Evaluating the implications of the EU Steel Action Plan on steel scrap production and trade

BIR

World Recycling Convention

Warsaw, October 28, 2013

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The EU has published in last June a new Steel Action Plan in response to calls for help from part of the steel industry.

The plan presents a list of measures aimed at alleviating the difficulties of the steel sector, in particular in the regions affected by recent closures, the decline in demand in Southern Europe, and the recurrent threat of cheap steel imports. The plan also mention a possibility to monitor or restrict scrap exports.

"Given the reduced amount of CO_2 in the production of scrap in Europe, non-discriminatory measures justified on environmental grounds could be envisaged, if necessary to address carbon leakage to non EU countries, provided that they do not result directly or indirectly in export restrictions". (COM (2013) 407 pp 11).

Laplace Conseil, an international consultant in metal and mining, is preparing an evaluation of the threat, measuring the potential impact on the scrap collecting and processing industry, so as to prepare an adequate response to the EU proposal.

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Agenda

- Importance of the European EAF steel industry in the EU28
- Impact of EU proposed regulations and trade restrictions
- Reasons why the EU should support greater steel scrap recycling

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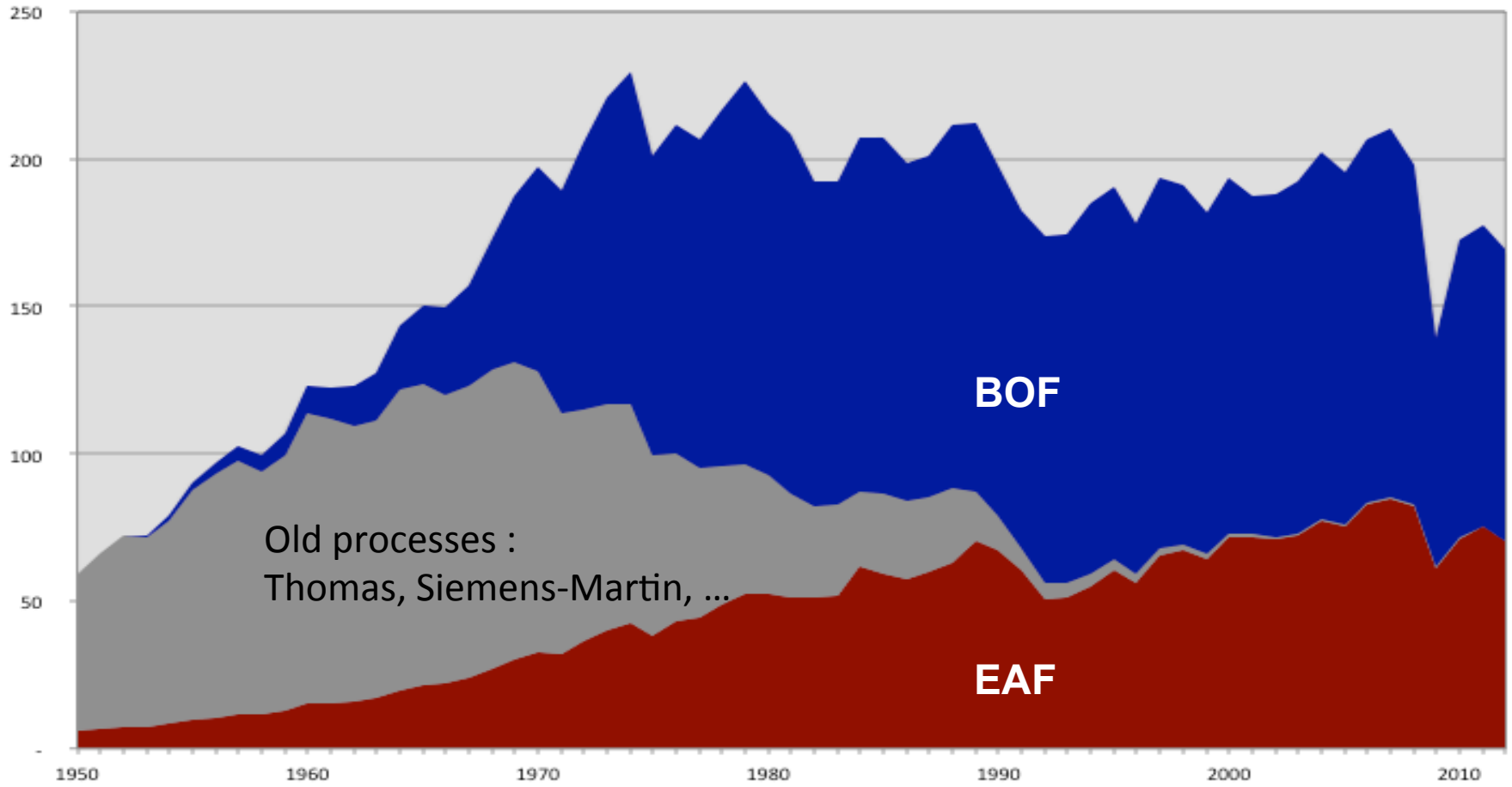
EAF production is steadily growing in EU28 while old processes have been eliminated

Evolution of Crude steel production by process in EU28 (Mt)



Source : Worldsteel Laplace Conseil analysis

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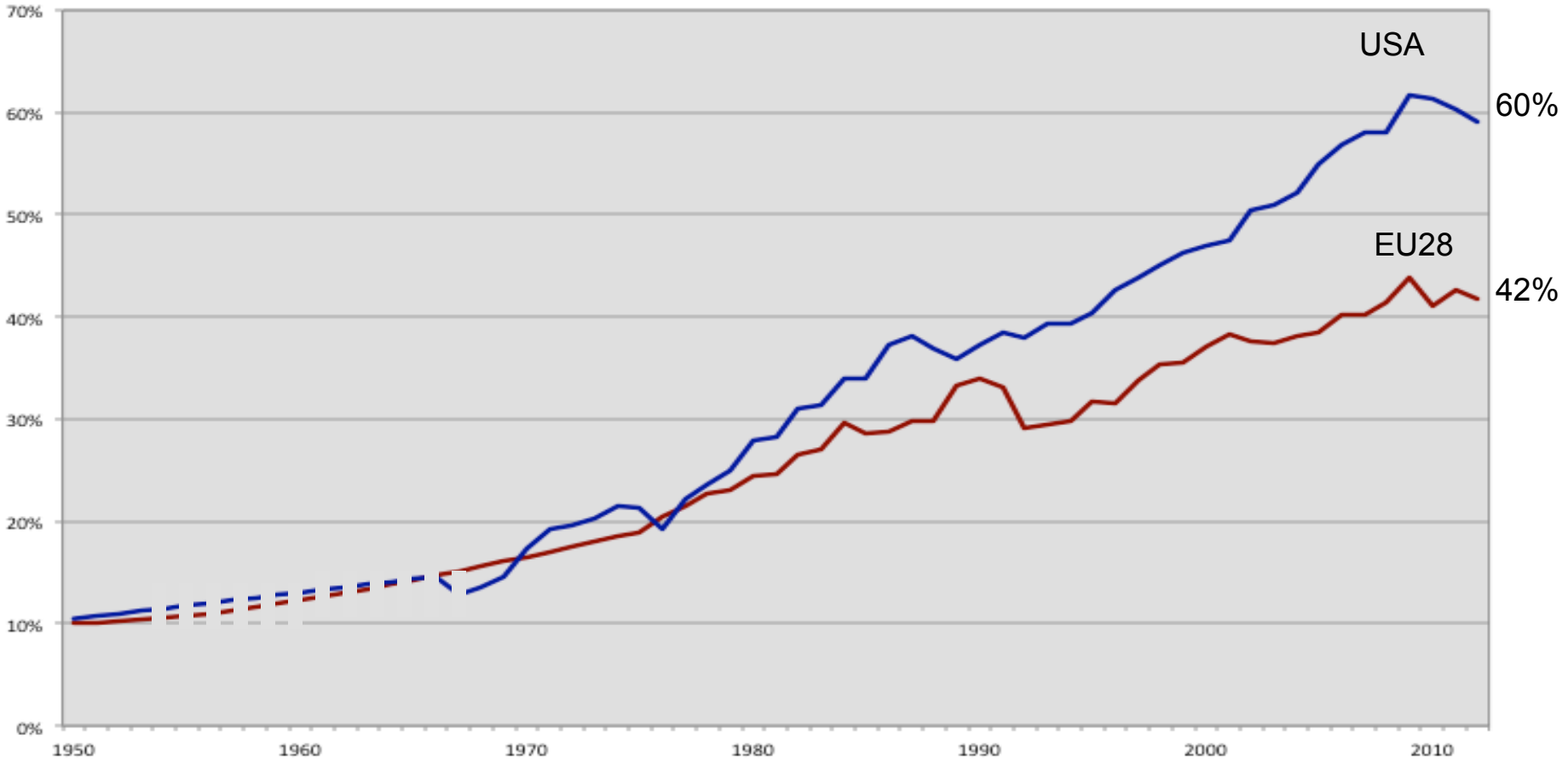
For many decades, the share of EAF steel has grown steadily in Europe and USA

