

# THE EU ALUMINIUM INDUSTRY AT THE CROSSROADS AND THE NEED FOR AN EFFECTIVE INDUSTRIAL POLICY

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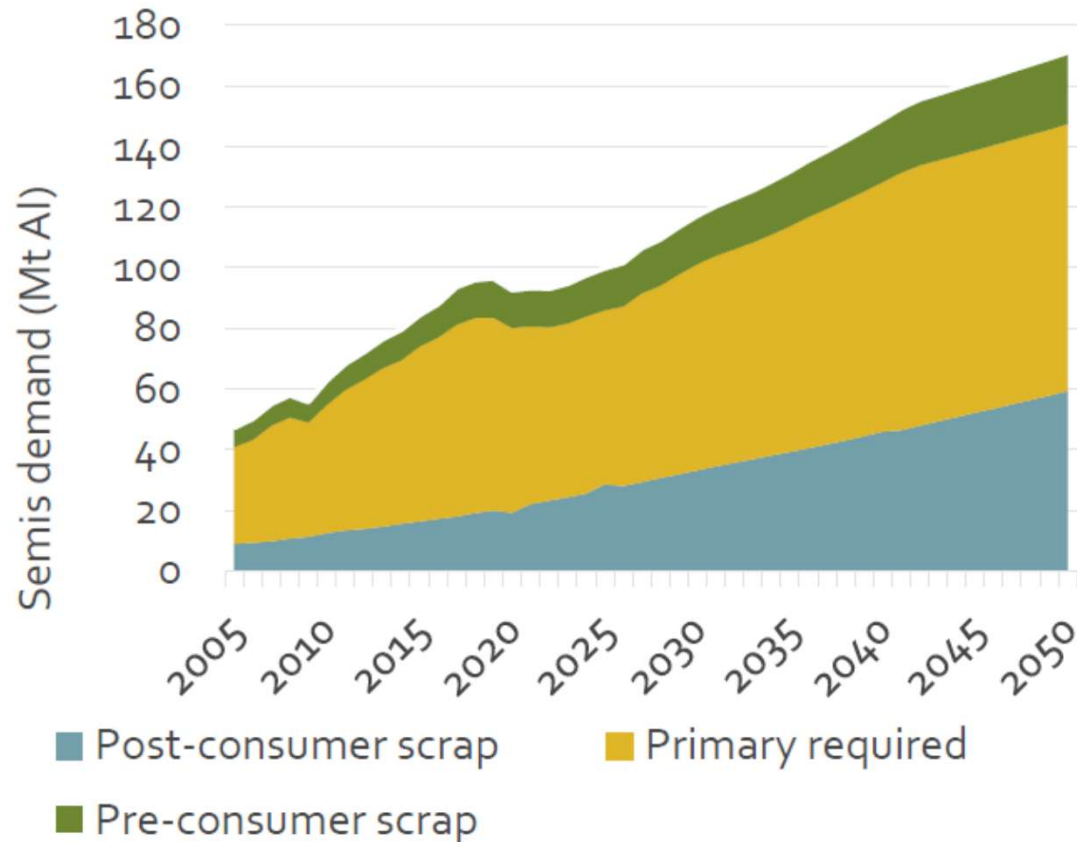
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# The current issues

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- Fundamental structural changes have characterised the global aluminium industry in the last few years
  - China's role has increased substantially in all segments of the aluminium value chain as well as in the consumption of aluminium products, to the detriment of North America and the EU
- Growing concerns in developed countries about the effects of those changes in terms of production, employment, growth, investment and dependence on imports
- Renewed interest in the role of governmental interventions in orienting firms' production and investment decisions and in shaping the structure of the aluminium industry and in driving economic development and the competitiveness of the manufacturing sector
  - In the EU, the aluminium industry is one of the sectors that has featured most prominently in the anti-dumping investigations

# The global demand for aluminium

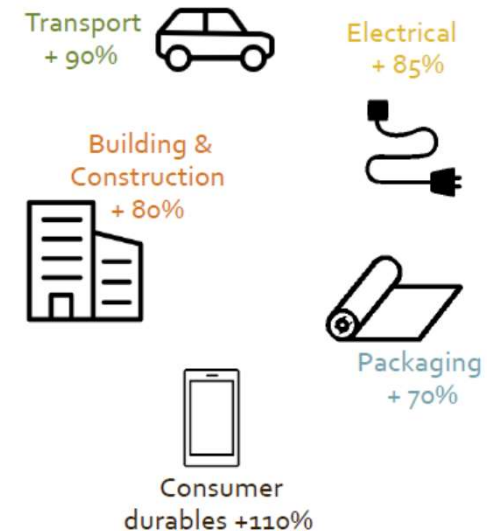


Source: International Aluminium

- Global demand for aluminium is expected to increase by 80% by 2050, due to rapid population and economic growth and the drive for sustainable solutions for a low-carbon society

