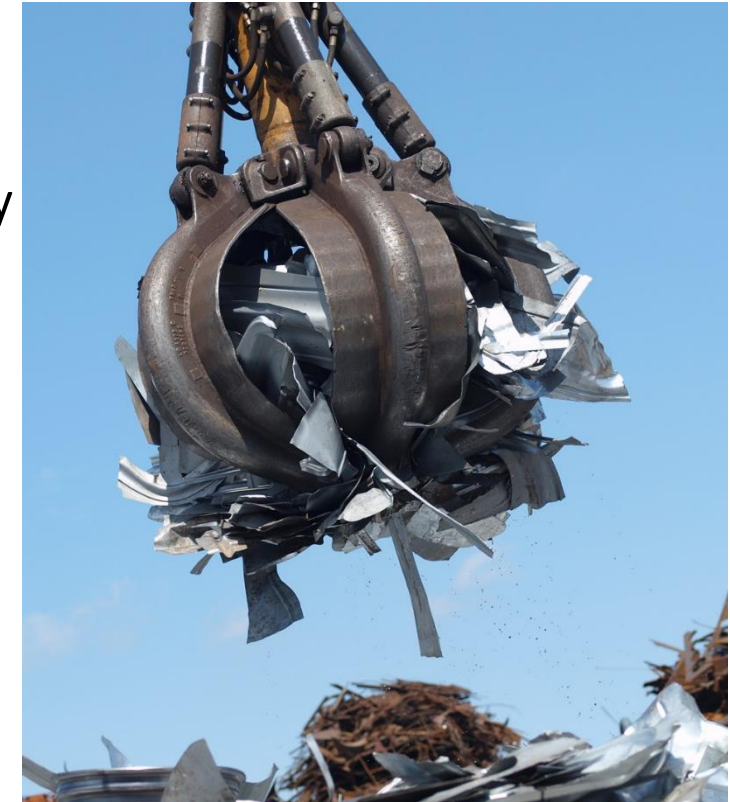


# **REWIMET-Symposium**

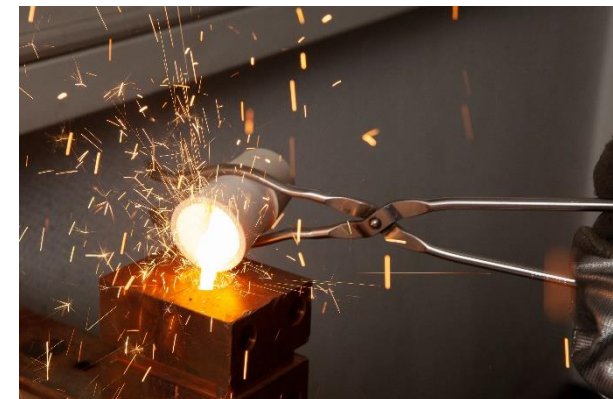
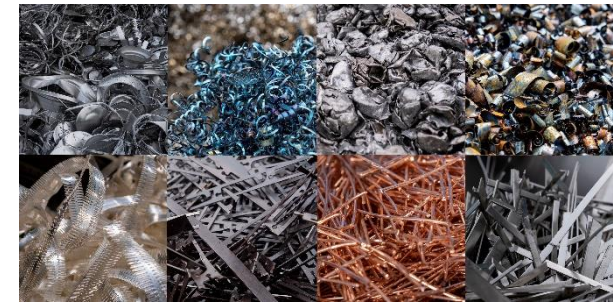
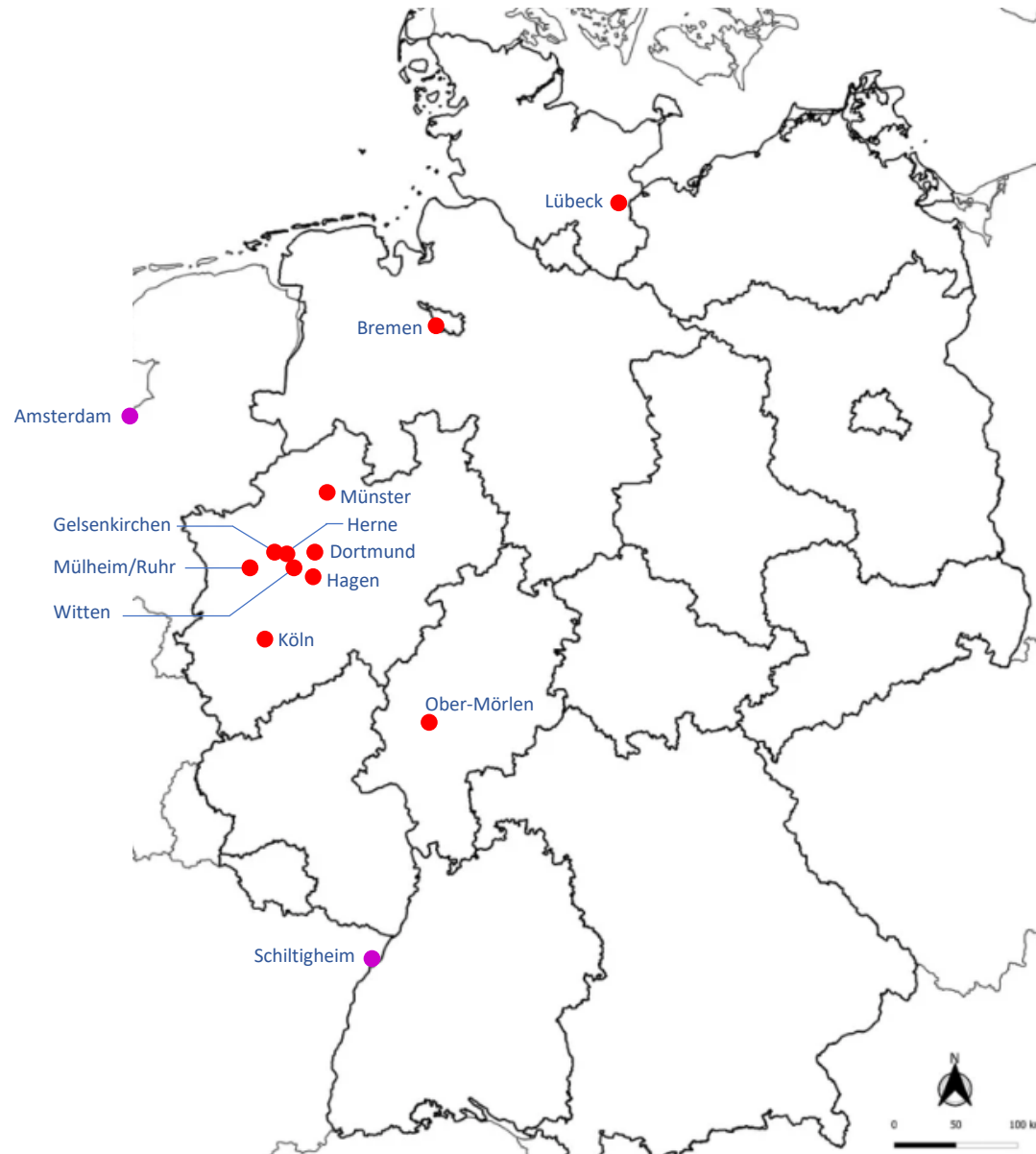
# **Ressourcenmanagement 2023**