EAF share in crude steel production in EU28 and USA (%)



Source : WorldSteel, Laplace Conseil analysis

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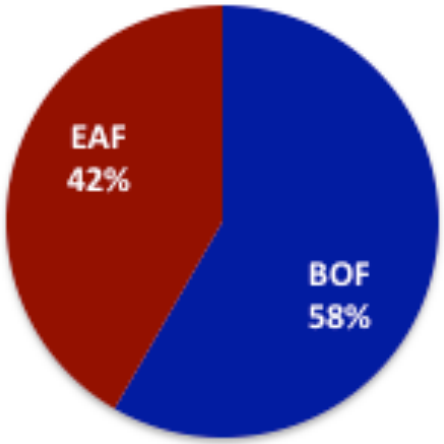
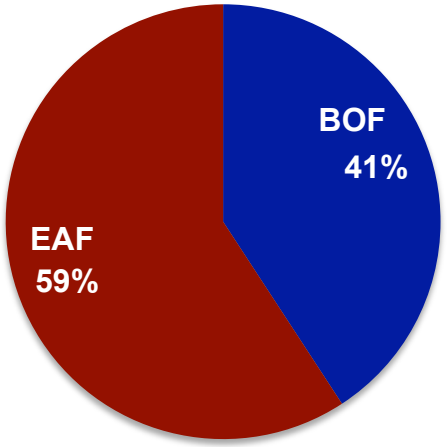
NAFTA mills have switched to EAF for 59% of their production, while EU mills for only 42%

Breakdown of crude steel production by process BF/BOF vs EAF (%)

Europe (28 EU)
100% = 168 Mt



NAFTA
100% = 120 Mt



Source : Worldsteel, Laplace Conseil analysis

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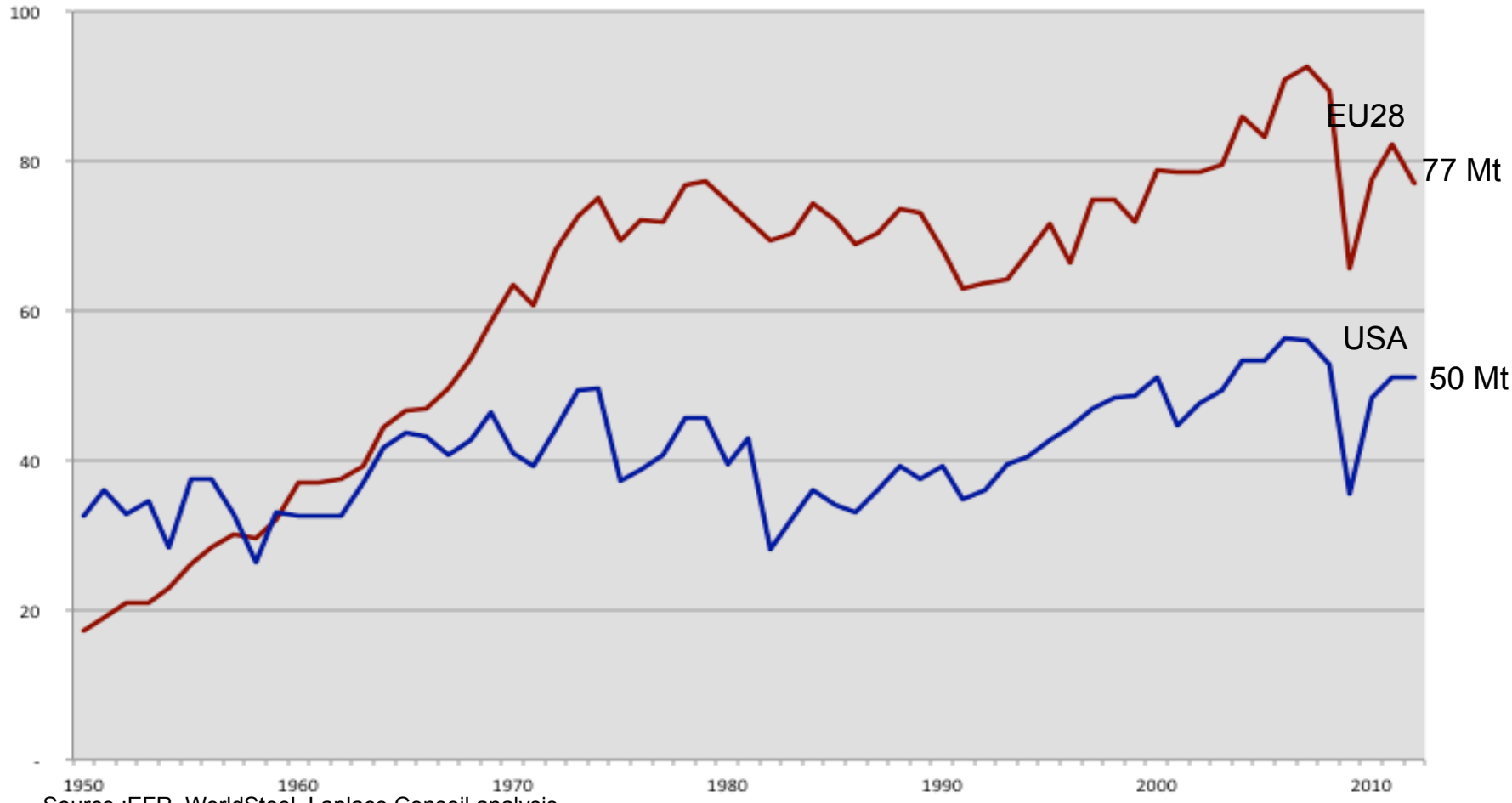
Consequently, the use of steel scrap has steadily increased especially after 1990

Evolution of steel scrap purchases in EU28 and US (Mt)



Source :EFR, WorldSteel, Laplace Conseil analysis

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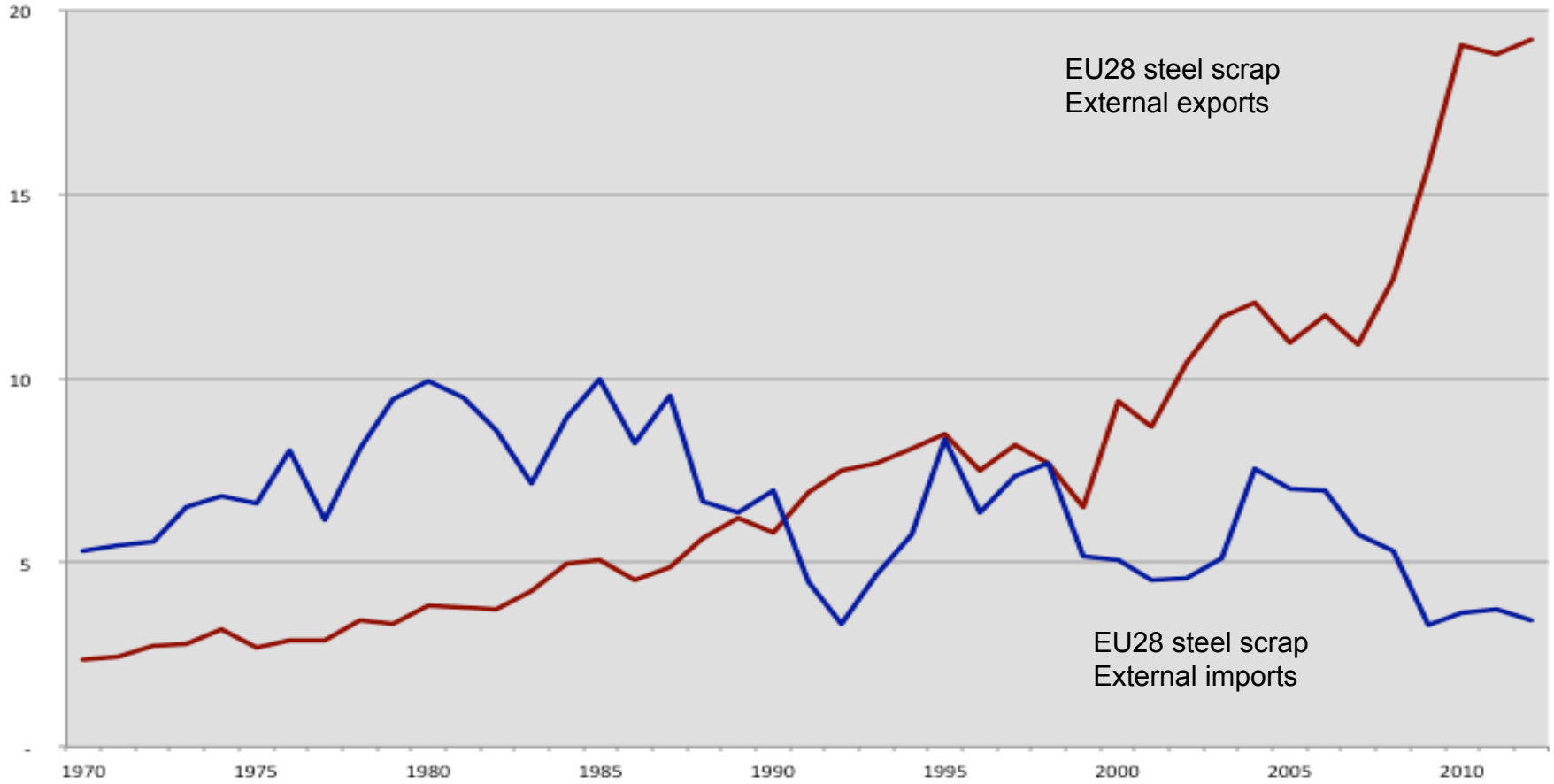
EU28 steel scrap external exports have increased since 1970, while imports have declined for 30 years