## Key sectors will drive growth

2018-2050



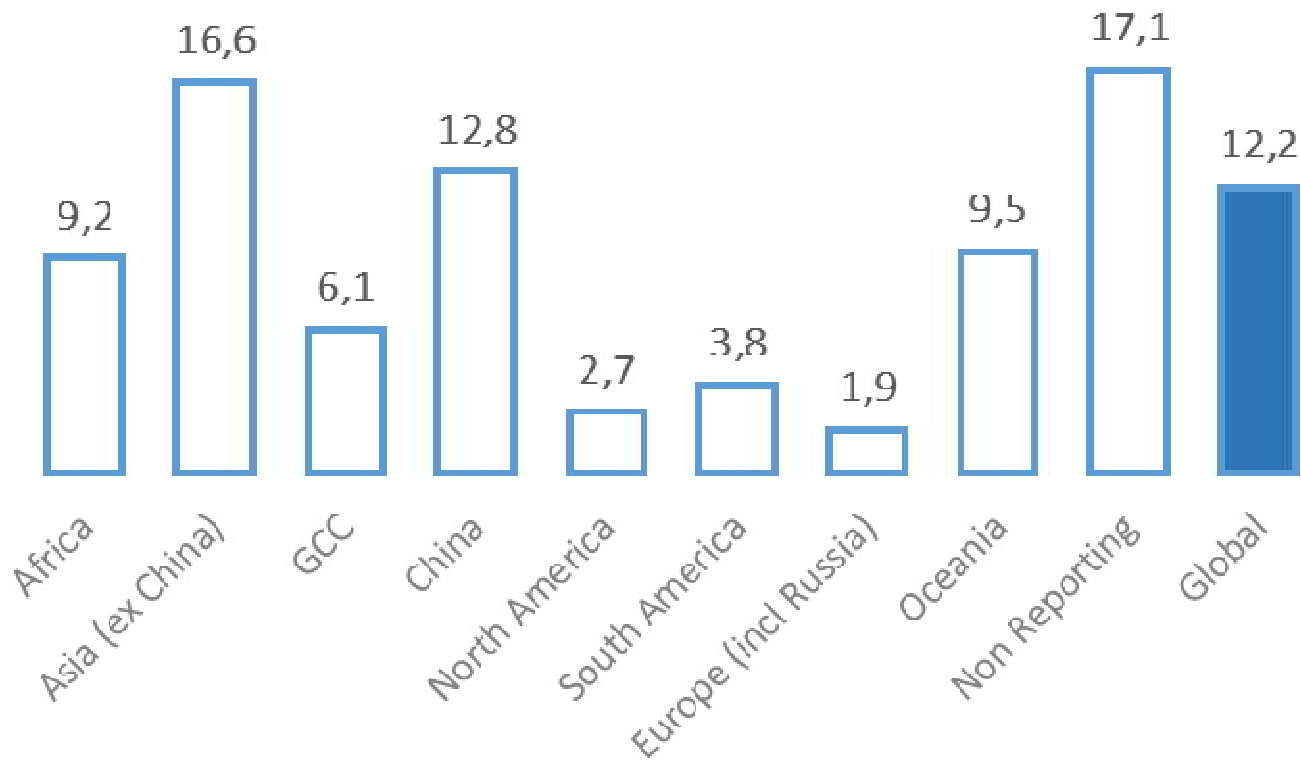
# The pivotal role of aluminium in EU climate targets

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- Aluminium play a pivotal role for the achievement of European targets for energy efficiency and use of resources
  - the carbon intensity of primary aluminium production in Europe decreased by 21% versus 2010 and by 55% versus 1990
  - the carbon intensity of the primary aluminium production in Europe is approximately 7kgCO<sub>2</sub>e per kg of aluminium produced compared to a global average of 18kgCO<sub>2</sub>e per kg of aluminium and a Chinese average of 20kgCO<sub>2</sub>e per kg.
  - there is a strong decrease of the carbon intensity of semi-fabrication processes in Europe
    - the carbon intensity for the aluminium rolling mill process decreased by 25% since 2010
    - the carbon intensity for the extrusion process decreased by 11%
  - As the material can be easily recycled, it is estimated that 75% of all aluminium produced is still in use
    - over half of all the aluminium currently produced in the EU originates from recycled aluminium
    - recycling aluminium saves 95 percent of the energy required and the GHG emitted for the primary production
    - the carbon intensity of process scrap recycling (remelting) in Europe decreased by 9% since 2010

# Minimising the environmental impact of increasing production

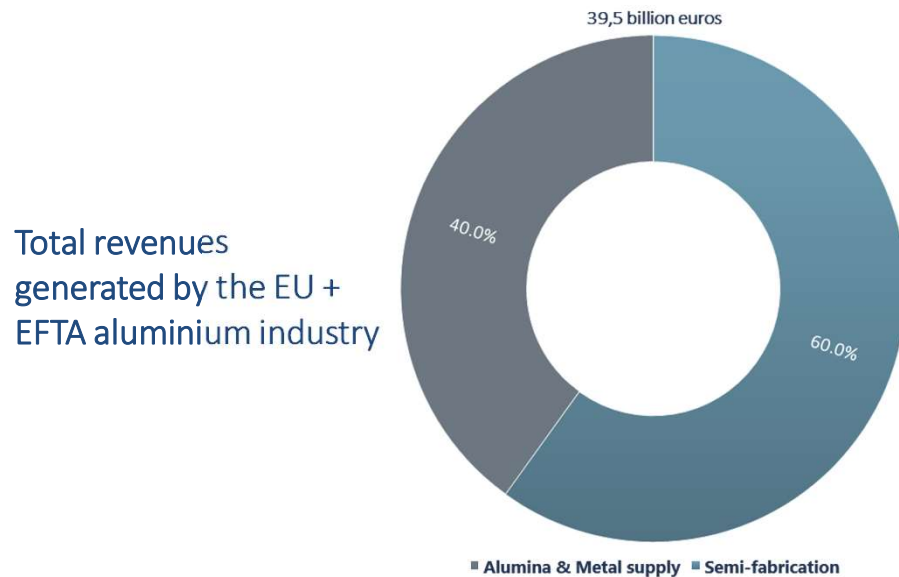
Tonnes CO2e per tonne Primary Aluminium (electricity electrolysis 2019)



