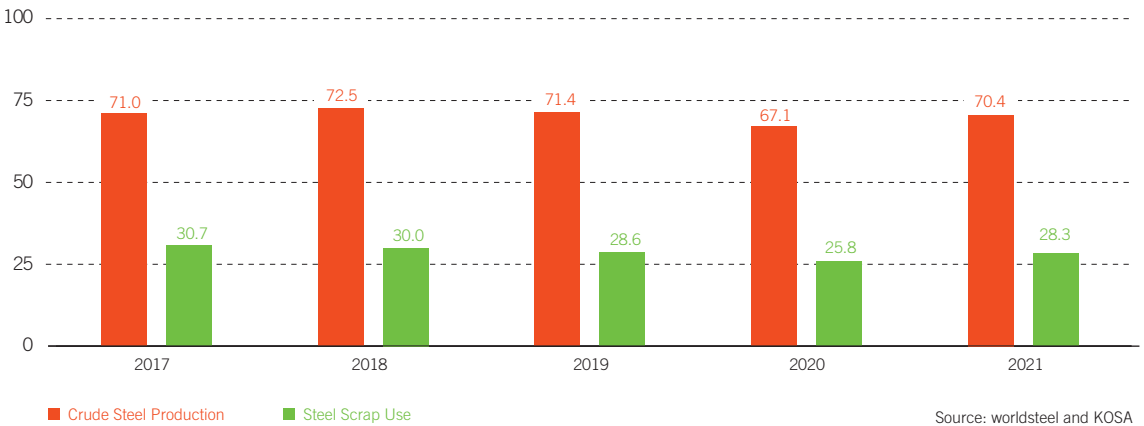
CRUDE STEEL PRODUCTION AND STEEL SCRAP USE IN THE **REPUBLIC OF KOREA** (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	71.0	72.5	71.4	67.1	70.4	+5.0
of which						
Share BOF of Crude Steel in %	**67.1**	**66.6**	**68.2**	**69.0**	**68.0**	
Share EF of Crude Steel in %	**32.9**	**33.4**	**31.8**	**31.0**	**31.7**	
Total Steel Scrap Use	30.7	30.0	28.6	25.8	28.3	+9.5
Ratio Steel Scrap / Crude Steel in %	**43.2**	**41.4**	**39.9**	**38.5**	**40.1**	

BOF – Basic Oxygen Furnace
EF – Electric 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 **CANADA** (MILLION TONNES)

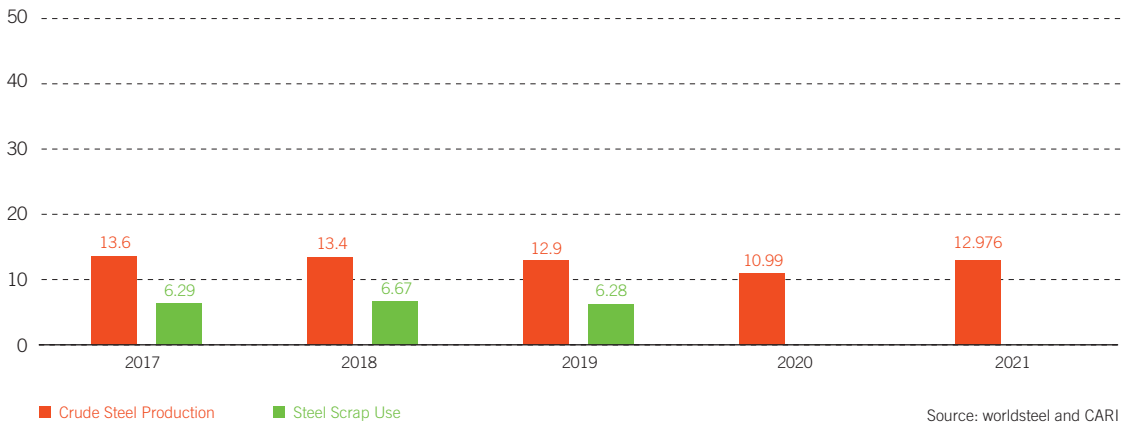
	2017	2018	2019	2020	2021	% 2021/ 2020
Crude Steel Production	13.6	13.4	12.9	10.99	12.976	+18.1
of which						
Share BOF of Crude Steel in %	**53.4**	**56.9**	**60.6**	**54.3**	**54.7**	
Share EF of Crude Steel in %	**46.6**	**43.1**	**39.4**	**46.7**	**45.3**	
Total Steel Scrap Use	6.29	6.67	6.28	*	*	
Ratio Steel Scrap / Crude Steel in %	**46.3**	**49.8**	**49.1**			

BOF – Basic Oxygen Furnace
EF – Electric Furnace

Source: worldsteel and CARI

*Not available at editorial deadline

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



Source: worldsteel and CARI

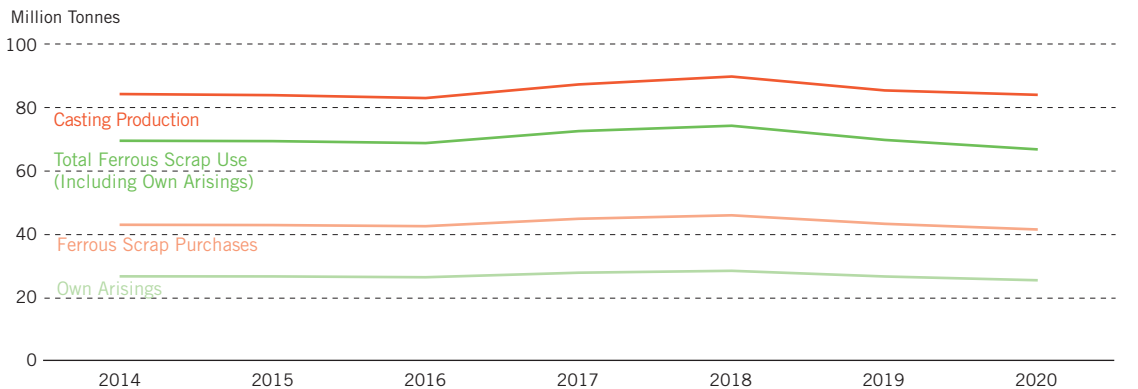
FERROUS SCRAP USE IN IRON AND STEEL FOUNDRIES IN THE WORLD (MILLION TONNES)

	2014	2015	2016	2017	2018	2019	2020	% 2020/ 2019
Iron Steel and Malleable Casting Production	84.4	84.0	83.2	87.5	90.0	85.6	84.2	-1.6
Total Ferrous Scrap Use	69.6	69.5	68.9	72.7	74.4	69.9	66.9	-4.3
(Ratio Scrap Use / Casting Production) in %	**82.47**	**82.66**	**82.83**	**83.03**	**82.60**	**81.57**	**79.45**	
Own Arisings (Circulating Scrap)*	26.6	26.6	26.4	27.8	28.4	26.6	25.4	-4.5
(Share Own Arisings of Scrap Use) in %	**38.26**	**38.29**	**38.25**	**38.25**	**38.13**	**38.02**	**38.01**	
Ferrous Scrap Purchases	43.0	42.9	42.5	44.9	46.0	43.3	41.5	-4.1
(Share Purchases of Scrap Use) in %	**61.68**	**61.71**	**61.75**	**61.75**	**61.87**	**61.98**	**61.99**	

Source: Modern Casting and own calculations by BDG/BIR

* 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 Circulationg Scrap as well.

