



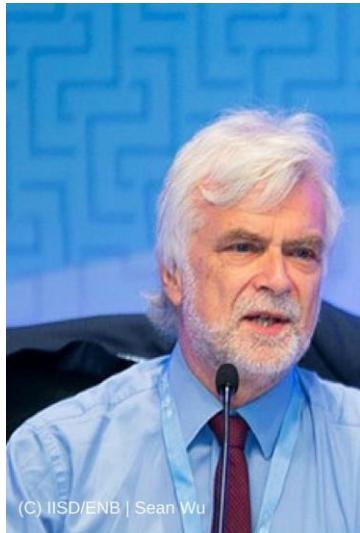
Our industry in a fast paced evolving world

Rome, 12 November 2018

Gerd Götz, Director General European Aluminium



／ IPCC report: Net emissions of CO₂ must reach zero by 2050



(C) IISD/ENB | Sean Wu

Limiting warming to 1.5°C is possible within the laws of chemistry and physics but doing so would require unprecedented changes.

Jim Skea
Co-Chair, WG III

Incheon, 8 October 2018

Greenhouse gas emissions pathways

- To limit warming to 1.5°C, CO₂ emissions fall by about 45% by 2030 (from 2010 levels)
 - Compared to 20% for 2°C
- To limit warming to 1.5°C, CO₂ emissions would need to reach 'net zero' around 2050
 - Compared to around 2075 for 2°C
- Reducing non-CO₂ emissions would have direct and immediate health benefits

1 /

About us (and our material)

1 / Who we are in key figures

80+

members

approx. **600** plants in
30 European countries (EU
28, EFTA and Turkey)

1

million + Direct
and indirect jobs across
Europe's value chain

€39,5

Billion annual
turnover

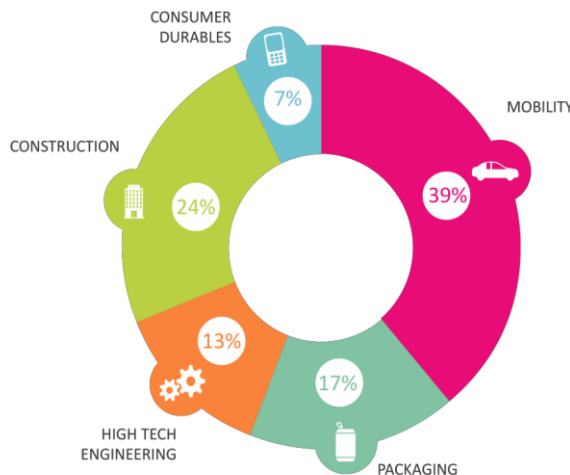
Founded in

1981

European
Aluminium
represents the
entire value chain of
the aluminium
industry in Europe