Evolution of the steel scrap external import and export in EU28 (Mt)



* External trade is net of intra EU trade, data are estimated prior to 1999

Source : EFR, WorldSteel, Laplace Conseil analysis

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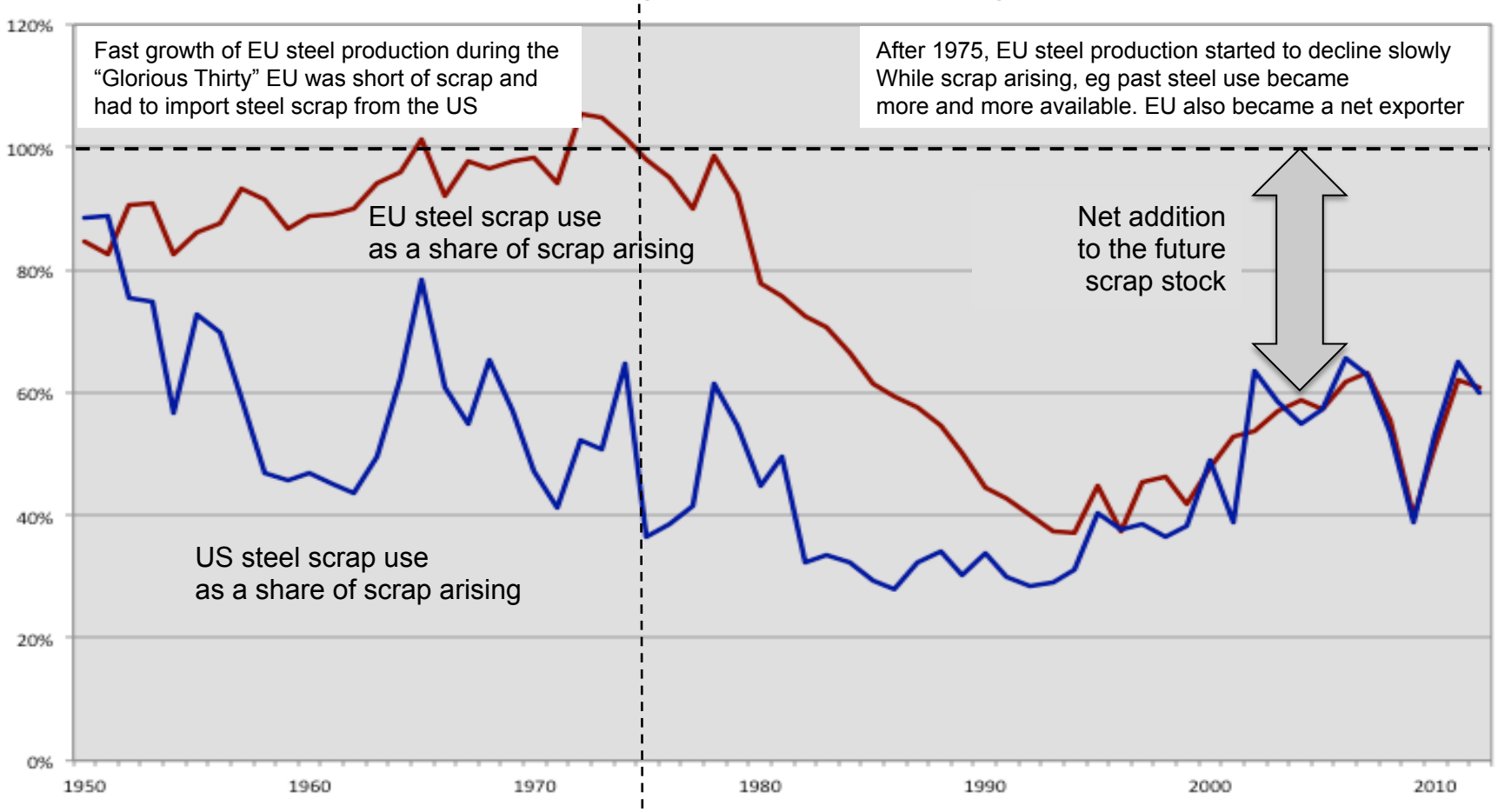
Until 1975, EU used all domestic arising; It was in fact short of scrap and had to import from the US.

Evolution of scrap use as a percentage of steel scrap arising in EU 28 and USA(%)



Source : WorldSteel, Laplace Conseil analysis

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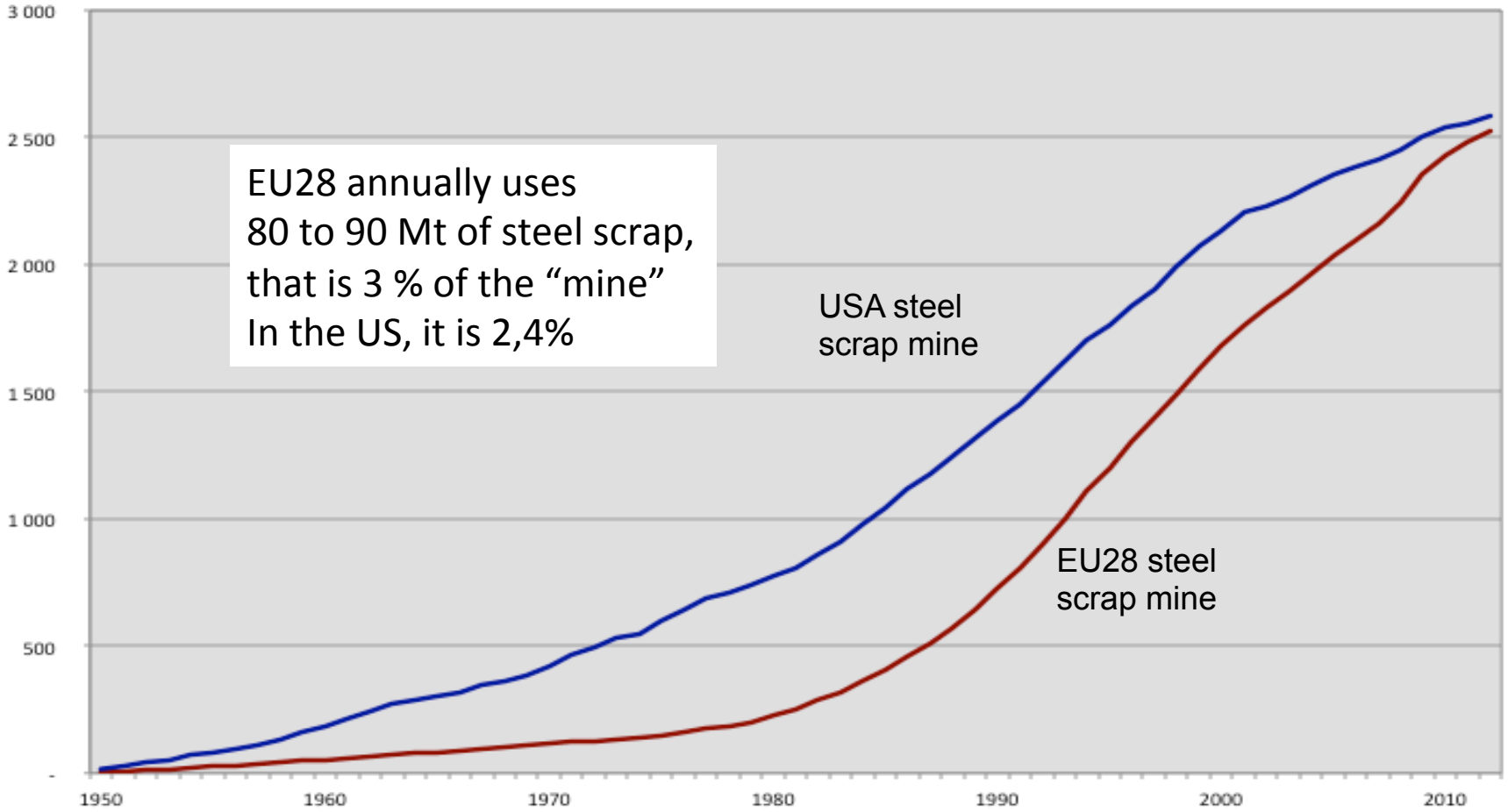
EU28 and USA have accumulated a stock of steel scrap of 2500 Mt for the future, quite a scrap mine !