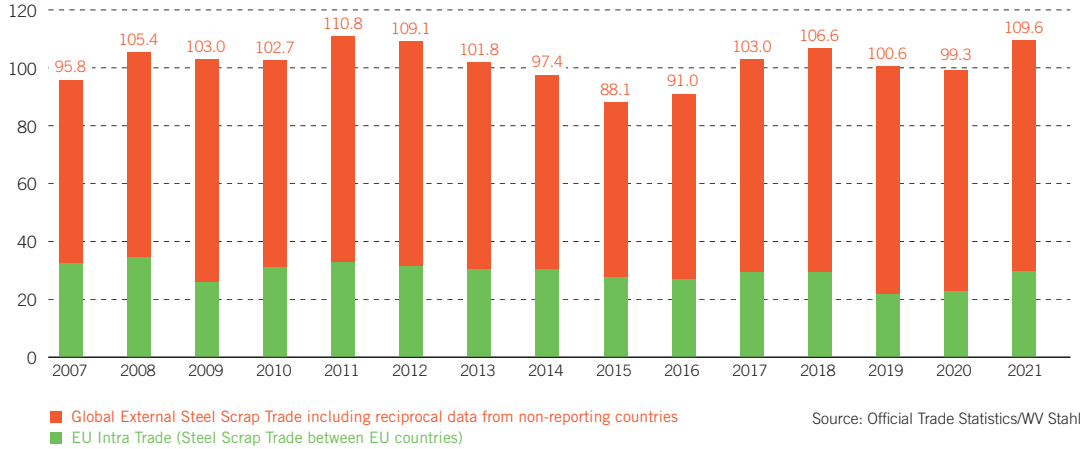
FERROUS SCRAP USE IN IRON AND STEEL FOUNDRIES IN THE WORLD (MILLION TONNES)



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)

	2017	2018	2019	2020	2021	% 2021/ 2020
Turkey	20.980	20.660	18.857	22.435	24.992	+11.4
EU-28/27	3.071	2.828	2.893	4.094	5.367	+31.1
USA	4.036	5.030	4.268	4.512	5.262	+17.1
India	5.365	6.330	7.053	5.383	5.133	-4.6
Republic of Korea	6.175	6.393	6.495	4.398	4.789	+8.9
Pakistan	5.123	5.013	4.337	4.535	4.156	-8.4
Taiwan	2.919	3.629	3.523	3.616	3.088	-14.6
Thailand	1.741	1.724	1.094	1.401	1.653	+18.0
Malaysia	0.644	0.980	1.532	1.396	1.533	+9.8
Indonesia	1.857	2.510	2.614	1.420	1.462	+3.0
Belarus	1.353	1.497	1.280	1.331	1.136	-14.7
Canada	2.115	3.471	2.129	1.031	0.815	-21.0

EU 27 since 2020

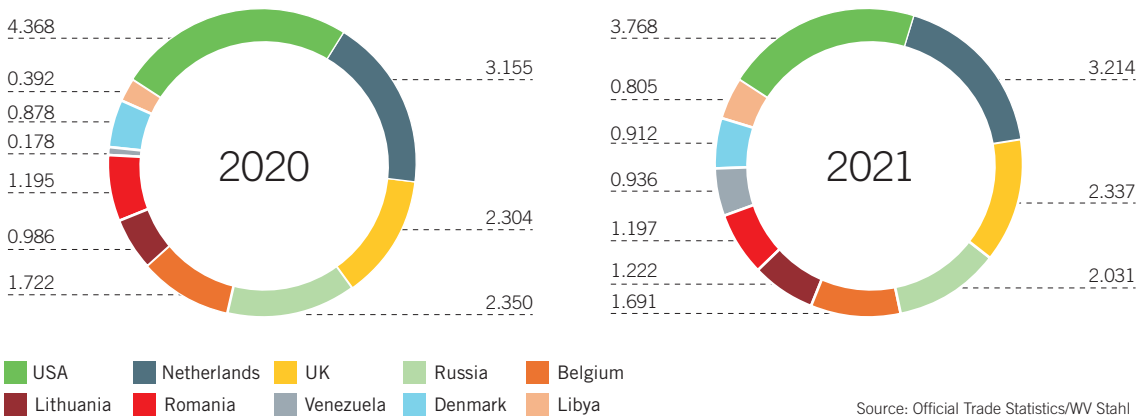
Source: Official Trade Statistics/WV Stahl

STEEL SCRAP IMPORTS OF **TURKEY** (MILLION TONNES)

	2020	2021	% Change		2020	2021	% Change
Total	**22.435**	**24.992**	**+11.4**	USA	4.368	3.768	-13.7
				Netherlands	3.155	3.214	+1.9
				UK	2.304	2.337	+1.4
				Russia	2.350	2.031	-13.6
				Belgium	1.722	1.691	-1.8
				Lithuania	0.986	1.222	+23.9
				Romania	1.195	1.197	+0.2
				Venezuela	0.178	0.936	+425.8
				Denmark	0.878	0.912	+3.9
				Libya	0.392	0.805	+105.4

Source: Official Trade Statistics/WV Stahl

MAIN STEEL SCRAP SUPPLIERS OF **TURKEY** – DEVELOPMENT 2020 VS. 2021 (MILLION TONNES)