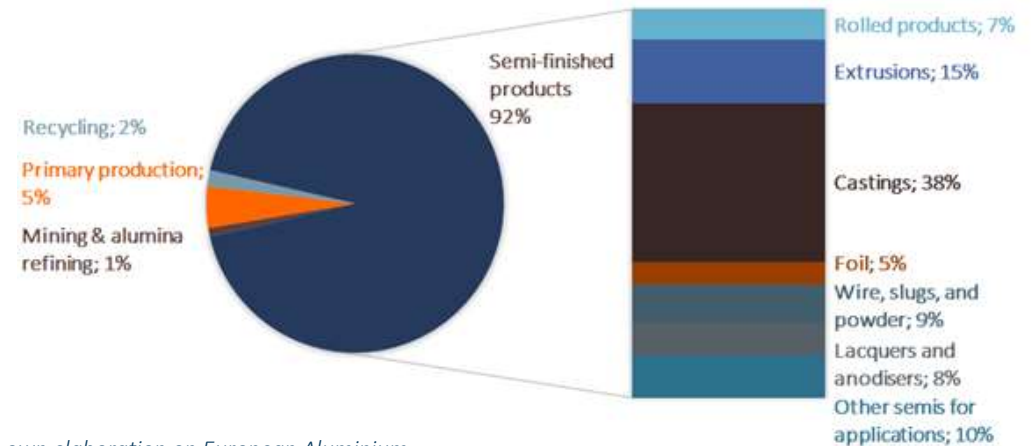
Source: authors on International Aluminium

# The shape of the EU Aluminium industry

- The shape of the EU aluminium industry fundamentally changed in recent years.
- More than a thousand companies, with an annual turnover of about 40 billions euros and a direct employment of about 230.000 employees (and around 1 million indirect jobs).
- The downstream sector actually represents the bulk of the EU aluminium industry in terms of production, turnover, value added and jobs created.



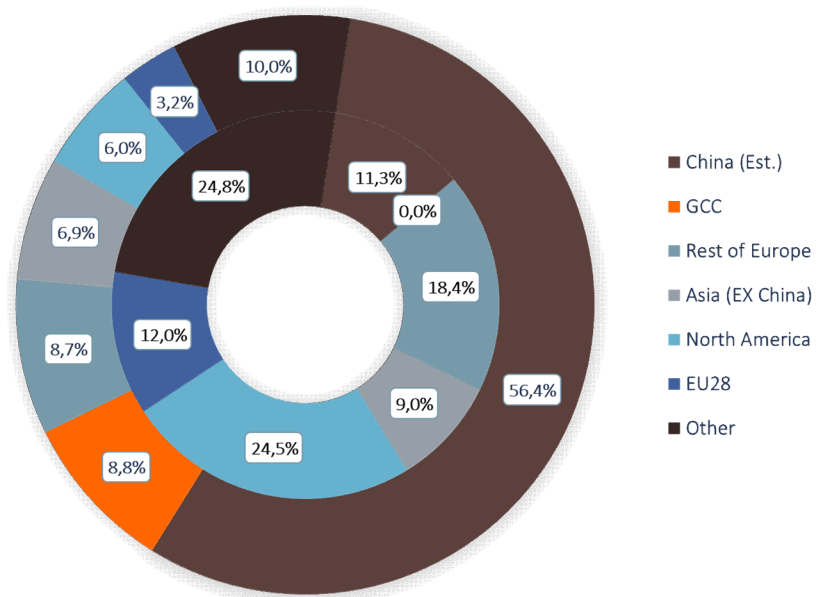
Total employment in the EU aluminium industry by segment



Source: Authors' own elaboration on European Aluminium

# Production of primary aluminium

Global primary production of aluminium in 2000 (inner ring) and in 2019 (outer ring)