**24. August 2023**

- Metals recycler in Germany with 10 sites + 1 export/import facility
- Approx. 2 million tons of scrap metals (NF/FE) processed and traded annually
- Sales approx. EUR 800 million
- Carbon neutral where savings versus virgin material recycling is taken into account
- Certified for DIN ISO 14001 / 9001 / 45001 / 50001/EfB
- Diverse activities in recycling of non-ferrous as well as ferrous metals
- Headquarter in Mülheim/Ruhr
- Approx. 300 employees in 15 companies belonging to the group
- Family owned (Dr. Arend Oetker Holding / Bötzel Holding / Josef Heckner Holding / Udo Meynerts)



- Amsterdam (NL)
- Bremen
- Dortmund
- Gelsenkirchen
- Hagen
- Herne
- Köln
- Lübeck
- Mülheim an der Ruhr
- Münster
- Ober-Mörlen
- Schiltigheim (F)
- Witten



# Main steel scrap exporting countries (million tons)

	2018	2019	2020	2021	2022	% 2022/ 2021
<b>EU-28/27</b>	21.656	21.750	17.449	19.431	17.596	-9.4
<b>USA</b>	17.332	17.685	16.874	17.906	17.478	-2.4
<b>UK</b>	*	*	6.829	8.287	8.241	-0.6
<b>Japan</b>	7.402	7.651	9.371	7.301	6.307	-13.6
<b>Canada</b>	5.107	4.369	4.512	4.863	4.664	4.1
<b>Australia</b>	1.968	2.325	2.083	2.224	1.867	-16.1
<b>Mexico</b>	787	842	718	737	822	+11.5
<b>Singapore</b>	775	759	506	685	722	+5.4

\* Brexit

Source: Official Trade Statistics/WV Stahl  
 BIR Global & Figures Ferrous Metals 2022

# Annual volume of scrap dispatch in Germany as well as worldwide consumption/use in steel works and foundries

The annual volume of scrap being dispatched in Germany amounts to approx. 26.7 Million tons (excluding the circular steel scrap of the steel mills treated/used by themselves)

- Purchase of steel mills: 14,6 million tons
- Purchase of foundries: 3,6 million tons
- Export: 8,6 million tons (which can be considered surplus material at present)
- Import: 4,3 million tons

Source: BDSV - 2019

Worldwide consumption: The worldwide annual consumption of scrap iron in the steel industry and foundries is around 670 million tons