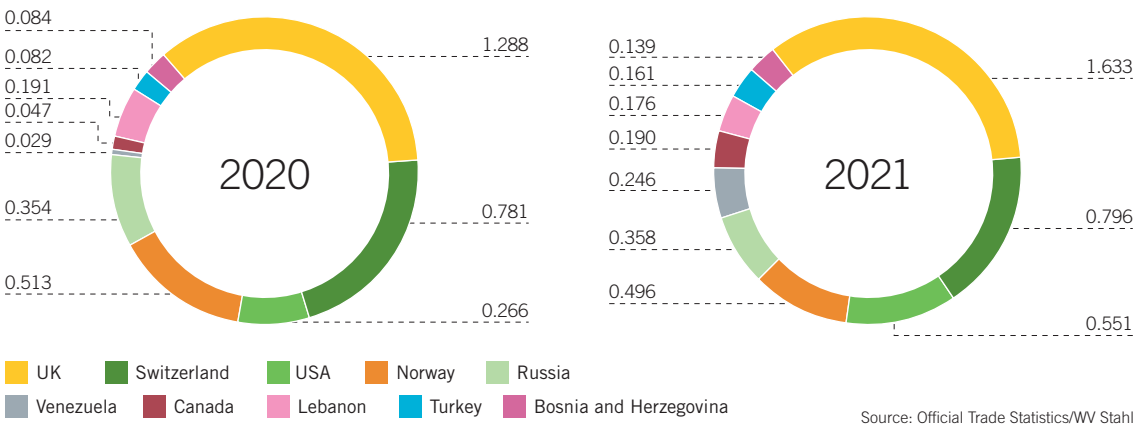
Source: Official Trade Statistics/WV Stahl

STEEL SCRAP IMPORTS OF THE **EU-27** (MILLION TONNES)

	2020	2021	% Change		2020	2021	% Change
Total	**4.094**	**5.367**	**+31.1**	UK	1.288	1.633	+26.8
				Switzerland	0.781	0.796	+1.9
				USA	0.266	0.551	+107.1
				Norway	0.513	0.496	-3.3
				Russia	0.354	0.358	+1.1
				Venezuela	0.029	0.246	+748.3
				Canada	0.047	0.190	+304.3
				Lebanon	0.191	0.176	-7.9
				Turkey	0.082	0.161	+96.3
				Bosnia and Herzegovina	0.084	0.139	+65.5

Source: Official Trade Statistics/WV Stahl

MAIN STEEL SCRAP SUPPLIERS OF THE **EU-27** – DEVELOPMENT 2020 VS. 2021 (MILLION TONNES)



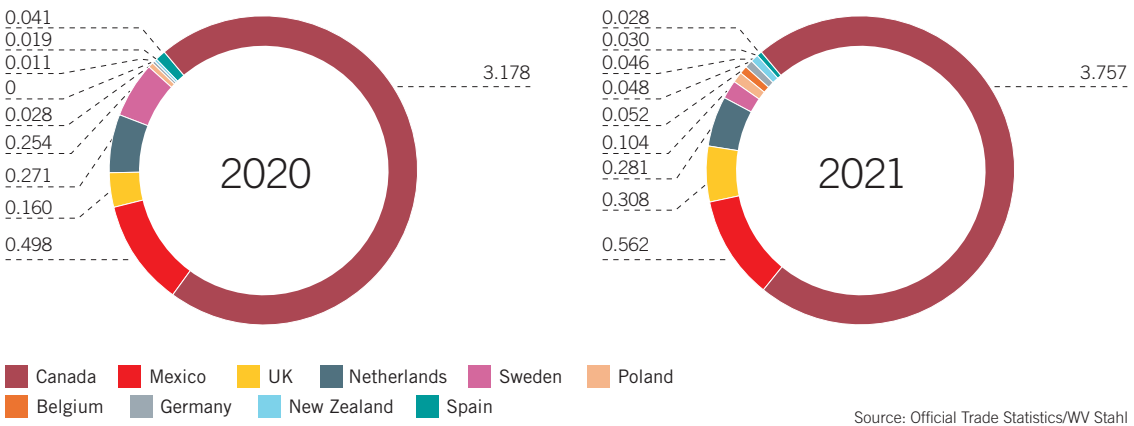
Source: Official Trade Statistics/WV Stahl

STEEL SCRAP IMPORTS OF **THE USA** (MILLION TONNES)

	2020	2021	% Change		2020	2021	% Change
Total	**4.512**	**5.262**	**+17.1**	Canada	3.178	3.757	+18.2
				Mexico	0.498	0.562	+12.9
				UK	0.160	0.308	+92.5
				Netherlands	0.271	0.281	+3.7
				Sweden	0.254	0.104	-59.1
				Poland	0.028	0.052	+85.7
				Belgium	0	0.048	-
				Germany	0.011	0.046	+318.2
				New Zealand	0.019	0.030	+57.9
				Spain	0.041	0.028	-31.7

Source: Official Trade Statistics/WV Stahl

MAIN STEEL SCRAP SUPPLIERS OF **THE USA** – DEVELOPMENT 2019 VS. 2020 (MILLION TONNES)



Source: Official Trade Statistics/WV Stahl

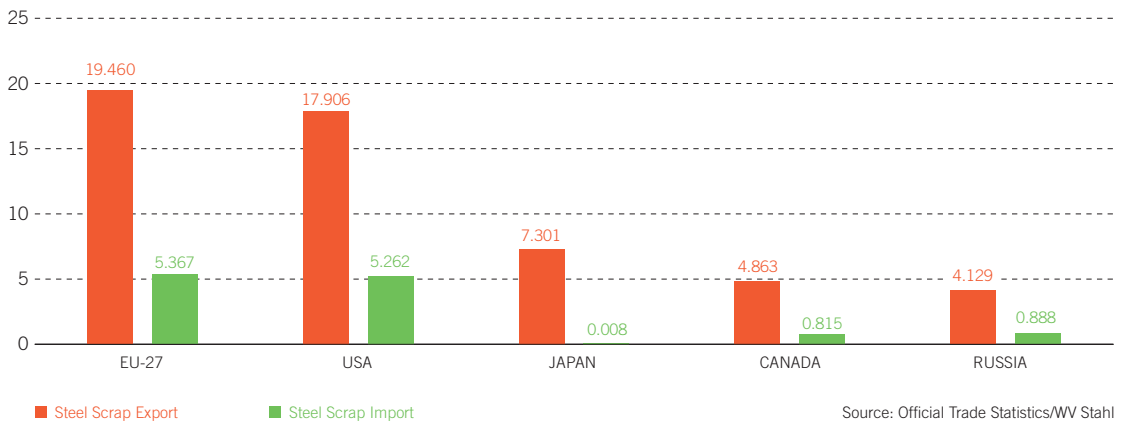
MAIN STEEL SCRAP EXPORTERS (MILLION TONNES)

	2017	2018	2019	2020	2021	% 2021/ 2020
EU-28/27	20.085	21.656	21.750	17.449	19.460	+11.5
USA	15.016	17.332	17.685	16.874	17.906	+6.1
UK*				6.829	8.287	+21.4
Japan	8.208	7.402	7.651	9.371	7.301	-22.1
Canada	4.409	5.107	4.369	4.512	4.863	+7.8
Russia	5.320	5.591	4.099	4.728	4.140	-12.4
Australia	1.979	1.968	2.325	2.083	2.224	+6.9
Singapore	0.790	0.775	0.759	0.506	0.685	+35.4