Growth of the EU28 and USA scrap mines* (Mt)



* The scrap mine is the difference between scrap arising and scrap use net of cumulative losses and uneconomic collection

Source : EFR, WorldSteel, Laplace Conseil analysis

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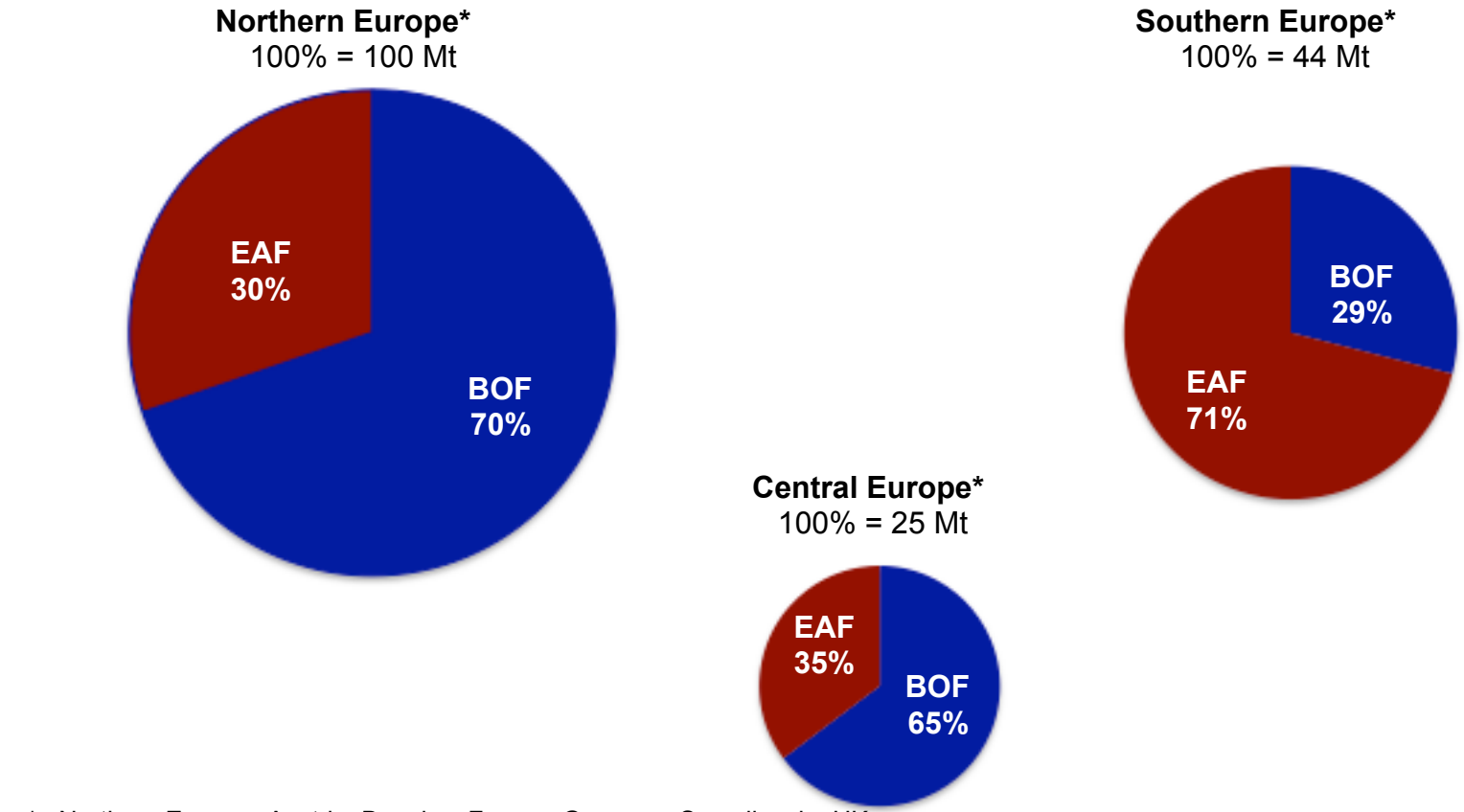
BOF production is more important in Northern and Central Europe than in Southern Europe

Repartition of crude steel production by process in EU28 (Mt and %)



* Northern Europe : Austria, Benelux, France, Germany, Scandinavia, UK;
Central Europe : Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Poland, Romania, Slovak Republic, Slovenia;
Southern Europe : Greece, Italy, Portugal, Spain

Source : Worldsteel, Laplace Conseil analysis

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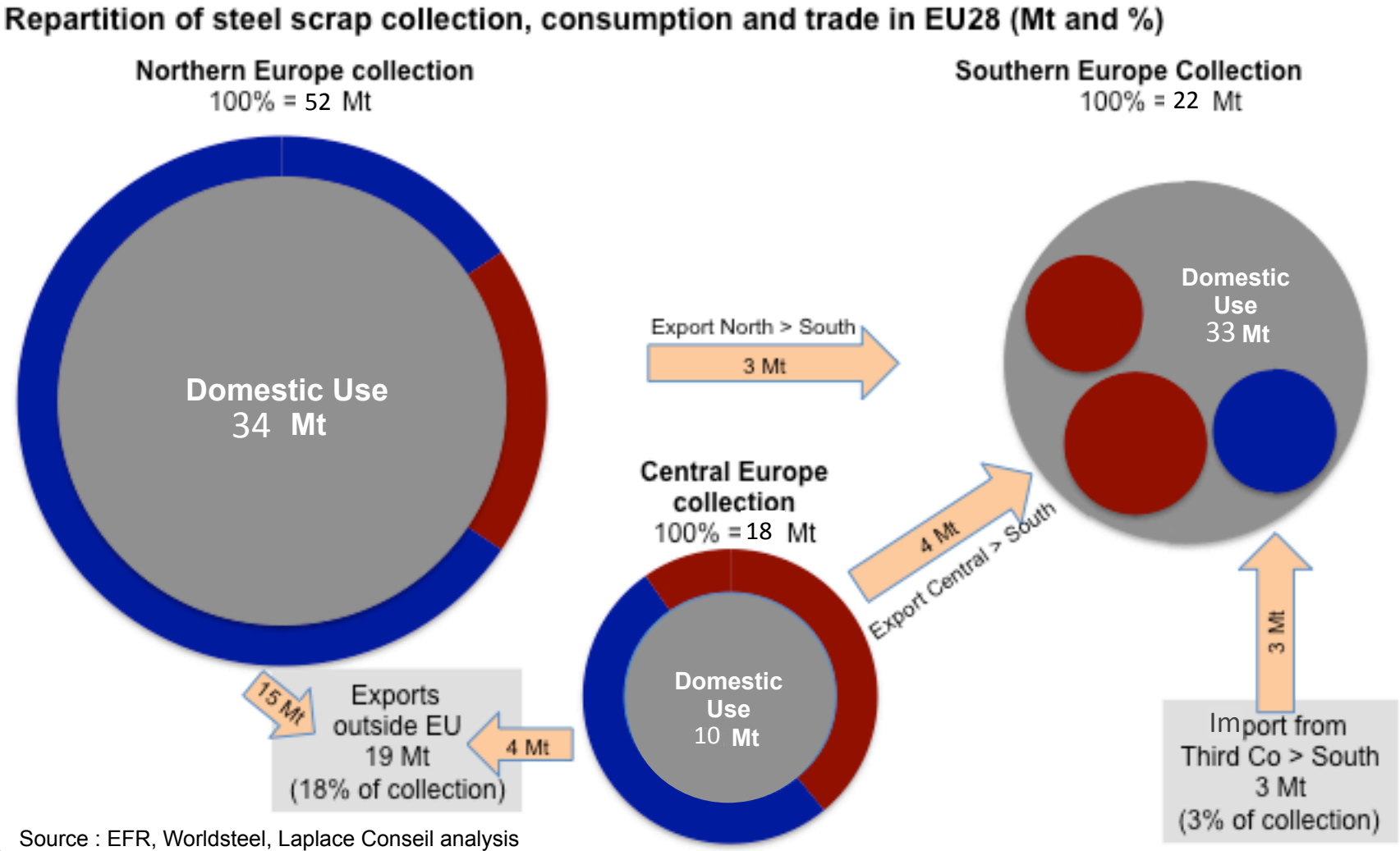
Northern and Central Europe export to Southern Europe and also to third countries