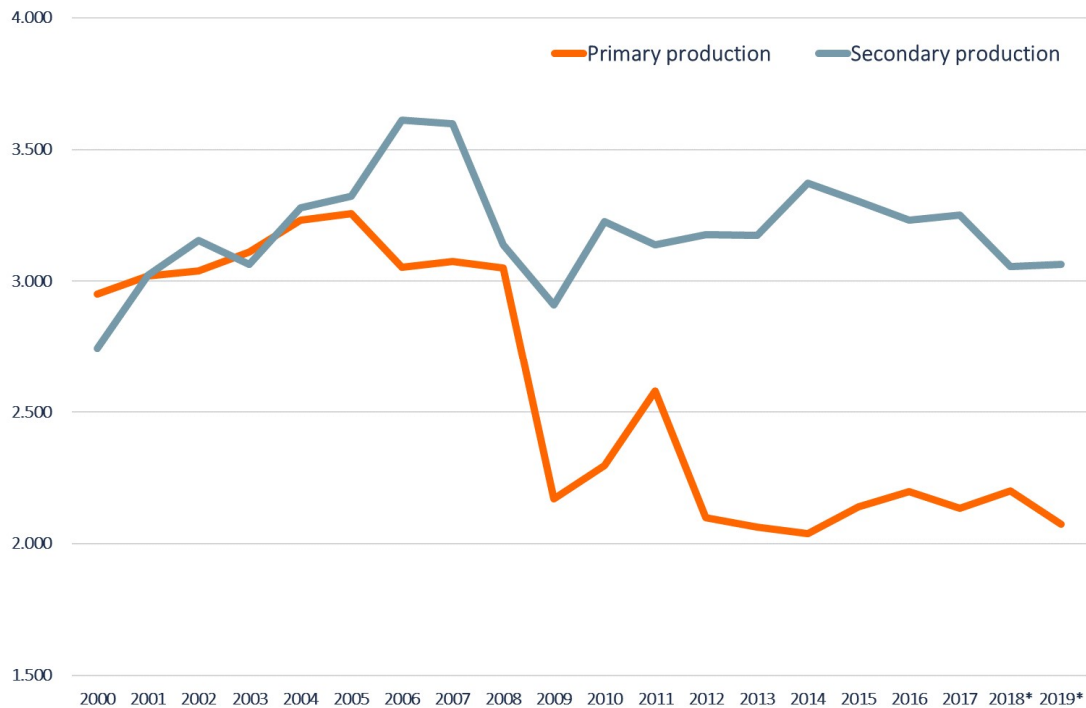
EU production of primary aluminium (thousand tonnes)

Country	2000	2005	2010	2015	2016	2017	2018	2019	00-19
Germany	644	643	401	542	548	535	529	508	-17%
France	441	442	357	419	425	416	390	390	-6%
Spain	365	397	366	349	353	337	350	230	-8%
UK	305	366	186	47	46	40	44	39	-87%
Netherlands	302	334	214	31	57	36	41	81	-88%
Italy	189	193	135	0	0	0	0	0	-100%
Romania	179	244	207	207	208	210	283	280	17%
Greece	163	165	135	176	182	181	185	182	12%
Slovakia	110	159	163	171	174	174	174	175	58%
Sweden	100	103	93	116	123	123	125	120	23%
Slovenia	75	121	41	84	84	84	81	68	11%
Poland	45	55	0	0	0	0	0	0	-100%
Hungary	34	36	0	0	0	0	0	0	-100%
<b>Total EU 28</b>	<b>2.951</b>	<b>3.256</b>	<b>2.298</b>	<b>2.141</b>	<b>2.199</b>	<b>2.135</b>	<b>2.202</b>	<b>2.074</b>	<b>-28%</b>

- The global positioning of primary aluminium production changed. China's role has increased substantially to the detriment of North America and the EU.
- Since 2008, the EU's production of primary aluminium shrank by 47%. Some producing countries, such as Italy, the UK, and the Netherlands, significantly curtailed or definitively ceased their production.

# Aluminium recycling and remelting

EU primary and secondary production of aluminium ('000 tonnes)



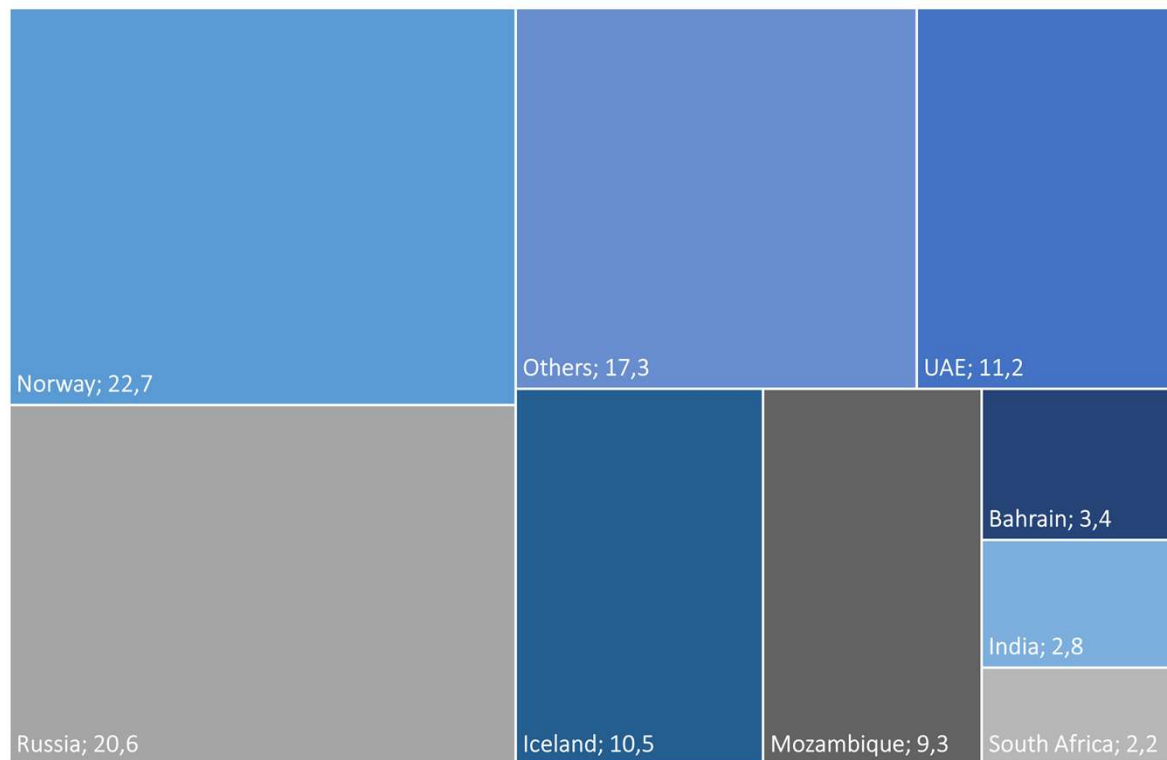
Source: Authors' own elaboration on CRU Group and World Bureau of Metal Statistics