* Brexit

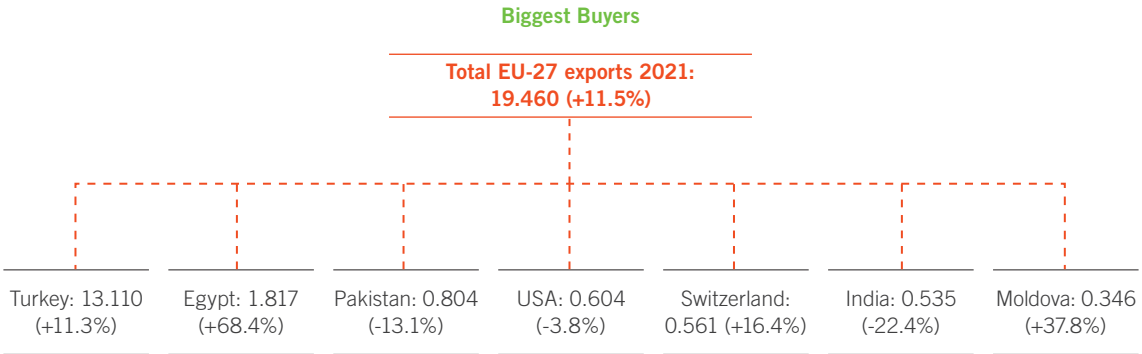
Source: Official Trade Statistics/WV Stahl

MAJOR NET STEEL SCRAP EXPORTERS 2021 (MILLION TONNES)



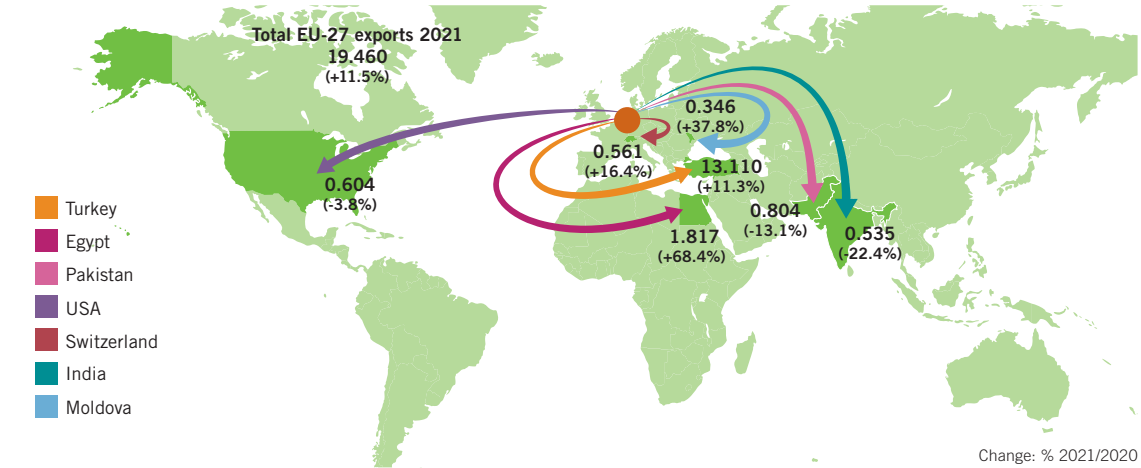
Source: Official Trade Statistics/WV Stahl

EU-27 STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF **EU-27** STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

EU-27 EXTERNAL STEEL SCRAP EXPORTS BY COUNTRY (MILLION TONNES)

Steel Scrap Exports by Main EU-27 Exporters to Third Countries

Exporters	2021	2020	% Change	Biggest Buyers	2021	% Change
Netherlands	4.687	4.007	+17.0	Turkey	3.185	+0.9
				Egypt	0.635	-
				USA	0.320	+19.4
				India	0.133	-10.1
Belgium	3.141	3.061	+2.6	Turkey	1.673	+0.5
				Egypt	1.158	+10.4
				Pakistan	0.159	+14.4
Romania	1.396	1.305	+7.0	Turkey	1.049	-0.4
				Moldova	0.345	+37.5
Germany	1.276	1.228	+3.9	Turkey	0.718	+17.0
				Switzerland	0.324	+9.1
				Pakistan	0.102	-30.1
				India	0.069	-
France	1.014	0.948	+7.0	Turkey	0.722	+17.0
				Switzerland	0.126	+18.5
				India	0.061	-
Sweden	0.795	0.956	-16.8	Turkey	0.283	-18.4
				Norway	0.196	-4.9
				USA	0.147	-34.4
Bulgaria	0.568	0.406	+40.0	Turkey	0.460	+42.0
EU-27 Extra Trade	**19.460**	**17.449**	**+11.5**			

Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

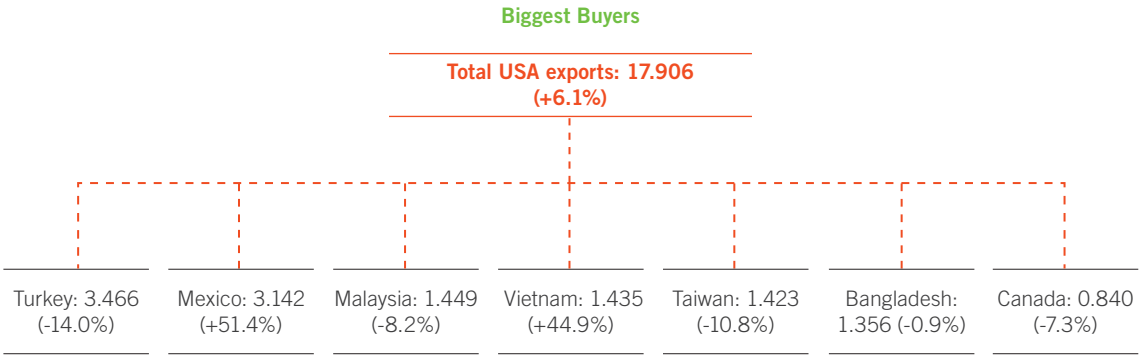
EU-27 INTERNAL STEEL SCRAP EXPORTS BY COUNTRY (MILLION TONNES)