Source : EFR, Worldsteel, Laplace Conseil analysis

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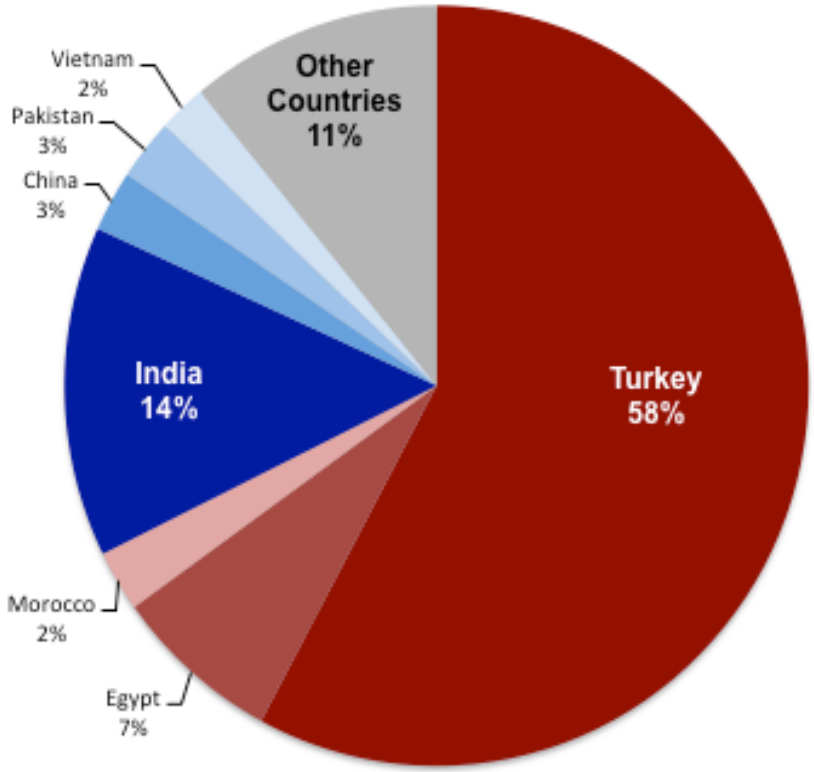
Two thirds of the EU steel scrap exports are sent to the Mediterranean area and 22% to the Far East

Repartition of EU External steel scrap exports in 2012 (100% = 19,2 Mt)



Source : EFR, Laplace Conseil analysis

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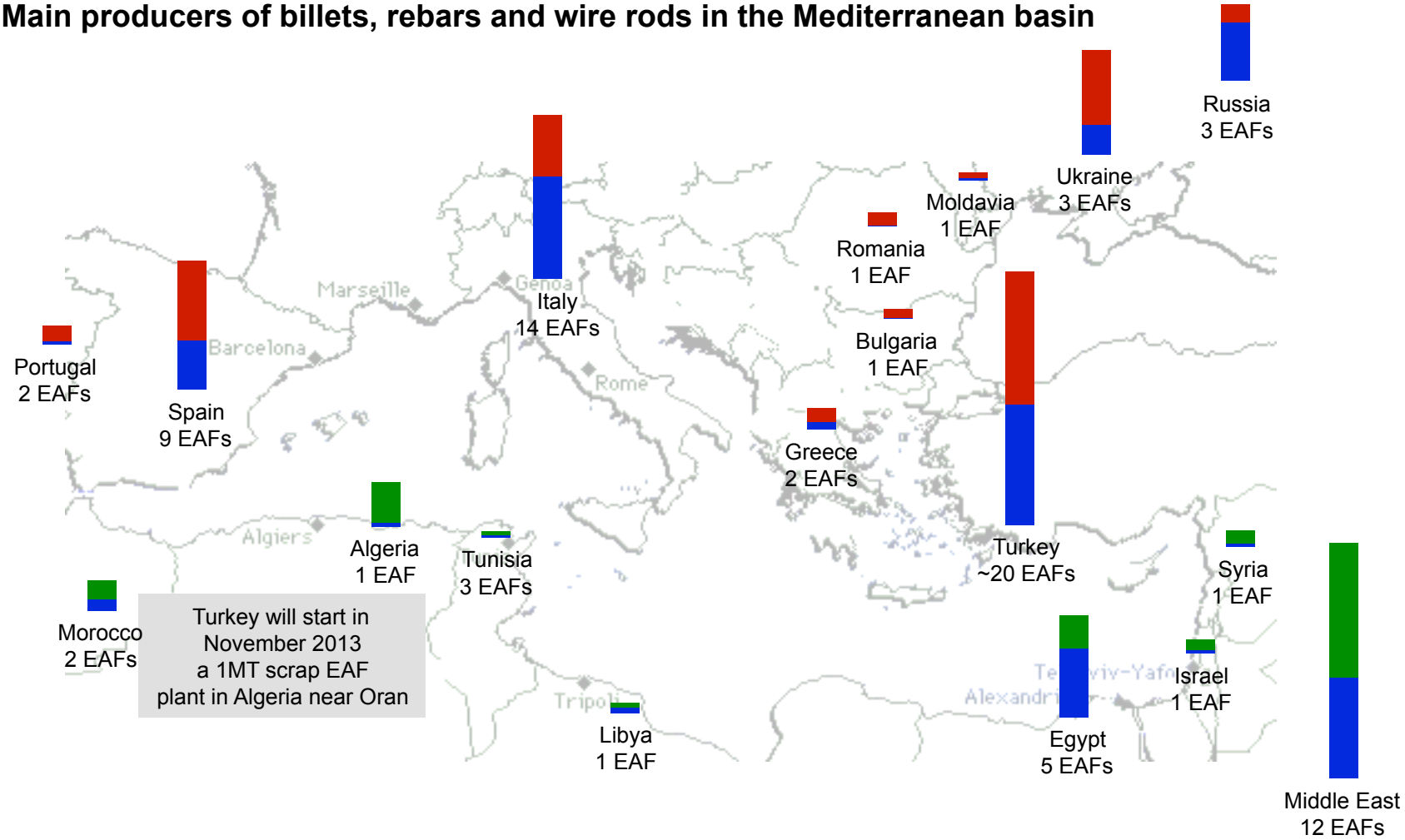
In 2012, the Mediterranean market for long products represents 80 Mt, 1/3 for EU and 1/4 for Turkey

Main producers of billets, rebars and wire rods in the Mediterranean basin



Source: Eurostat, WorldSteel, ISSB, JF King, Company Data, Laplace Conseil analysis

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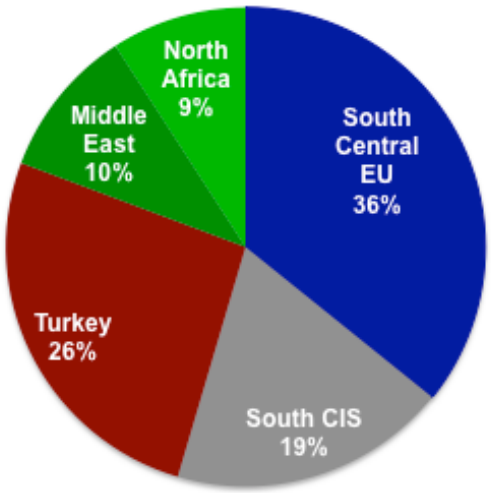
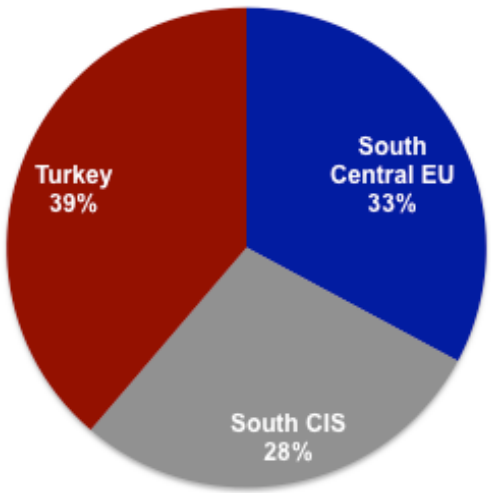
EU represents 1/3 of the regions production and exports; Turkey, with 1/4 of production exports 40%

Assessment of the Mediterranean market in 2012 (Mt)

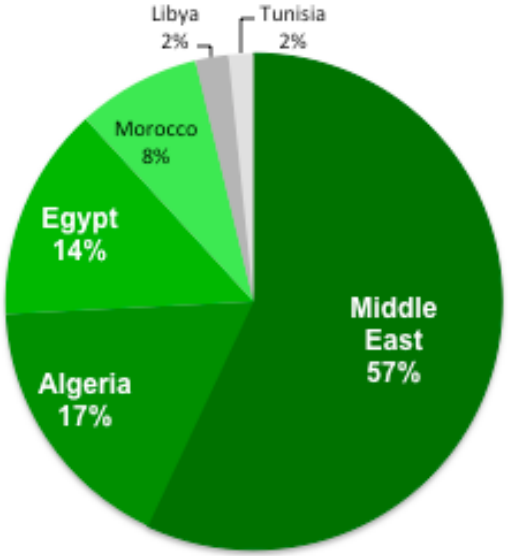
Med. Production
100% = 80 Mt



Med. Exports
100% = 34 Mt



Med. Imports
100% = 31 Mt



Source: Eurostat, WorldSteel, ISSB, JF King, Company Data, Laplace Conseil analysis

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The Scrap and EAF industries employs more workers than the integrated BF/BOF sector

- Crude steel production in BF/BOF sector 98,4 Mt (58%)
- Crude steel production in EAF sector 70,0 Mt (42%)

- Employment in steel sector 410 000 FTE
  - Of which Integrated sector 310 000 FTE in 30 large mills
  - Of which EAF sector 100 000 FTE in 160 minimills

- Employment in scrap sector 300 000 FTE in 7000 plants

- Total employment in scrap/EAF sector 400 000 FTE (56%)
- Total employment in BF/BOF sector 310 000 FTE (44%)