- Since 2004, the EU has produced more secondary than primary aluminium. As of 2019, however, secondary aluminium output has not yet matched pre-crisis levels.
- The United States, Japan, and EU are major producers of secondary aluminium, although China is rapidly increasing its recycled aluminium output.
- Japan has decided to definitively cease producing primary aluminium and to focus on secondary production.



# Imports of unwrought aluminium

EU Imports of unwrought aluminium by country of origin (percentage, 2019)



- Russia and Norway are the leading exporters of unwrought aluminium to the EU markets (43% of total EU imports)
- Russia accounted for almost 34% of the EU's imports of unwrought, not alloyed, aluminium in 2019, while Norway covered about 43% of the EU's imports of unwrought aluminium alloys
- Both the Russia and Norway have reduced their share; this shift has mainly benefitted UAE, Mozambique, Iceland, Bahrain, and, more recently, India

# Production of semi-finished products

Production of semi-finished products, by countries and product categories ('000 tonnes)

Region/Country	2012	2013	2014	2015	2016	2017	Δ 12-17	CAGR
North America	9,489	9,684	10,138	10,398	10,550	10,585	12%	2.2%
USA	7,968	8,101	8,427	8,615	8,723	8,698	9%	1.8%
Canada	684	693	717	771	778	793	16%	3.0%
Mexico	837	890	994	1,012	1,049	1,095	31%	5.5%
EU	9,544	9,557	9,907	10,112	10,425	10,760	13%	2.4%
Germany	3,144	3,200	3,352	3,418	3,478	3,526	12%	2.3%
Italy	1,879	1,838	1,824	1,906	1,969	2,095	11%	2.2%
Other Europe	2,533	2,646	2,675	2,658	2,728	2,952	17%	3.1%
Russian Federation	1,029	1,056	988	916	925	967	-6%	-1.2%
Total Asia	35,000	38,426	41,720	43,623	46,646	51,915	48%	8.2%
China	24,619	27,835	30,468	32,045	34,614	39,096	59%	9.7%
Japan	3,379	3,338	3,447	3,382	3,405	3,527	4%	0.9%
India	1,562	1,562	1,658	1,737	1,864	1,921	23%	4.2%
Rest of Asia	3,625	3,805	4,033	4,209	4,321	4,445	23%	4.2%
Middle East	1,815	1,886	2,068	2,245	2,442	2,925	61%	10.0%
Australasia	423	421	367	227	223	172	-59%	-16.5%
Africa	693	682	711	728	800	900	30%	5.4%
Central & South America	1,595	1,666	1,608	1,500	1,408	1,462	-8%	-1.7%
<b>Total</b>	<b>58,618</b>	<b>62,431</b>	<b>66,413</b>	<b>68,451</b>	<b>71,828</b>	<b>77,753</b>	<b>33%</b>	<b>5.8%</b>