Main Steel Scrap Exports between EU-27 Countries

Exporters	2021	2020	% Change	Biggest Buyers	2021	% Change
Germany	7.214	7.186	+0.4	Netherlands	1.873	+5.3
				Italy	1.569	-2.1
				Belgium	1.109	-7.9
				Luxembourg	1.030	+7.5
France	6.098	5.187	+17.6	Belgium	1.869	+24.5
				Spain	1.861	+17.0
				Luxembourg	0.856	+9.6
				Italy	0.706	+19.1
Netherlands	2.934	2.352	+24.7	Germany	1.277	+37.2
				Belgium	0.700	+19.5
				Spain	0.338	+31.0
Czech Rep.	2.353	2.166	+8.5	Germany	1.060	+10.2
				Italy	0.494	+21.1
				Austria	0.341	+32.7
Poland	1.931	1.432	+34.8	Germany	0.914	+36.8
				Czech Rep.	0.360	+23.3
Austria	1.286	1.079	+19.2	Italy	0.717	+6.7
				Germany	0.401	+54.2
Belgium	1.089	1.014	+7.4	France	0.436	+8.1
				Netherlands	0.319	+16.4
				Luxembourg	0.215	+7.5
EU-27 Intra Trade	**29.328**	**25.603**	**+14.5**			

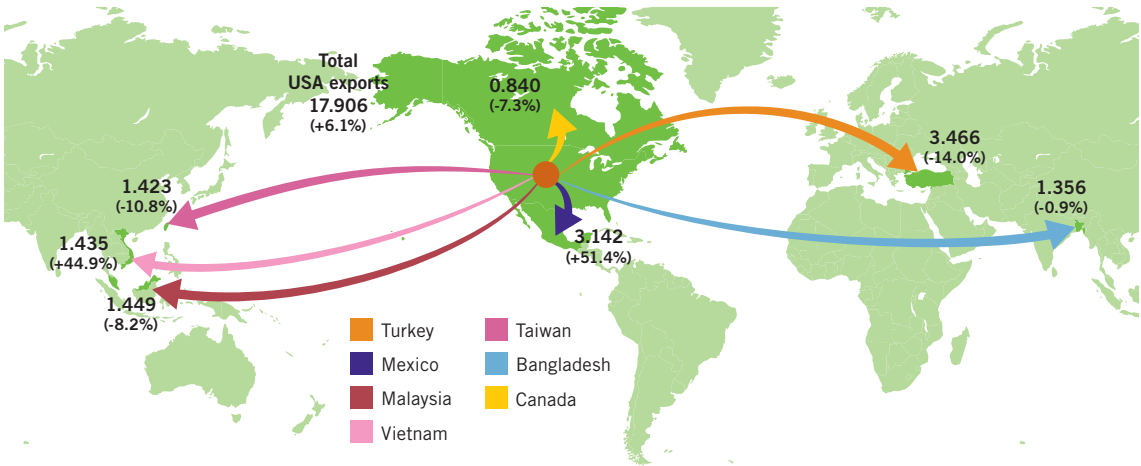
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

US STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF US STEEL SCRAP EXPORTS 2020 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

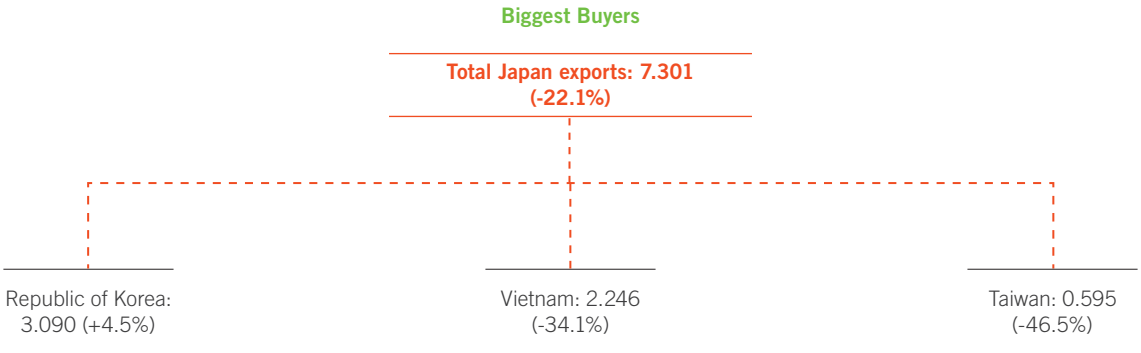
UK STEEL SCRAP EXPORTS 2021 (MILLION TONNES)

Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF UK STEEL SCRAP EXPORTS 2021 (MILLION TONNES)

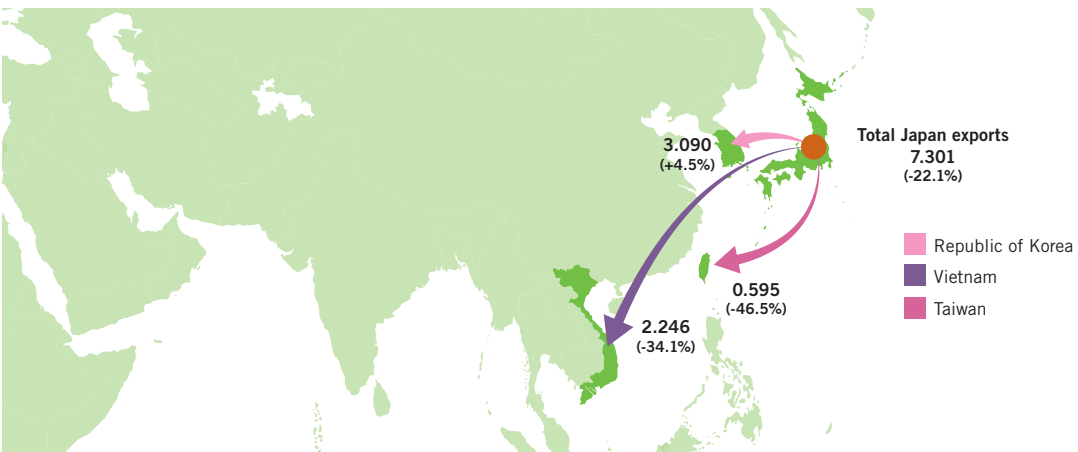
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

JAPAN STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



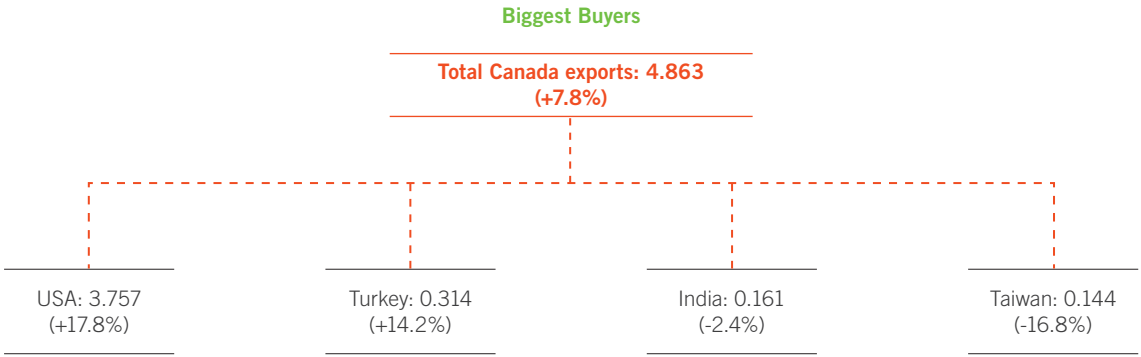
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF JAPANESE STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