Source: Wikipedia - 2021

# Main steel scrap importing countries (million tons)

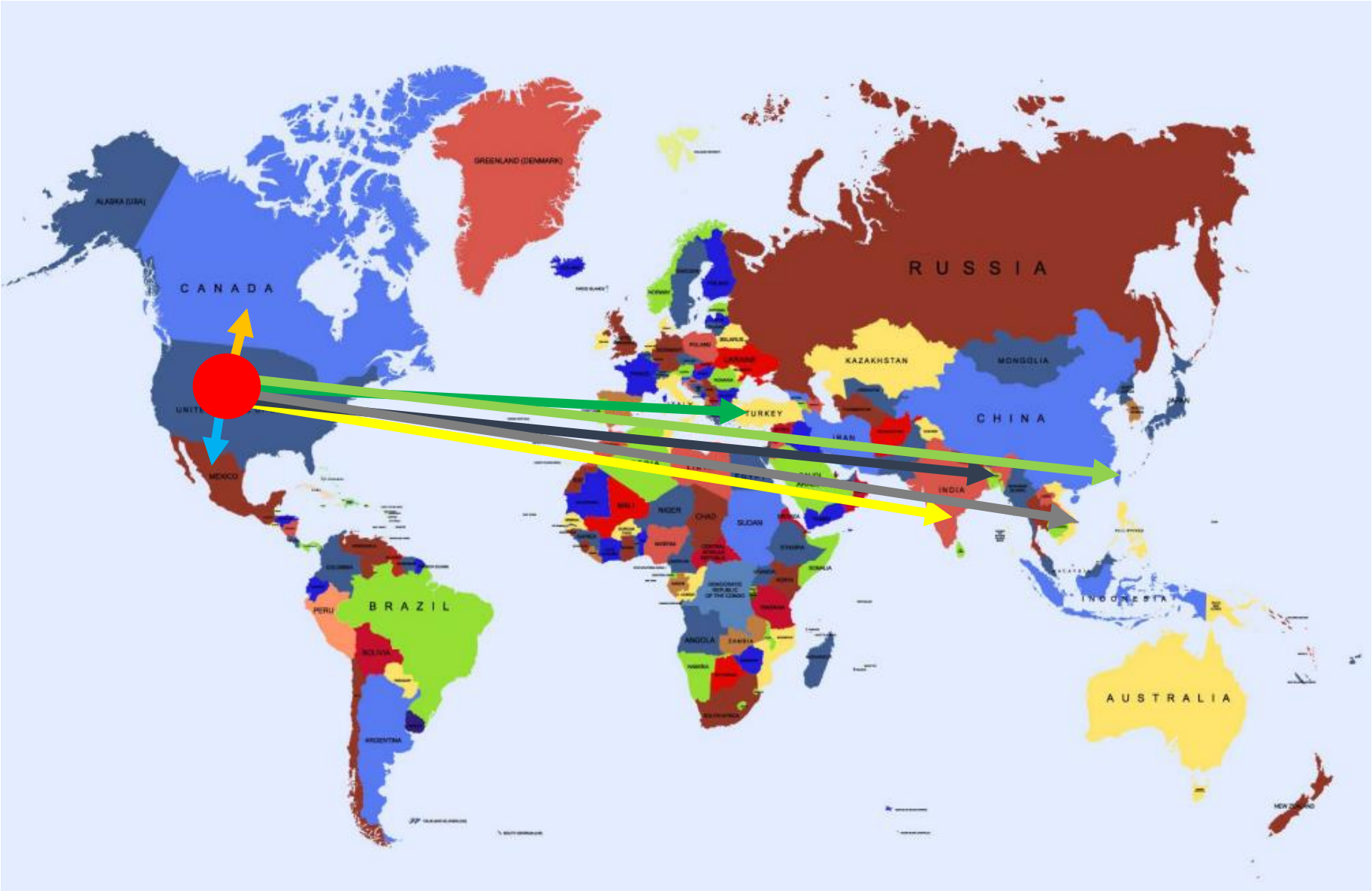
	2018	2019	2020	2021	2022	% 2022/ 2021
<b>Turkey</b>	20.660	18.857	22.435	24.992	20.876	-16.5
<b>India</b>	6.320	7.053	5.383	5.133	8.376	+63.2
<b>USA</b>	5.030	4.268	4.512	5.262	4.720	-10.3
<b>Korea Rep.</b>	6.393	6.495	4.398	4.789	4.689	-2.1
<b>EU-28/27*</b>	2.828	2.893	4.094	5.367	3.901	-29.4
<b>Mexico</b>	1.913	1.283	2.126	2.820	2.940	+4.3
<b>Taiwan</b>	2.919	3.629	3.523	3.616	2.890	-6.4
<b>Thailand</b>	1.724	1.094	1.401	1.653	1.764	+6.7
<b>Indonesia</b>	2.510	2.614	1.420	1.462	1.200	-17.9
<b>Canada</b>	3.471	2.129	1.031	815	1.084	+33.0
<b>Malaysia</b>	960	1.532	1.396	1.533	496	-67.6

\* EU 27 since 2020