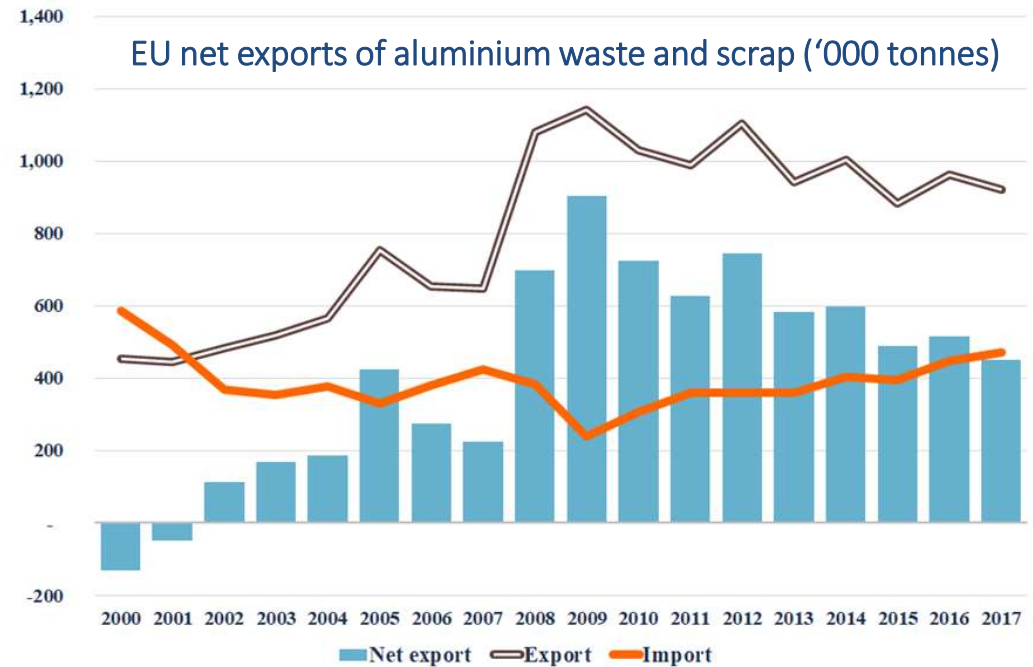
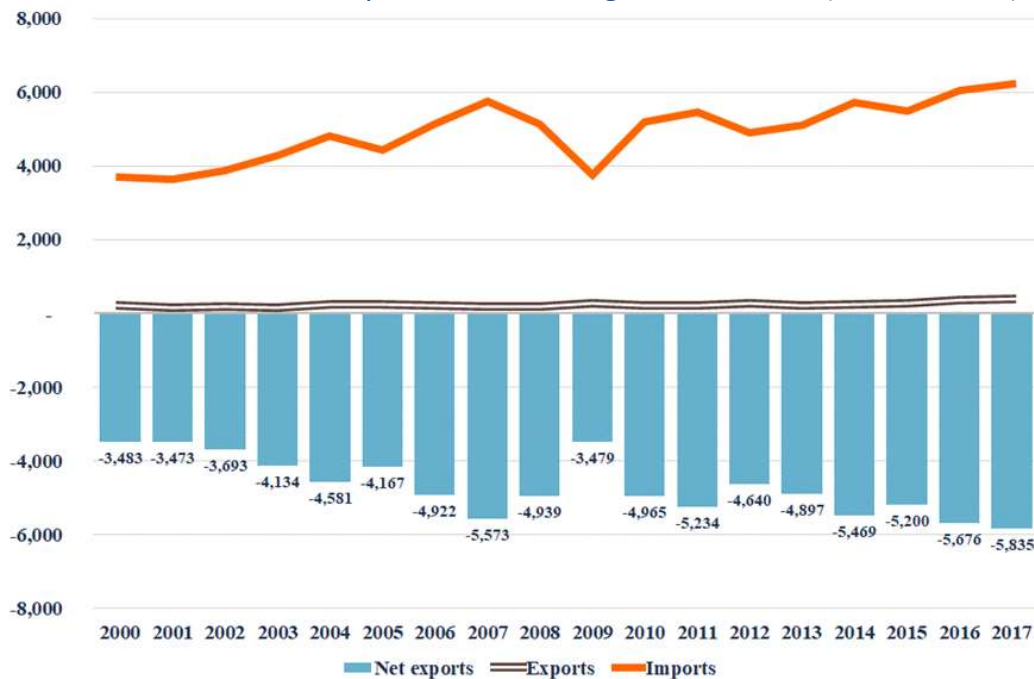
Product	2012	2013	2014	2015	2016	2017	Δ 12-17	CAGR
Extrusions	22,521	24,387	25,949	26,725	28,112	29,695	32%	5.7%
FRPs	20,417	21,596	22,999	23,716	24,802	26,253	29%	5.2%
Castings	15,679	16,447	17,465	18,010	18,913	21,805	39%	6.8%
<b>Total</b>	<b>58,618</b>	<b>62,431</b>	<b>66,413</b>	<b>68,451</b>	<b>71,828</b>	<b>77,753</b>	<b>33%</b>	<b>5.8%</b>

- Global manufacturing of extrusions, FRPs and castings more than doubled in 2000-2017 (with China now representing around 50% of global output)
- The EU production of FRPs and castings has increased in 2000-2017, but at a significantly slower pace than at the global level. In 2017, the EU production of extrusions was below 2000 levels, although global production tripled in the same period.
- As a result, the EU's share in global manufacturing of semi-finished aluminium products has constantly declined, from 29% in 2000 to 14% in 2017.
- Germany, Italy, and France largest producers of semis in the EU (about 62% of the EU's total output in 2017).

# Trade flows of unwrought aluminium products – 1/2

- EU imports of unwrought aluminium increased significantly in 2000-2017 (imports in 2017 were 69% higher than in 2000). The trade deficit of unwrought aluminium thus steadily worsened.