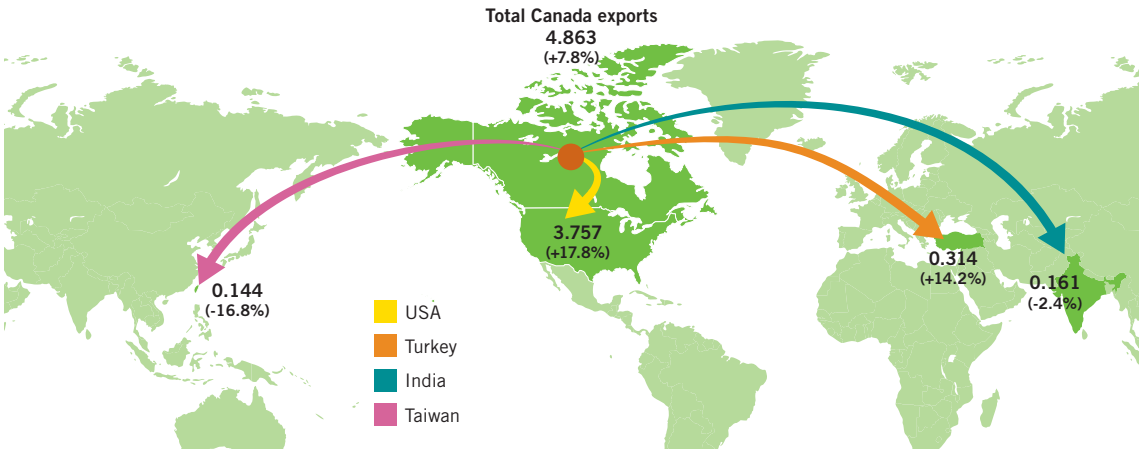
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

CANADA STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



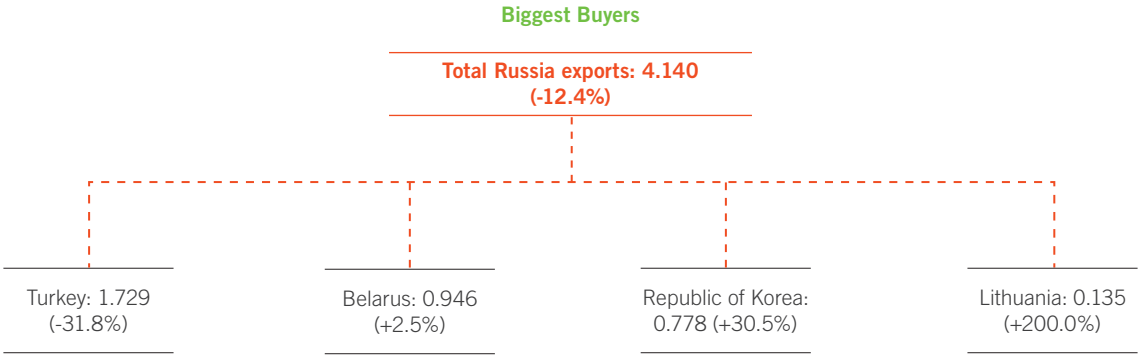
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF CANADIAN STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



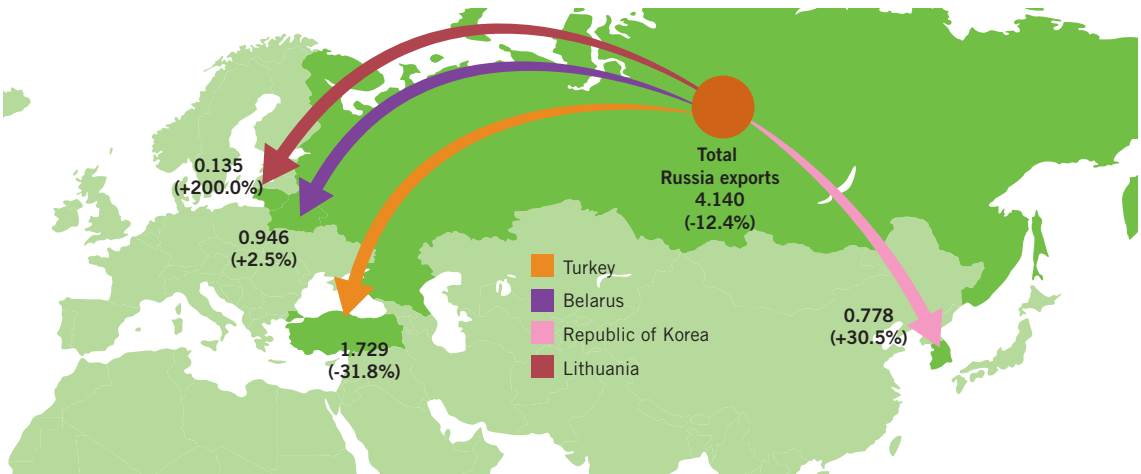
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

RUSSIA STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



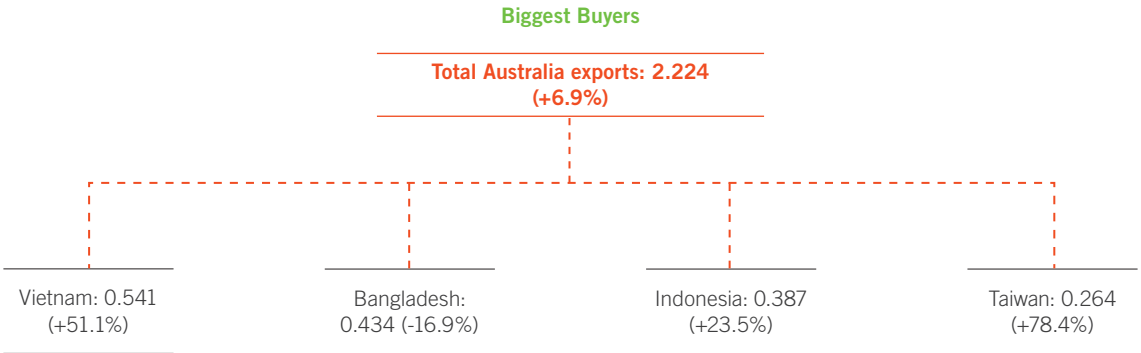
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF RUSSIAN STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