- Price Arbitrage between certain regions or countries
- Arisings of scrap differs due to change of production levels in the industry
- Environmental standards are newly defined or export license for scrap is required
- Taxes and dues on exported scrap (s.a. in Russia EUR 100/mt on steel scrap)
- Cost Price on Scrap Substitutes such as DRI/HBI/Pig Iron are cheaper
- Crisis such as war or energy shortages with rising costs
- Cheap semi-finished Products such as billets/slabs are being „dumped“ on the international markets
- Domestic Transportation versus transportation as bulk per vessel



# Main flows of US recycled steel exports 2022 (million tons)



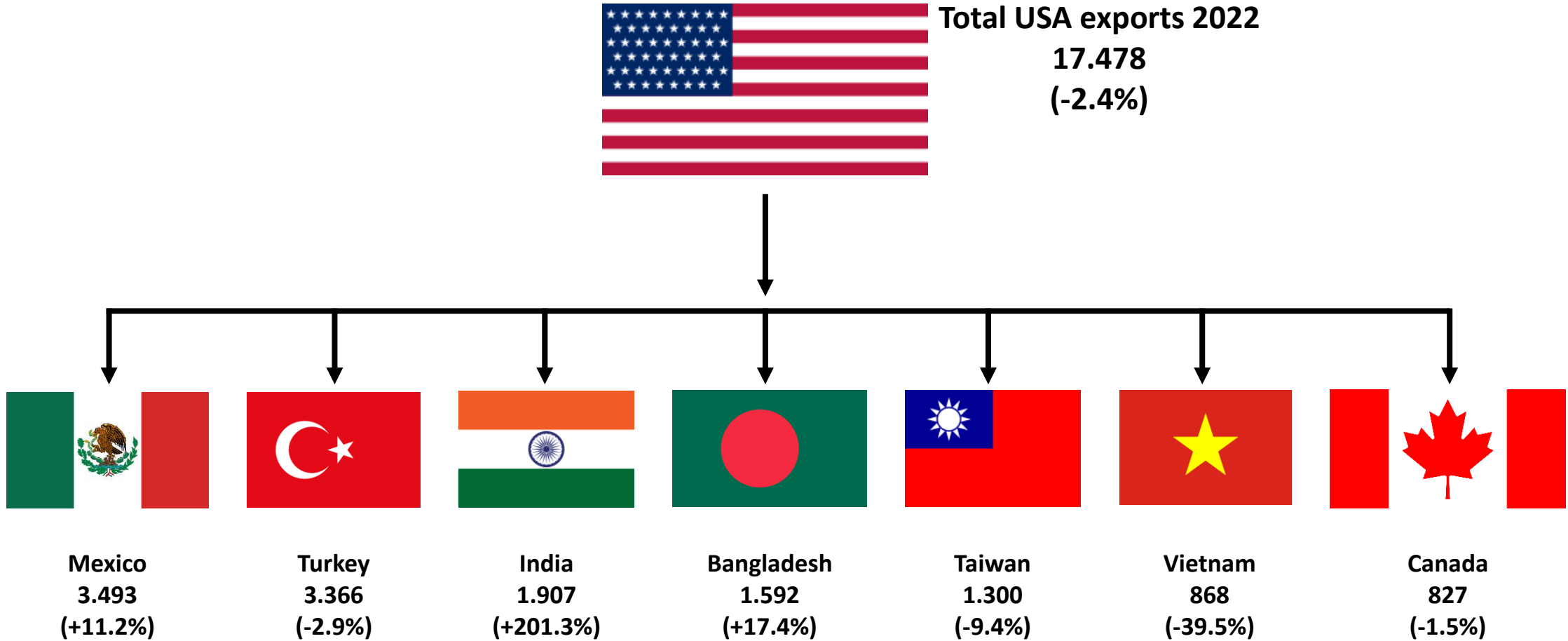
Total USA  
exports 2022: 17.478 (-2.4%)