=> Switching from BF/BOF to EAF will increase total EU employment

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The scrap and EAF sectors generate a trade surplus of 11 B€ that contrasts with the 19 B€ deficit of BF/BOF sector

• Iron ore imports by integrated (124 Mt)	- 14 B€
• Coking coal imports by integrated (38 Mt)	- 5 B€
• Scrap net exports by scrap industry (19 – 4 Mt)	5 B€
• Long products net exports by EAF industry (11 Mt)	6 B€
• Flat products net imports by BF/BOF industry (-1 Mt)	~ 0 B€
• Trade balance of the scrap and EAF sectors	11 B€
• Trade balance of the BF/BOF sector	- 19 B€

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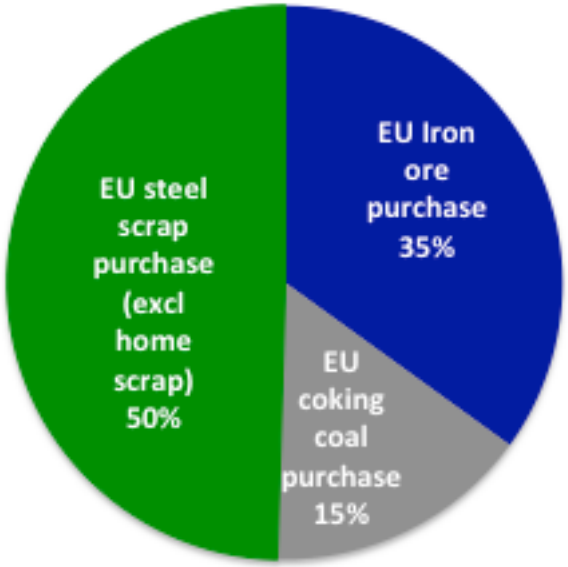
Steel scrap and long product exports help offset the large trade deficit in iron ore and coking coal

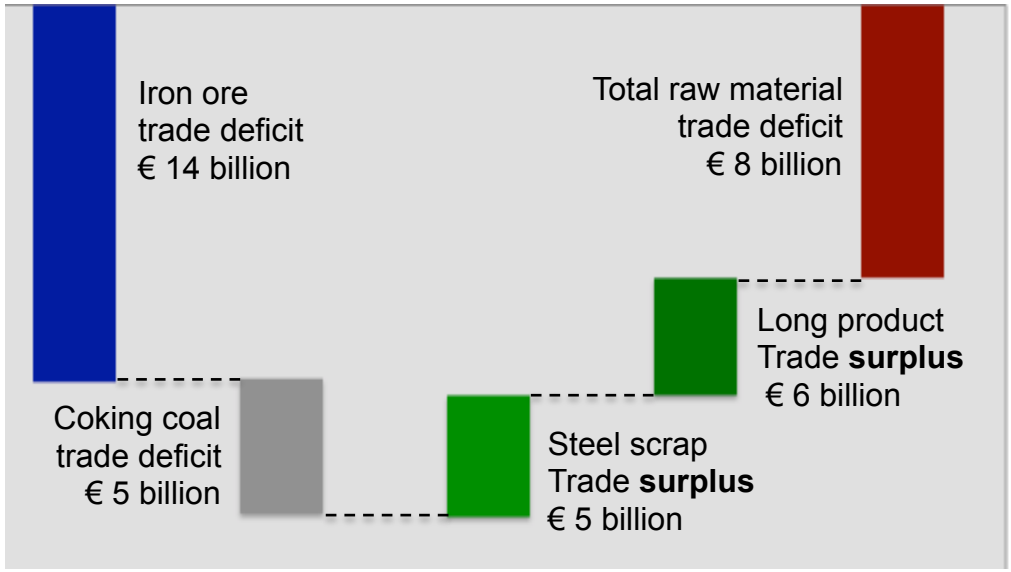
EU Steel purchase of raw materials

100% = € 47 Billion



EU Steel net external trade balance

100% = € 10 Billion



Trade is a two way process; there is no economic or WTO justification to impose trade limits on any of these commodities

Source :Platts SBB, Worldsteel, Eurofer, EFR, Laplace Conseil estimates

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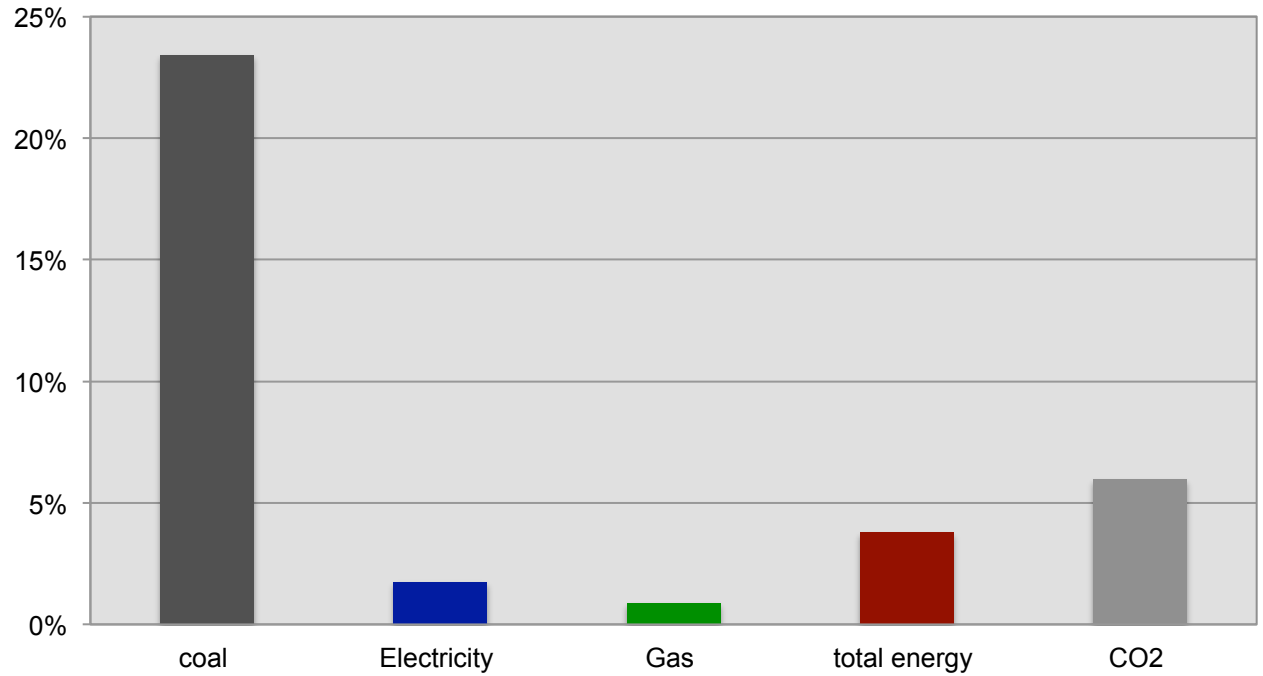
The EU steel industry uses 23% of all coal, 1,9 % of electricity, 0,9% of gas and emits 6% of CO_2

Share of energy consumed and CO2 emitted by the Steel industry in the EU (%)



Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Laplace Conseil analysis

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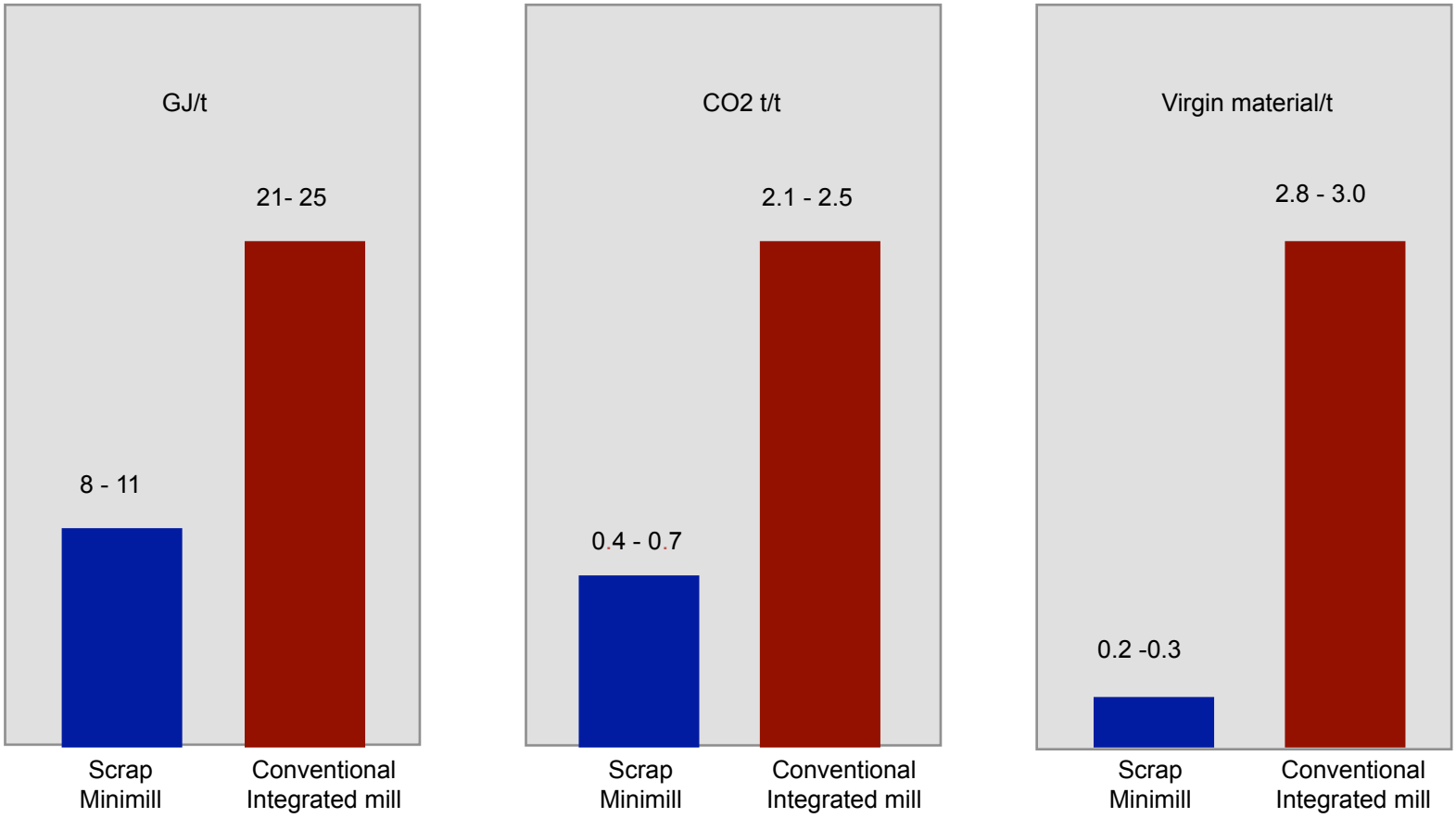
The environmental advantages of scrap recycling over traditional BF/BOF smelting are important