**An innovative value chain serving EU key
markets**



90%

of aluminium is
recycled in
construction and
automotive in
Europe

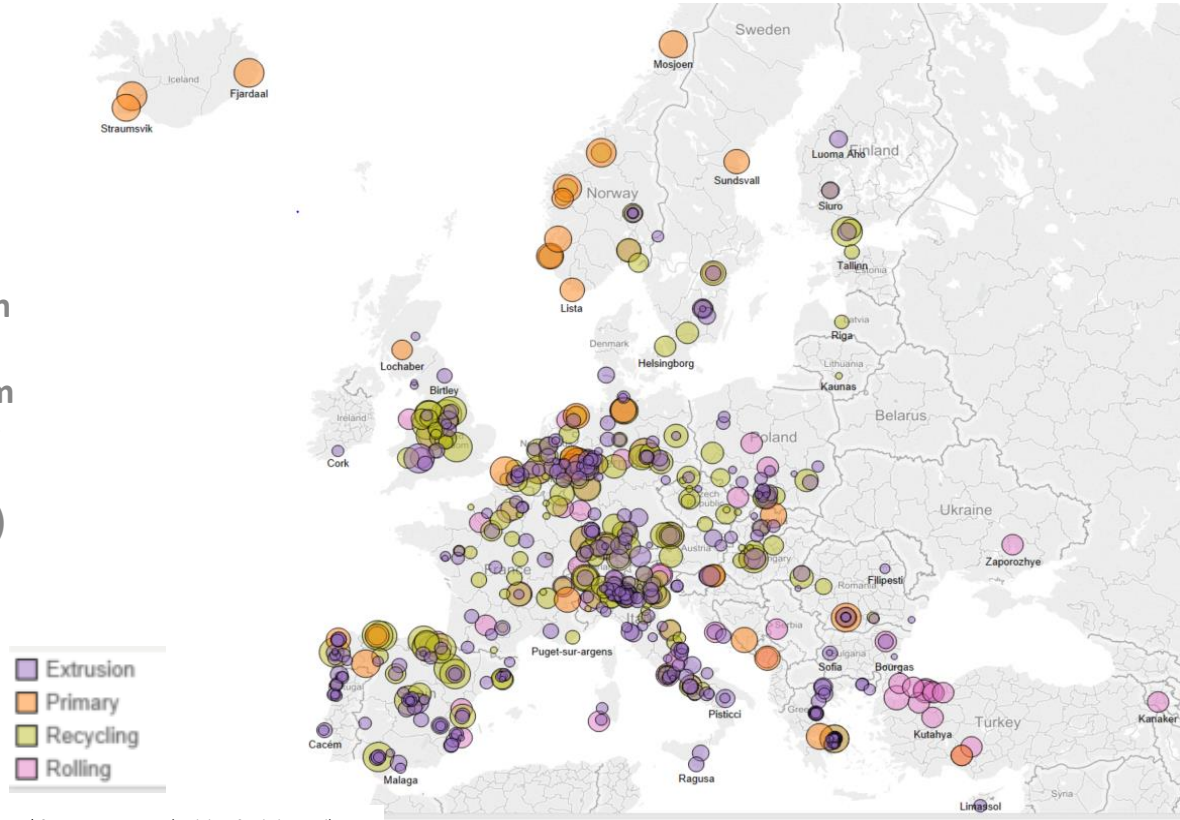
Europe produces

16%

of worldwide
aluminium, **half of
which** from
recycled sources

1 / A pure European cluster-driven industry

More than
600
aluminium
plants (by
installed
capacity*)



* Source : European Aluminium Statistics, April 2015

1 / Aluminium properties: the metal of the future

Lightweight



1/3 density of steel means lighter vehicles, lower energy consumption and reduced emissions, with the same or even better performance

Recyclability



5% of original energy consumption

Recycling aluminium needs 5% of the energy needed for the primary production

75% of all aluminium ever produced still in use

Formability



Makes it possible to integrate different technologies into one solution, e.g. in buildings

Conductivity



A super-conductor for heat and electricity, twice as good as copper, enabling energy-efficient systems for electrical transmission, such as transfer components

Corrosion resistance



Natural oxide layer protects the metal against corrosion and makes it virtually maintenance free

Alloying technology



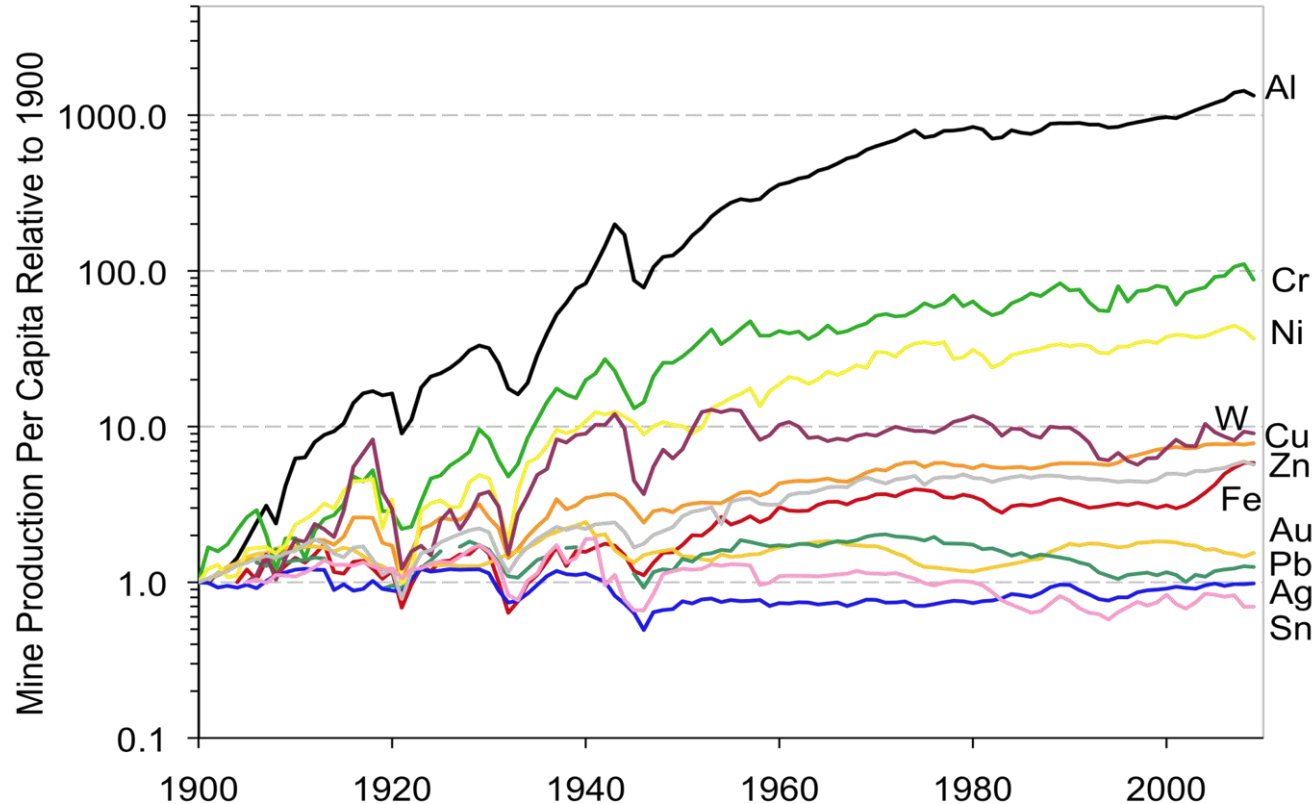
Aluminium can be made hard, soft, stiff, bendable, smooth, temperature resistant etc. depending on the actual need, by developing tailor-made alloys