Mexico:	3.493 (+11.2%)
Turkey:	3.366 (-2.9%)
India:	1.907 (+201.3%)
Bangladesh:	1.592 (+17.4%)
Taiwan:	1.300 (-9.4%)
Vietnam:	868 (-39.5%)
Canada:	827 (-1.5%)

Source: Official Trade Statistics/WV Stahl  
BIR Global & Figures Ferrous Metals 2022



# Main flows of US recycled steel exports 2022 (million tons)

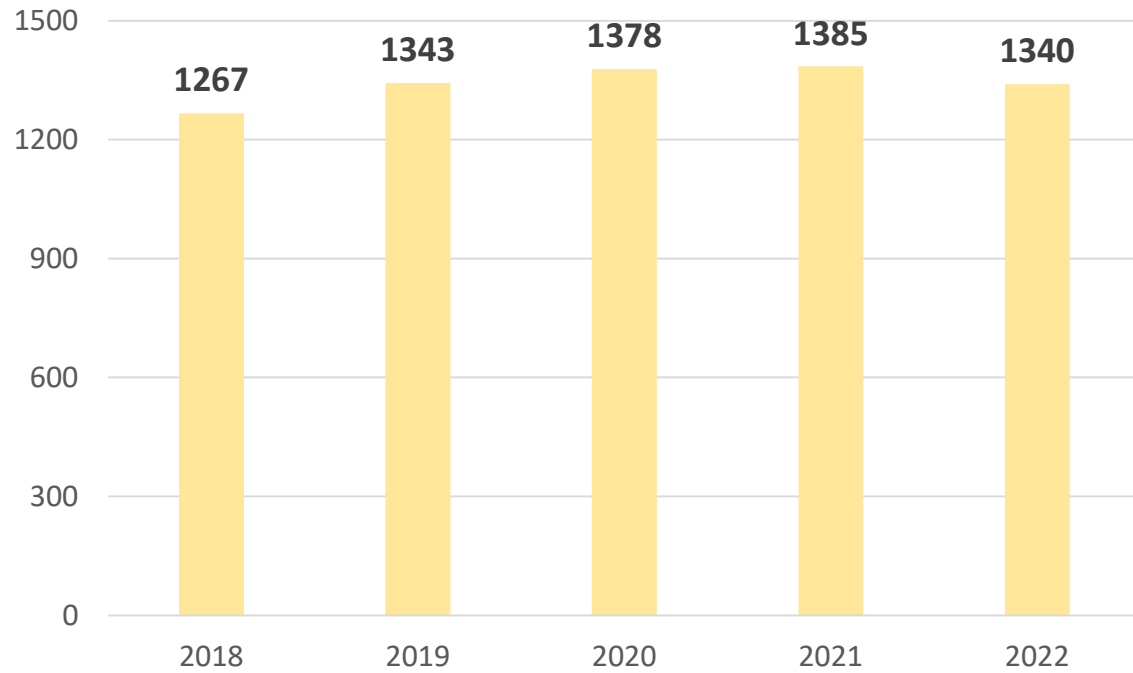


Source: Official Trade Statistics/WV Stahl  
BIR Global & Figures Ferrous Metals 2022