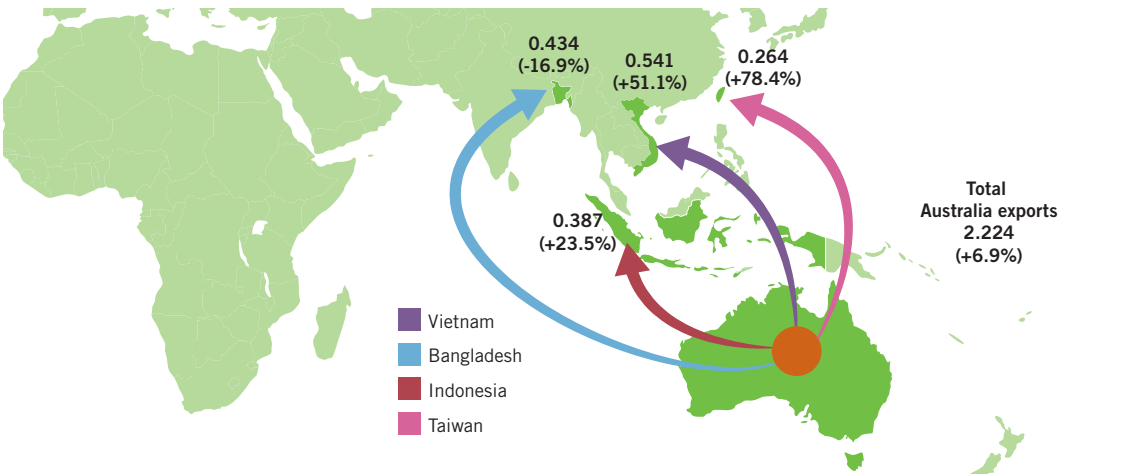
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

AUSTRALIA STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



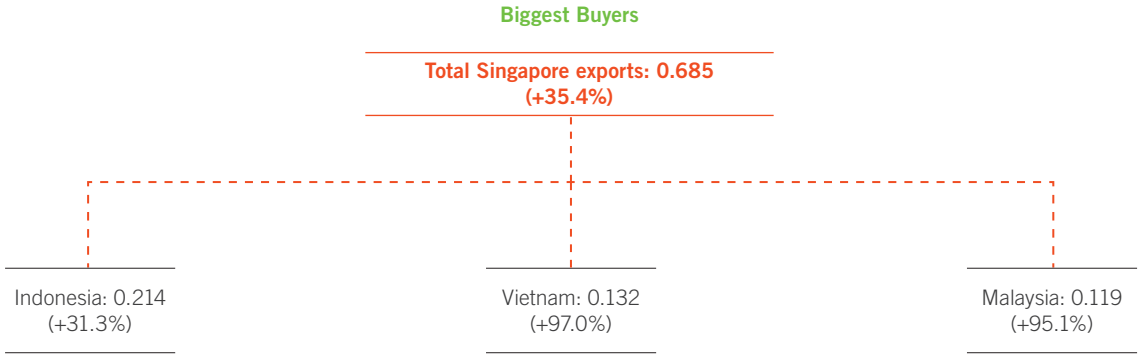
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

MAIN FLOWS OF AUSTRALIAN STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



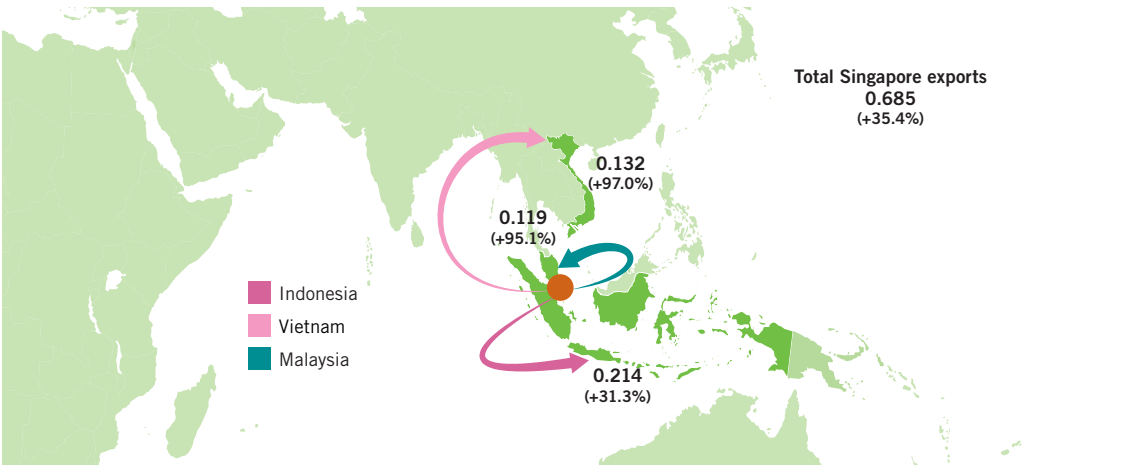
Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

SINGAPORE STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

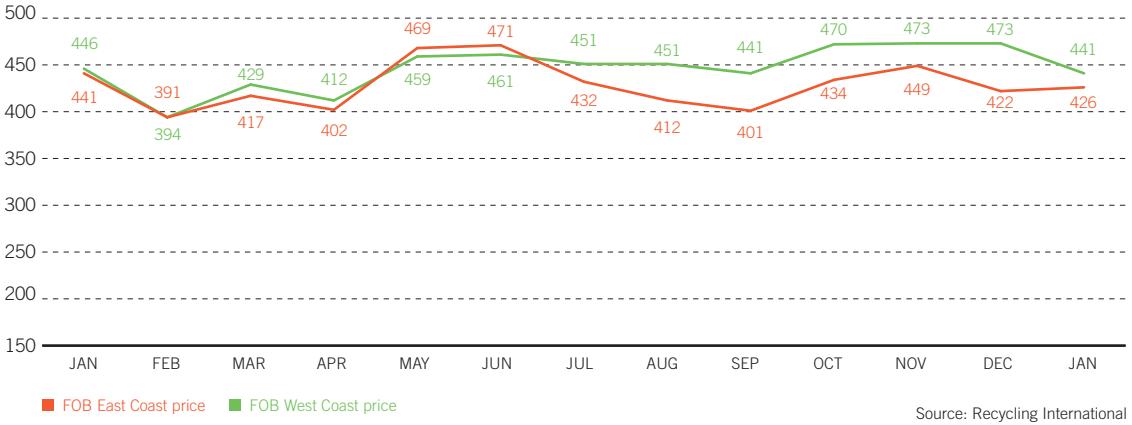
MAIN FLOWS OF SINGAPORE STEEL SCRAP EXPORTS 2021 (MILLION TONNES)