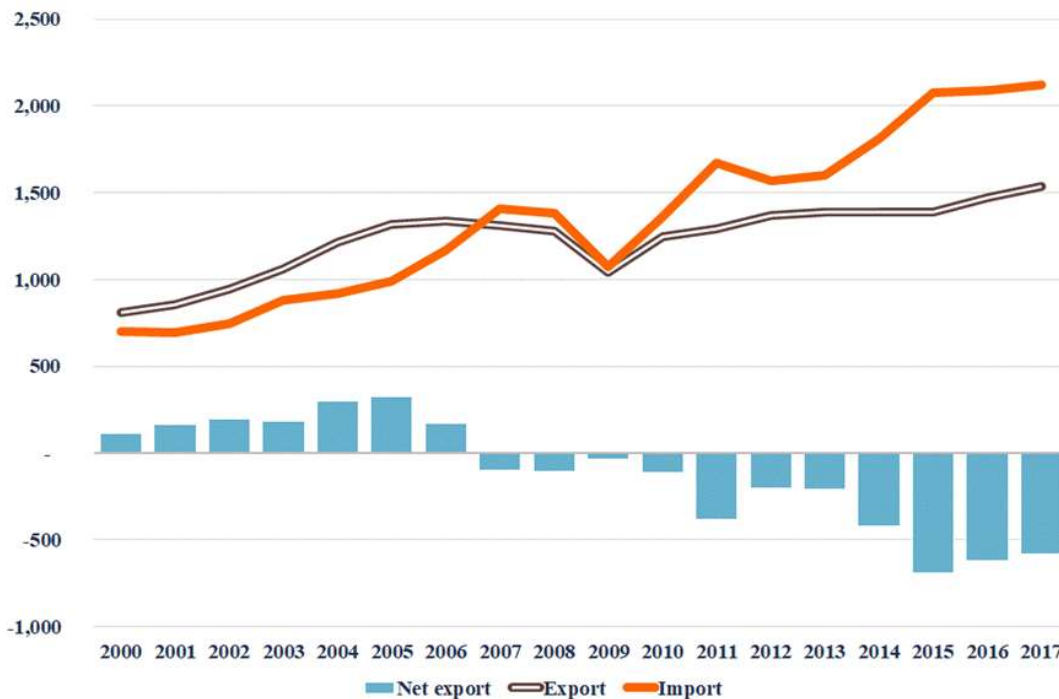
EU net exports of unwrought aluminium ('000 tonnes)



- A trade surplus characterised the aluminium waste and scrap sector since 2002.
- This represent an outflow of raw materials to Asian countries, such as China and India), although of low quality and very expensive to sort and process.

# Trade flows of semi-finished products – 2/2

EU net exports of wrought aluminium ('000 tonnes)







- The EU trade balance in semi-finished products has deteriorated in 2000-2017.
  - Structurally being a net exporter, the EU experienced an increasing trade deficit (FRPs account for about 70% of the EU imports of semis).
  - The EU's reliance on imported aluminium extrusions grown rapidly in recent years. In 2017, the EU net imports of aluminium extrusions were more than five times higher than in 2000.
  - The EU currently a net importer of castings (including aluminium road wheels as one of the main product categories).
- Much of the growth of EU imports due to the increase of Chinese exports to the EU (in 2017, extrusions imported from China about 36 times higher than in 2000, FRPs increased by 20 times, castings by 46 times).

# The role of trade policies to support the aluminium industry

- No coherent industrial policies in the EU
- The task of supporting the aluminum industry in the EU mainly left to trade policy
- A complex system of import tariffs currently applies to unwrought and wrought aluminium products
  - The import tariffs on unwrought aluminium mainly justified by the need to prevent EU smelters from reducing their production or even shutting down their facilities
  - To avoid distorting competitive conditions for industries further down the value chain, import tariffs have been set also for aluminium semi-finished products and aluminium finished good

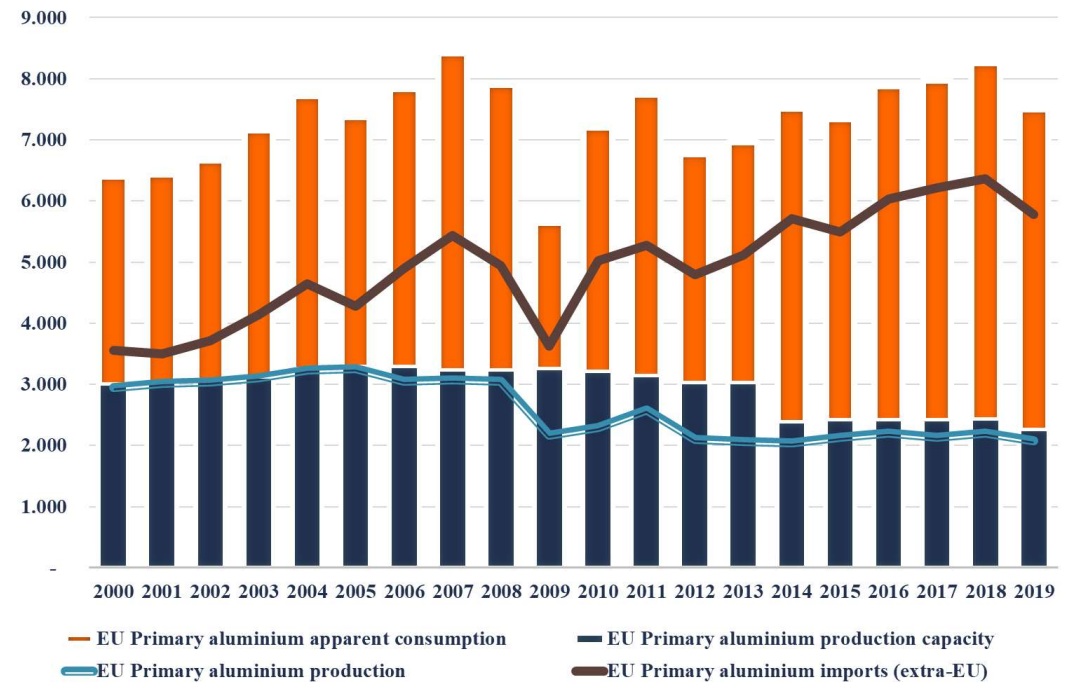
Import tariffs applied on unwrought aluminium in the EU in 2019