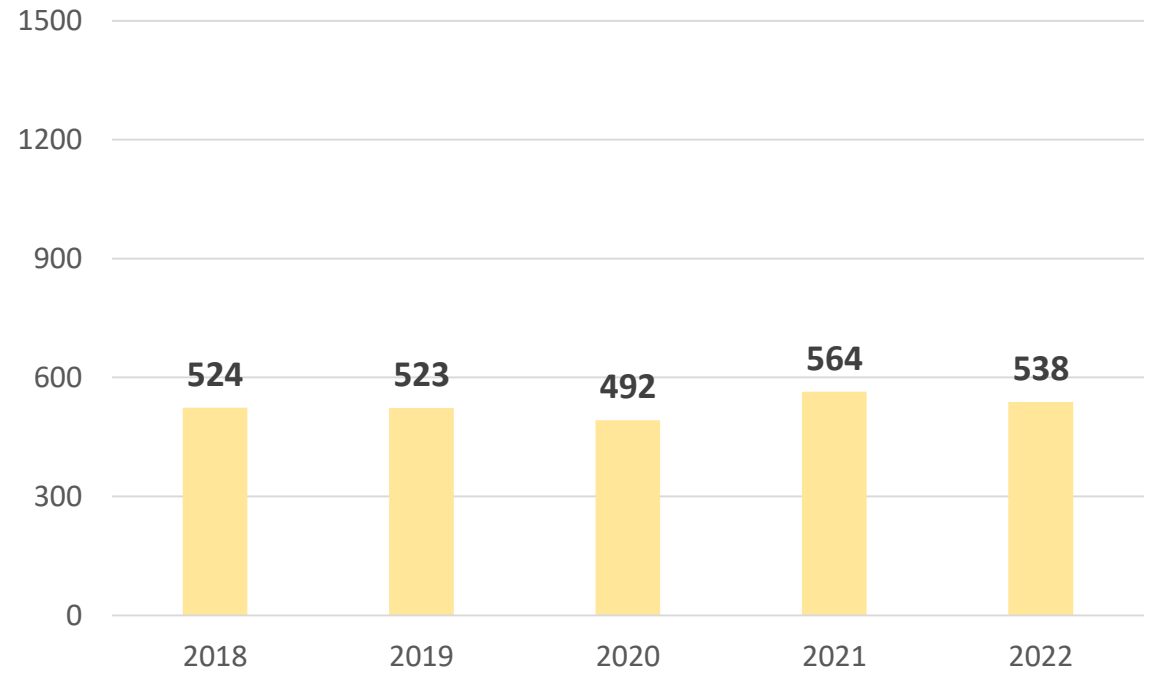
# World BOF – basic oxygen furnace production (million tons)

# World EAF – electric arc furnace production (million tons)

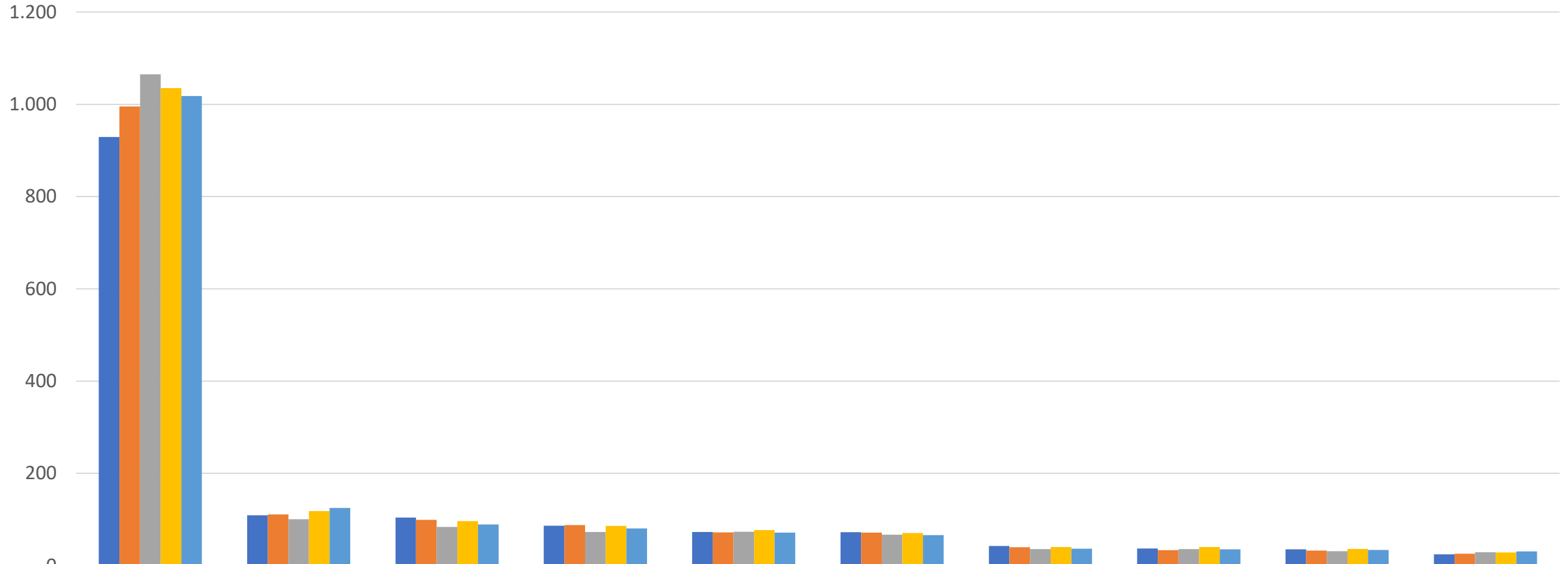
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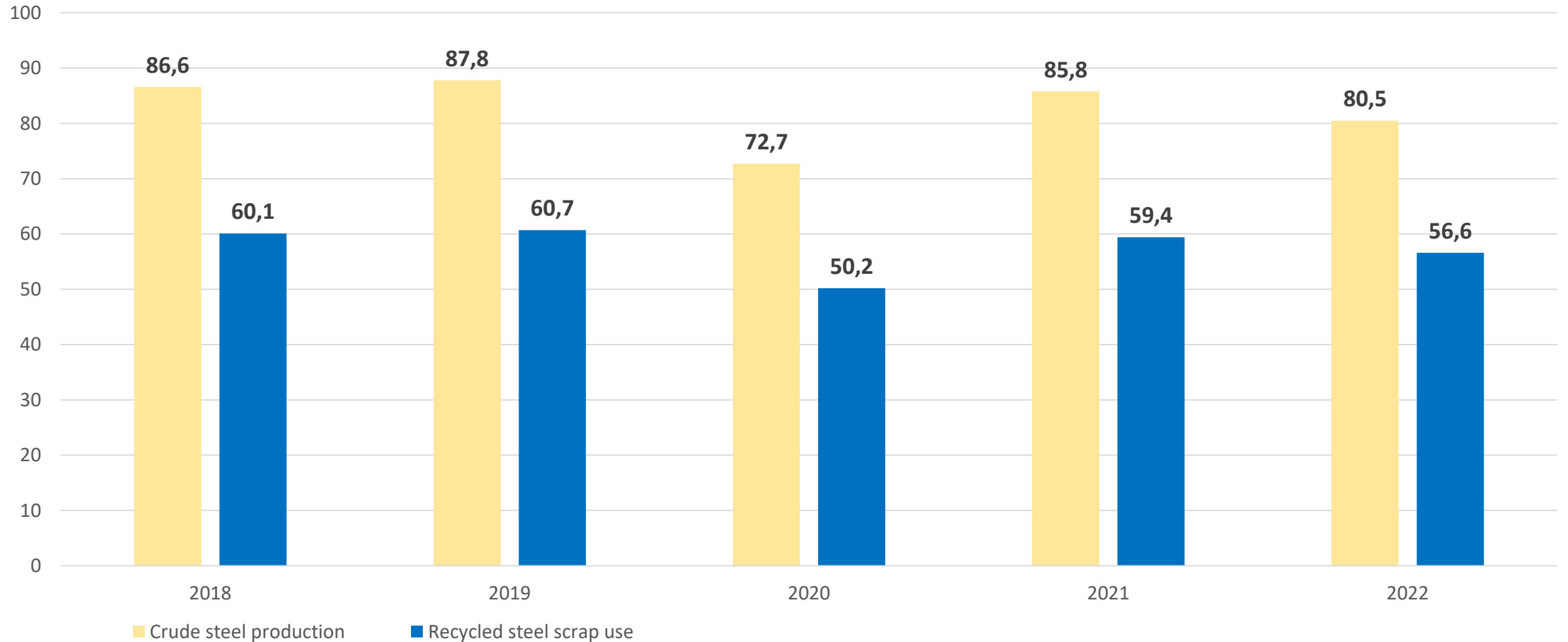