Change: % 2021/2020
Source: Official Trade Statistics/WV Stahl

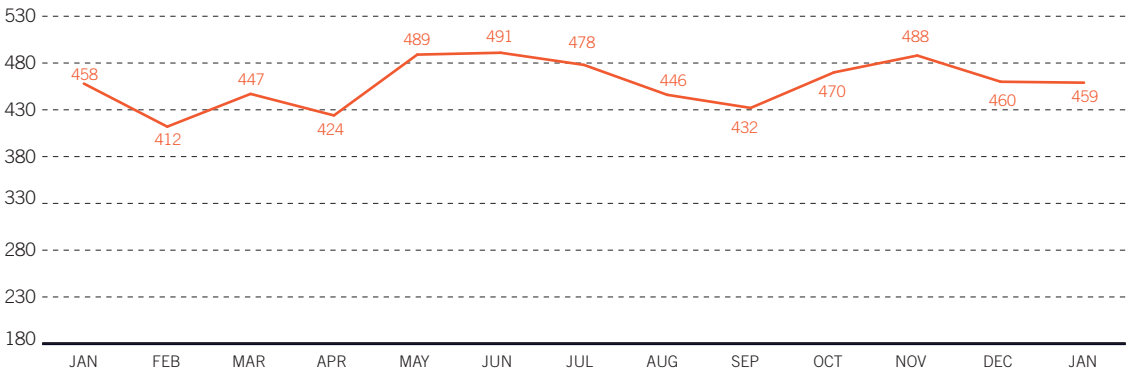
STEEL SCRAP PRICE CURVES JANUARY 2021/2022

USA Export Price (US$/GRT)
HMS 1, heavy steel scrap (1/4 Inch)



Source: Recycling International

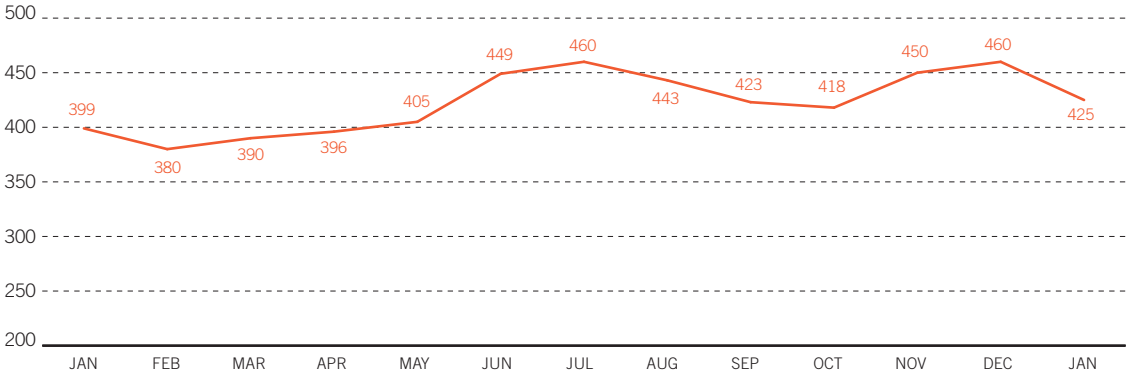
CFR Prices for shipments from EU to Turkey (US$/t)
HMS 80/20, heavy steel scrap



Source: Recycling International

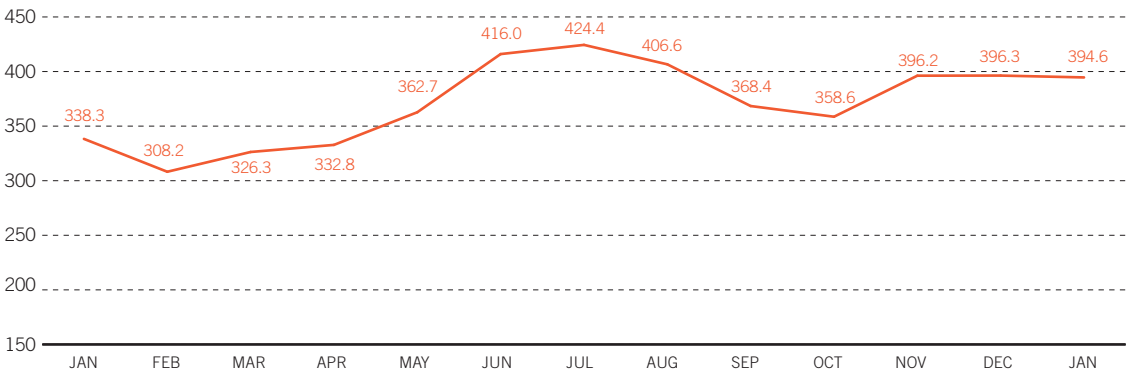
STEEL SCRAP PRICE CURVES JANUARY 2021/2022

USA Domestic Scrap Prices (US$/GRT)
HMS 1, heavy steel scrap (1/4 Inch) composite price delivered at mills



Source: Recycling International

Composite Sales Price ex Yard in Germany* (€/t)
E3/European Standard Quality No. 3, heavy old steel scrap (>6mm)
* Composite sales price considers sales to domestic and international steel works and foundries on weighted average basis
Source: BDSV/SecureCalc



Source: Recycling International

GLOSSARY

BIR	Bureau of International Recycling, Brussels, Belgium
BDG	German Foundry Association, Düsseldorf, Germany
BDSV	German Steel Recycling Federation, Düsseldorf, Germany
CAMU	China's Association of Metalscrap Utilization, Beijing, China
EuRIC	European Recycling Industries' Confederation, Brussels, Belgium
EUROFER	European Confederation of Iron and Steel Industries, Brussels, Belgium
ISRI	Institute of Scrap Recycling Industries, Washington, USA
CARI	Canadian Association of Recycling Industries, Ottawa, Canada
KOSA	Korea Iron & Steel Association, Seoul, Republic of Korea
METI	Ministry of Economy, Trade and Industry, Tokyo, Japan
Modern Casting	Magazine for Foundries and Diecasters, Schaumburg, Illinois, USA
Official Trade Statistics	Prepared by WV Stahl, Düsseldorf, Germany
Recycling International	International Trade Magazine, Doetinchem, The Netherlands
RUSLOM	National Recycling Association of Russia, Moscow, Russia
TCUD	Turkish Steel Producers Association, Ankara, Turkey
USGS	U.S. Geological Survey, Reston, USA
worldsteel	World Steel Association, Brussels, Belgium
WV Stahl	German Steel Federation, Düsseldorf, Germany

BIR – THE GLOBAL FEDERATION OF RECYCLING INDUSTRIES

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