Environmental comparison of EAF and BF/BOF in EU28



Source : Industry data, Laplace Conseil estimates

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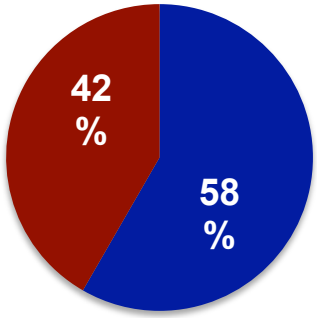
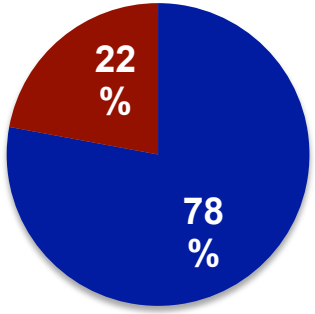
EU EAFs represent 42% of crude steel, 22% of energy consumed and only 15% of CO_2

Share of BF/BOF and steel scrap EAF production, energy consumption and CO2 emission (%)

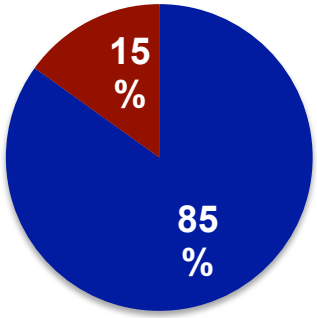
Crude steel production
100% = 168 Mt



Energy consumption
100% = 63 Mtoe



CO_2 Emission
100% = 236 Mt



Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Center for European policy studies, Laplace Conseil analysis

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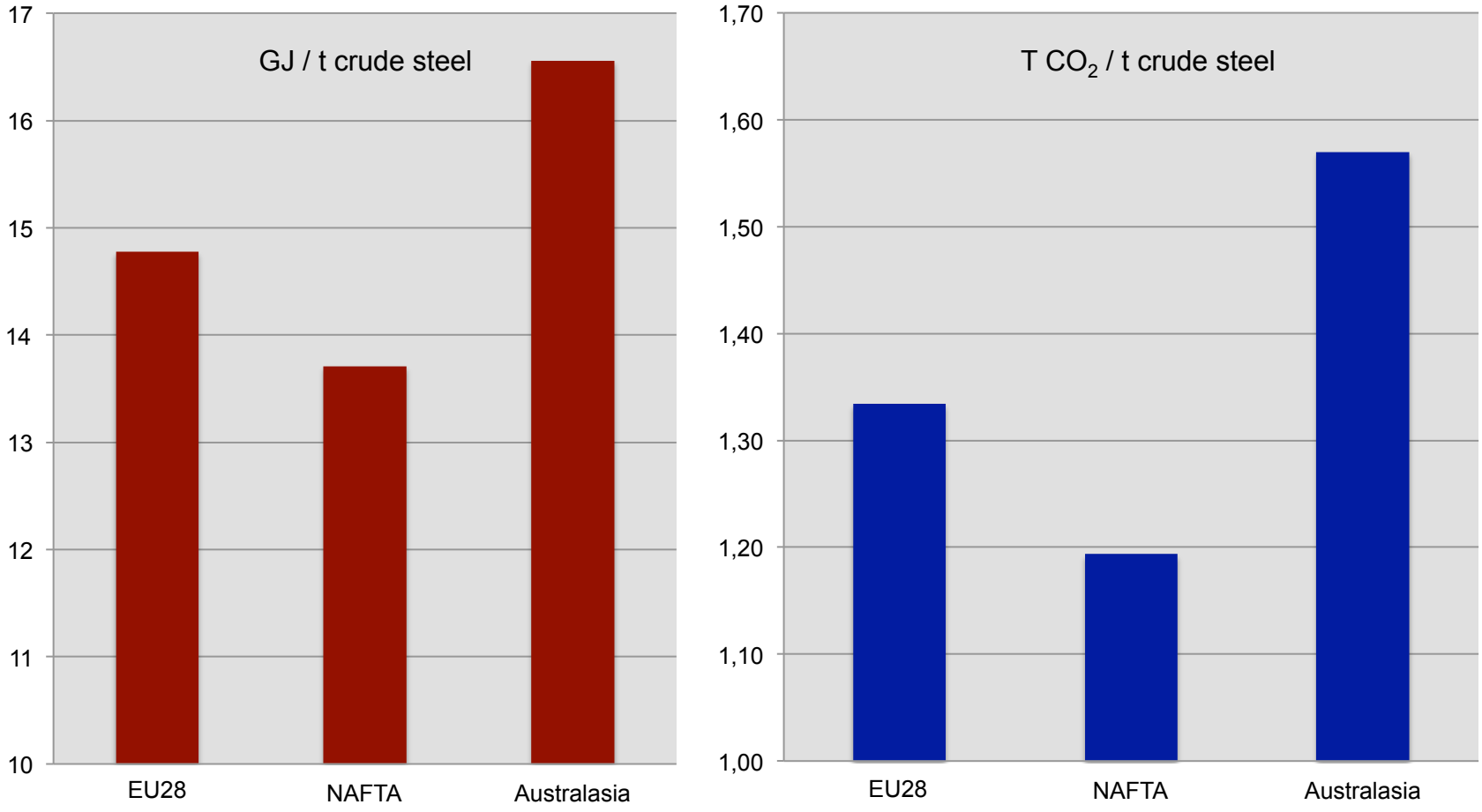
Thanks to its higher share of EAFs, NAFTA has the lowest energy consumption and CO_2 emissions

Comparison of Energy and CO_2 per tonne in OECD regions



Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Laplace Conseil analysis

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Mixing of old scrap with DRI dilutes scrap impurities and help produce almost the entire range of steel grades

"Those who believe that it is not possible to produce exposed automotive sheets in minimills such as Nucor's have not been alive or awake in the last thirty years."