# The 10 largest steel-producing countries (million tons)

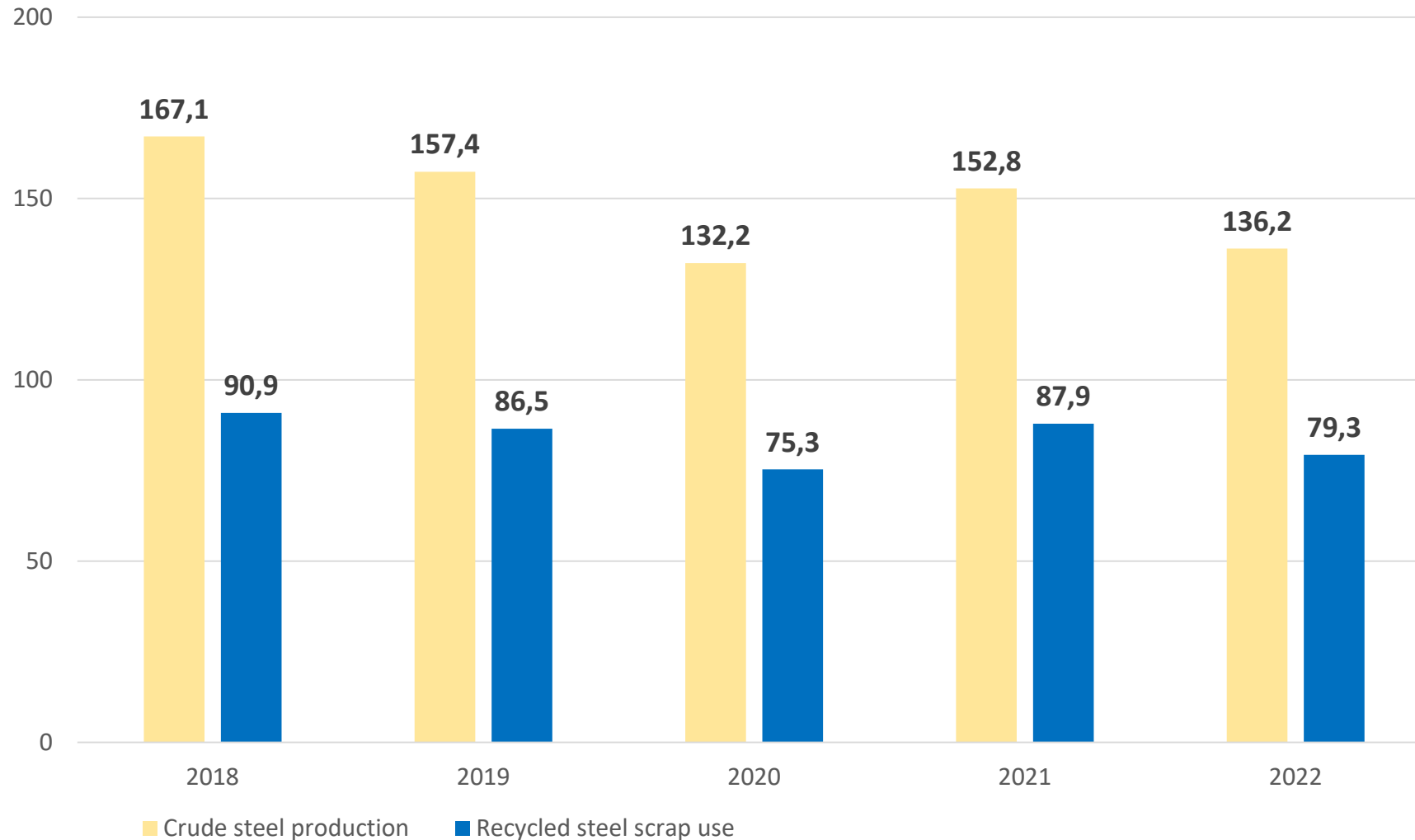


	China	India	Japan	USA	Russia	Republic of Korea	German	Turkey	Brazil	Iran
■ 2018	929,0	109,3	104,3	86,6	72,8	72,5	42,4	37,3	35,4	24,5
■ 2019	995,4	111,1	99,3	87,8	72,0	71,4	39,7	33,7	32,6	25,6
■ 2020	1.064,8	100,3	83,8	72,7	73,3	67,1	35,7	35,8	31,4	29,0
■ 2021	1.035,2	118,2	96,3	85,8	77,0	70,4	40,2	40,4	36,1	28,3
■ 2022	1.018,0	125,1	89,2	80,5	71,5	65,9	36,8	35,1	34,0	30,6

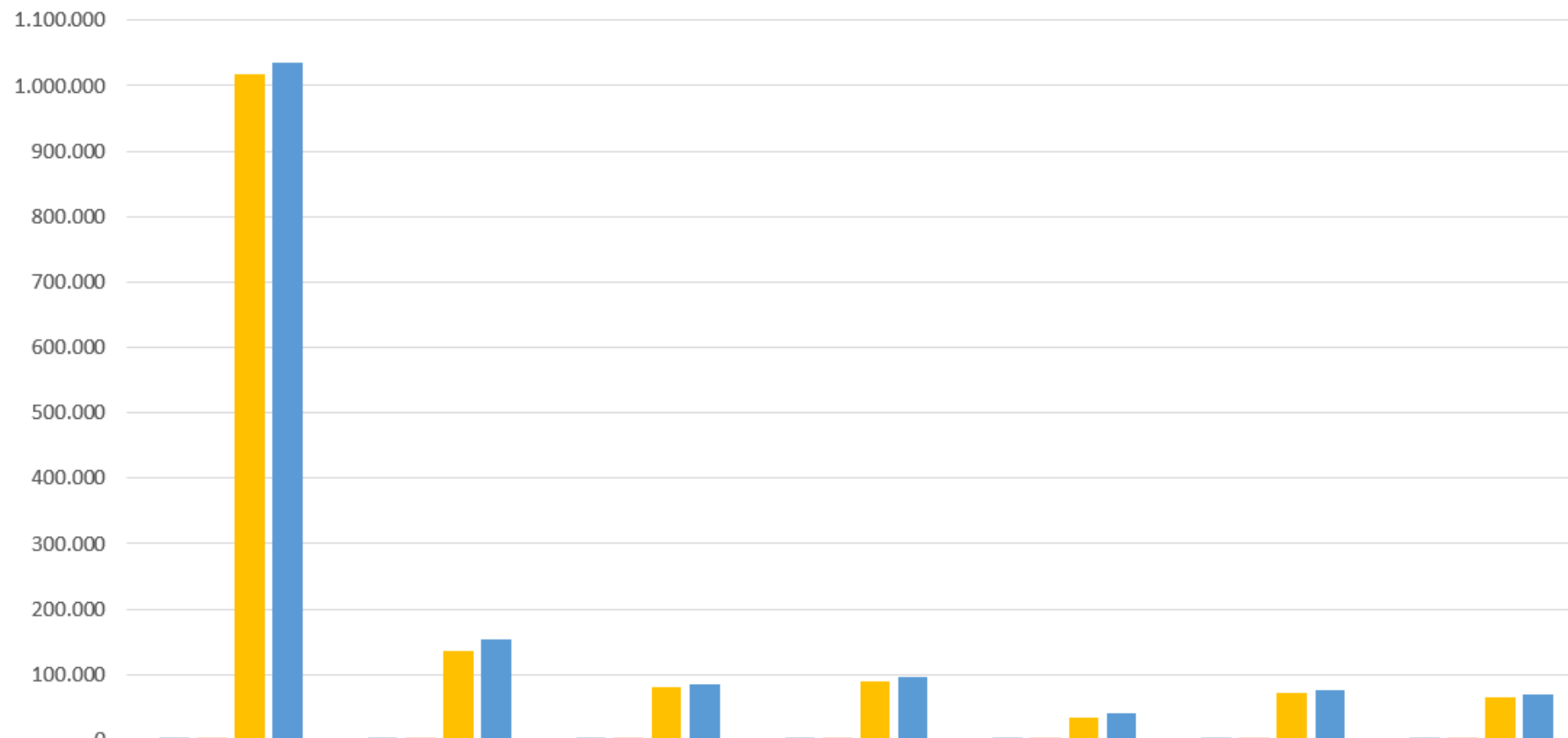
# Recycled steel scrap for steelmaking in the USA (million tons)