HS Code	Code description	Tariff (2019)	EU regulation No.
76.01.100000	Aluminium, <b>not alloyed</b> , Aluminium content $\geq 99\%$ 	<b>3%</b>	R0705010
76.01.202010	Aluminium <b>alloys</b> , slabs and billets, containing lithium, Aluminium content $< 99\%$ 	0%	R1623900
76.01.202090	Aluminium <b>alloys</b> , slabs and billets, Aluminium content $< 99\%$ 	<b>4%</b>	R1623900
76.01.208000	Aluminium <b>alloys</b> (other), Aluminium content $< 99\%$ 	<b>6%</b>	R9720860

# The impact of EU import tariffs on unwrought aluminium

- EU import tariffs on unwrought aluminium have been ineffective to sustain primary aluminium production
  - The EU's production of primary aluminium decreased significantly because of major curtailments and shutdowns of smelters
  - In 2019, the EU's primary aluminium production about 28% of the apparent consumption. The total installed smelting capacity in the EU equal to 30% of the EU's apparent consumption
  - The increasing demand for primary aluminium met by rising imports (dependence on imports has thus steadily increased)

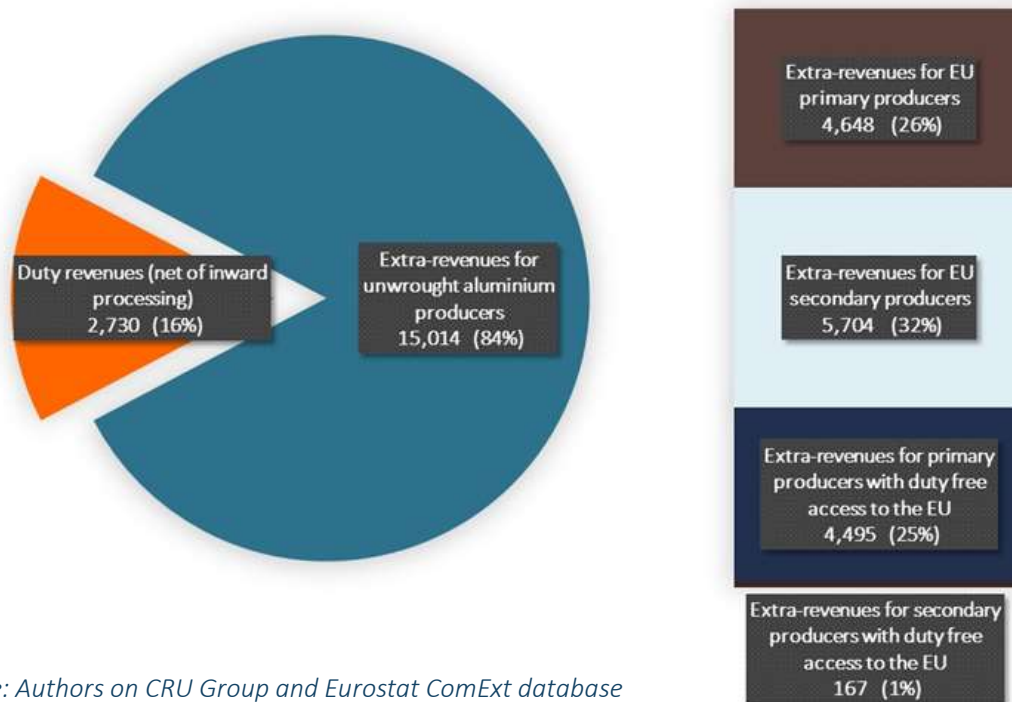
Apparent consumption, installed production capacity, production, and imports of primary aluminium in the EU ('000 tonnes)



Source: authors on CRU Group and Eurostat ComExt database

# Estimating the overall impact on downstream transformers

Breakdown of the extra revenues stemming from EU import tariffs on unwrought aluminium (2000-2017, € million – real 2018)



Source: Authors on CRU Group and Eurostat ComExt database

- The cumulative extra cost of the tariff for unwrought aluminium for EU downstream producers can be estimated up to 17.8 billion euros over the period 2000-2017 (net of inward processing)
- Import tariffs resulted in additional revenues for EU primary and secondary producers, as well as additional incomes of primary producers with duty-free access to EU internal market

# Industrial policies for the aluminium industry

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- The competitive advantage of the EU aluminium value chain lies in the technological leadership of the downstream activities
  - The downstream producers can rely on unique know-how and significant learning economies, they have able to innovate and to improve the quality as well as the environmental performance of their products
  - The downstream is the segment that produce development at the local level, and also represents the main source of employment
  - About 70% of the annual turnover and nearly 92% of the total employment of the EU aluminium industry are currently generated in the downstream segment of the value chain
- From a broader industrial policy perspective, it is thus essential to provide all the right support to maintain this leadership and possibly reinforce the economic and industrial competitiveness of firms producing semi-finished products and using aluminium products