Source : Outgoing chairman Dan Dimicco speaking to financial analysts who consistently rate Nucor as the best North American steelmakers (and also the most profitable)

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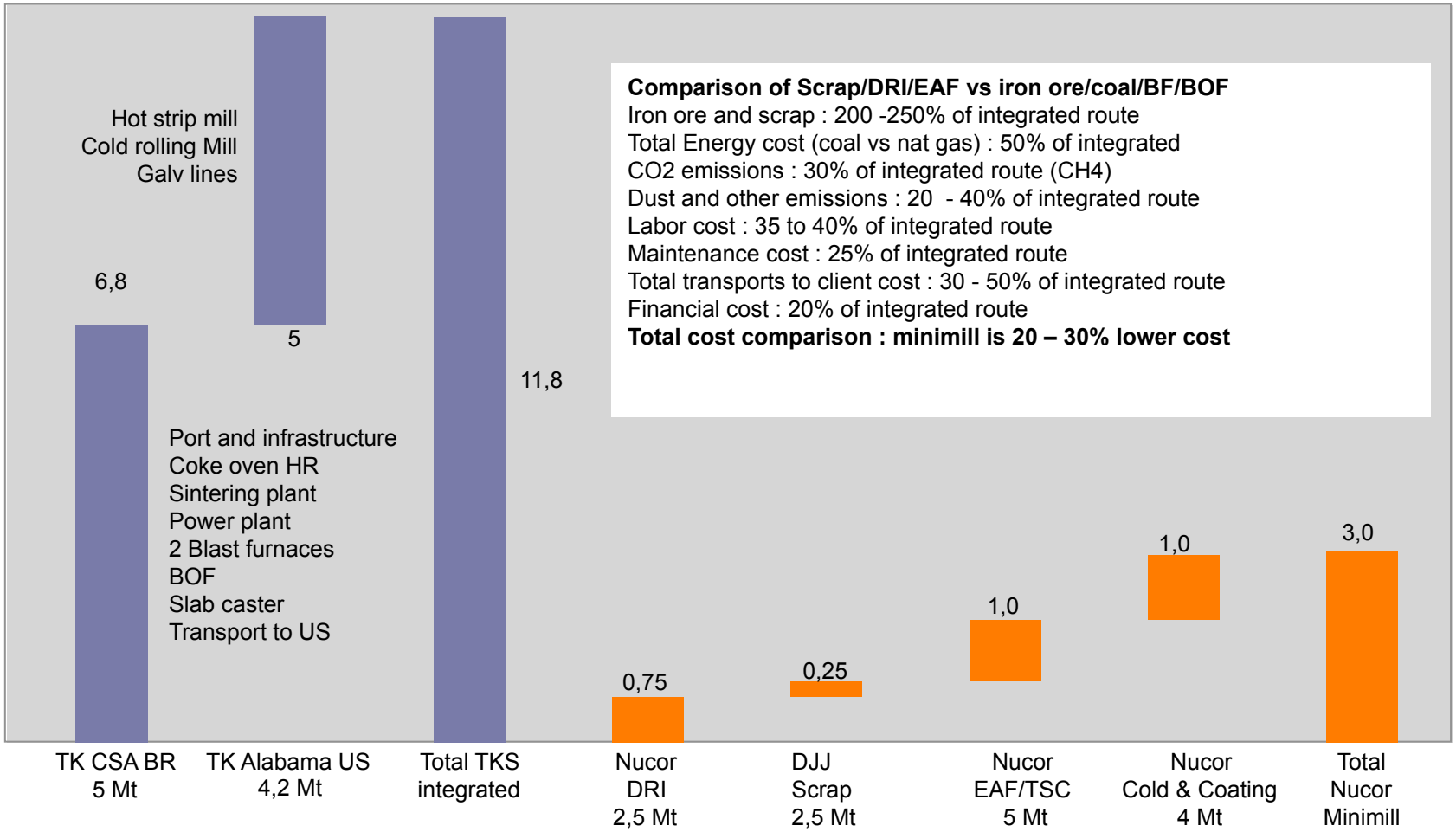
Minimill technology drawing on DRI, EAF and TSC costs one fourth of the same integrated mill

Comparison between Integrated and minimill philosophies for investment (Billion US$)



Comparison of Scrap/DRI/EAF vs iron ore/coal/BF/BOF
Iron ore and scrap : 200 -250% of integrated route
Total Energy cost (coal vs nat gas) : 50% of integrated
CO2 emissions : 30% of integrated route (CH4)
Dust and other emissions : 20 - 40% of integrated route
Labor cost : 35 to 40% of integrated route
Maintenance cost : 25% of integrated route
Total transports to client cost : 30 - 50% of integrated route
Financial cost : 20% of integrated route
Total cost comparison : minimill is 20 – 30% lower cost

Source : SBB, USGS, Steel on the net, EIA,WSJ, Laplace Conseil analysis

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The paradox :

The EU Scrap/EAF industries :

- Produce 42% of all EU crude steel
- Employ 56% of total EU steel and scrap workers
- Generate a trade surplus of 11 B€ vs. a deficit of 19 B€ for BF/BOF
- Consume 22% of energy consumed by the steel sector
- Generate only 15% of the CO_2 emitted by the steel sector
- Require 1/3 of the capital costs and maintenance expenditure per tonne produced
- **Has to pay 54% of the total cost of EU Steel regulations**.
- **The scrap industry is now threatened with new regulations and restrictions**

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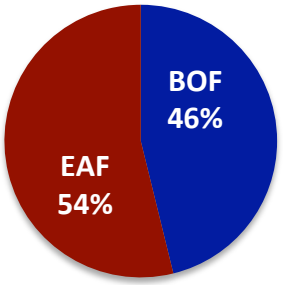
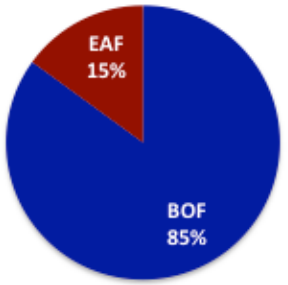
The impact of EU regulations on the steel industry is large and borne mostly by steel scrap using EAF's

	BOF HRC	EAF WR	Steel Industry
ETS	0.74	5.85	2.79
Energy	3.67	8.12	5.46
Environment	6.15	3.39	5.04
Product (REACH)	0.10	0.05	0.08
Total	**10.66**	**17.41**	**13.37**

Total cost of regulation
100% = 2300 M€



Total industry CO2
100% = 236 Mt



Source : CEPS, Assessment of cumulative cost impact for the steel industry, coordinated by Prof. Dr. Andrea Renda

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EU EAFs represent 42% of crude steel, only 15% of CO_2 but 54% of all regulation costs

Share of BF/BOF and steel scrap EAF production, energy consumption and CO2 emission (%)

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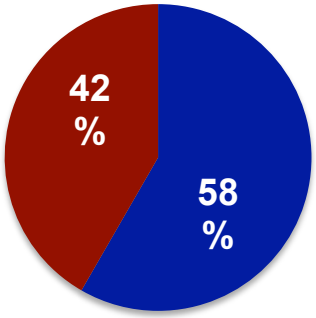
100% = 168 Mt



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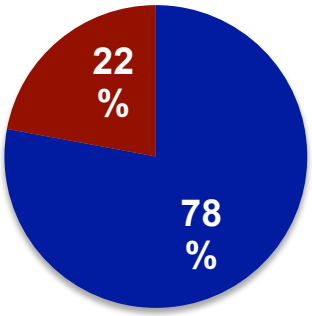
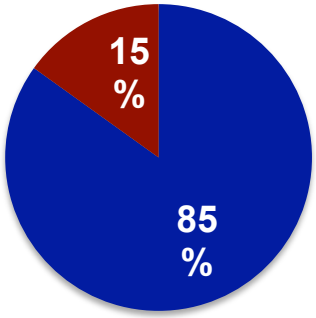
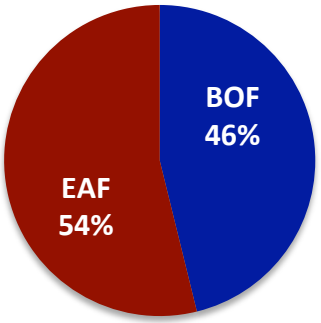


CO_2 Emission
100% = 236 Mt



Cost of regulation
100% = 2300 M€



If the steel scrap EAF industry was paying its cost of regulation in proportion of its CO_2 emission, they would pay 763 M€ less than today. That would represent an environment credit of 11 € per tonne of finished steel and far more than any benefits to be derived from any steel scrap export restrictions !

Source : IEA, WorldSteel, BP Energy statistics, World Coal association, Midrex, Center for European policy studies, Laplace Conseil analysis

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Conclusions

Increasing the share of Scrap/EAF achieve the quadruple objectives of :

- Increasing combined employment in the steel and scrap industries
- Reducing energy consumption and CO_2 emissions
- Improving the EU balance of trade
- Achieving better profitability for both industries

Thus leading to stronger economical growth and greater societal benefits.

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Moreover, the EU proposed regulation would only have detrimental macroeconomic impact.

- First, export restrictions would have a major detrimental impact on the revenue for the scrap collecting and processing industry with a reduction in total revenue close to 18%. This would inevitably lead to a reduction in the 300 000 employees of the industry.
- Second, it would create major uncertainty for buyers and sellers of steel scrap by introducing a disconnection between EU prices and international prices, thus risking a reduction in overal recycling and a reduction in investment to promote sound recycling practices
- Third, it would create a major dispute with Turkey, a solid global ally and one of the largest buyers of steel scrap. The balance of trade between the EU and Turkey is strongly in favor of EU (75 B€ exports vs 48 B€ imports)
- Fourth, it would not help the Southern EAF producers while creating a major loss to Northern and Southern Scrap exporters.

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Final remarks

- The steel scrap industry and EAF steel makers enjoy a symbiotic relationship that both parties have an interest in nurturing.
- Recycling scrap provides major economic and societal benefits and may help Europe preserve its industrial base.
- The two partners, scrap collectors and EAF steelmakers should create a stronger alliance to defend their common interests as well as the common good.
- In particular both partners should discuss with the Commission to :
  - Reduce the cost of existing regulations and avoid creating new ones that could affect the steel scrap recycling industry.
  - Allocate the cost of regulations in proportion of CO_2 emissions.
  - Harmonize scrap quality specifications to facilitate trade.
  - Favor the development of best available technologies in the EU.

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