# Recycled steel scrap for steelmaking in the EU-28/27 (million tons)



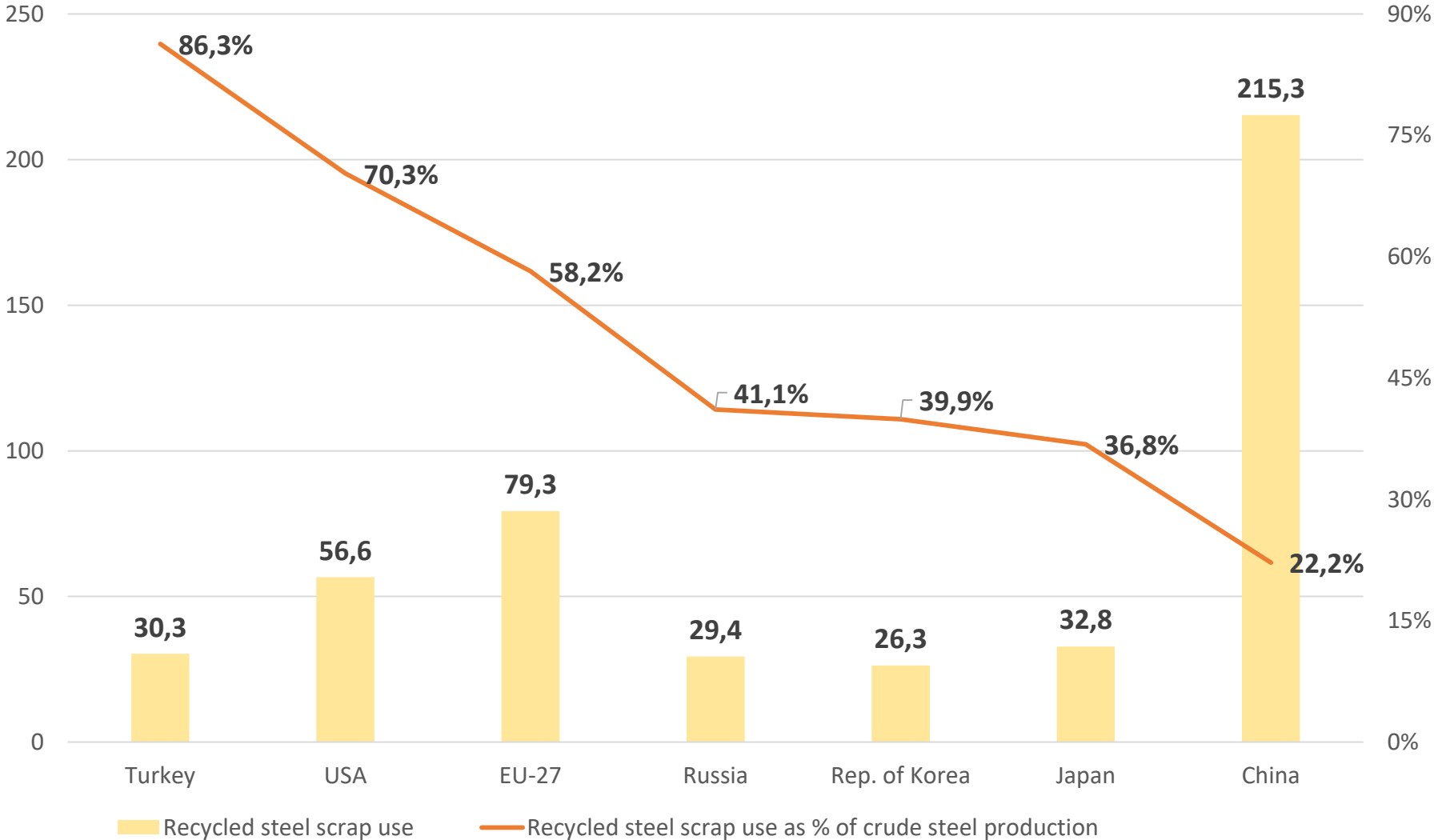
# Recycled steel scrap use and crude steel production in key countries and regions (million tons)



	China	EU-27	USA	Japan	Turkey	Russia	Korea Rep.
■ Recycled steel scrap consumption 2022	215,31	79,35	56,60	32,77	30,27	29,37	26,32
■ Recycled steel scrap consumption 2021	226,21	87,85	59,40	34,75	34,81	32,14	28,30
■ Crude steel production 2022	1.017.959,0	136.221,0	80.535,0	89.238,0	35.134,0	71.469,0	65.865,0
■ Crude steel production 2021	1.035.243,0	152.765,0	85.791,0	96.326,0	40.360,0	77.020,0	70.418,0



# Recycled steel scrap use in crude steel production 2022 (million tons)



Source: BIR Global & Figures Ferrous Metals 2022

- Investments in new steel capacities
- Replacement of steel production by more efficient steel works  
(China is planning to replace 20% of existing, old BOF's by EAF's)
- Most of the BOF capacities in EU (27) will be replaced by EAF's in order to reduce CO2-emission
- „Green steel“ is requested by consumers
- Circular economy „ambitions“ to optimize carbon footprint

 Within approx. next 5 years scrap consumption will be increased to 780 Million tons worldwide  
(Source IKB Deutsche Industriebank research estimation)

- Energy for production of hydrogen to replace LNG (and coal)
- New „Smelting“ technology is not an approved standard
- Variation in energy costs
- Governmental subsidies limited to some extent which leaves high investment costs to producers
- Labor shortage in „old economies“ such as Europe
- Steel consumption in „old economies“ is shrinking
- Variation in environmental standards
- Investments in production requires more digitalization of the industry

- High energy costs reduces costly separation of sandwich materials
- Disposal costs and disposal routing of waste elements in the mix
- Geographical crisis in the world is effecting the supply chain of scrap
- Environmental requirements tend to be risen before pay back of investments into new technologies is proven by the market
- More export regulation limits „free“ and „fair“ price building on the domestic markets – international protectionism
- Stressed profit margins reduces invention and investments in new recycling technologies
- Interest rates increases puts pressure on margins
- High prices for raw materials including scrap requires liquidity
- Steel industry is trying to prolong term of payment with limitations in credit insurance coverage
- Quality requirements by new smelting production plants not yet established
- Consolidation process in the steel industry is forcing consolidation of the recycling industry as well
- Traffic situation is worsening in Europe – lack of railway waggons

**Thank you  
very much!**