2 /

Perspectives in a turbulent world

Global per Capita metals use 1900-2008

Material substitution
is our innovative path
for the future



Source: EIT,
Graedel,
Pers. Comm. (2015)

2 / World primary aluminium balance



ktonnes	2016	2017	2018(f)	2019(f)
Production	58 924	63 705	64 699	67 646
Consumption	59 900	63 351	65 956	68 516
Balance	-997	+353	-1 257	-870

2018(f) and 2019(f) balances are based on a “good outcome related to Rusal sanctions”

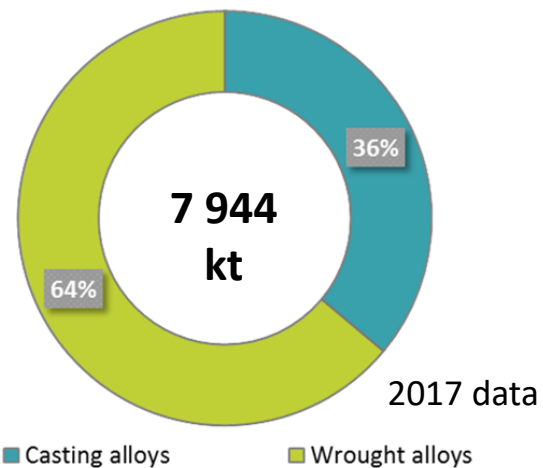
Conclusions: (if Russian metal is available)

- A **negative market** balance is expected for the next 2 years : -1 257 kt in 2018 and - 870 kt in 2019.
- This is **based** on a good outcome related to Rusal sanctions i.e. **no major supply disruption**.

Other remaining risks:

- China:** **Higher production** than expected. They **stopped to report their exports**. No accurate data available.
- High **raw materials costs** (e.g. alumina) for **smelters** and high **scrap availability at low prices** for **recycling** are putting **more pressure** on primary smelters (e.g. N. America, Europe).

2 / Scrap intake statistics: total recycling*



A flat scrap intake market in H1 2018 ytd with significant differences per market...

	H1 2018 vs H1 2017 growth rate (in %)		
	Total	Focus pre consumer scrap	Focus post consumer scrap
Refiners	-8,5%	-14,5%	-1,3%
Remelters	5,3%	4,8%	7,5%
Total*	0,1%	-0,7%	2,2%

Refining: H1 2018 (vs H1 2017) in %

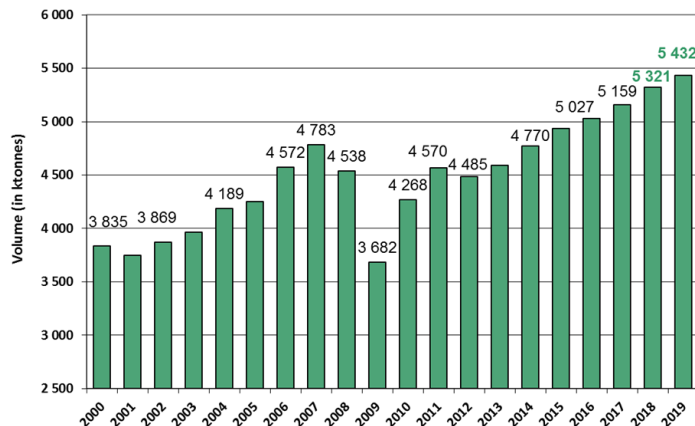
- **Negative growth (-8.5%)** for scrap intake for refiners driven by both pre and post consumer scrap
- **Negative growth** of refining production: **-1.6%**

Remelters: H1 2018 (vs H1 2017) in %

- **Strong growth** of scrap intake for remelters driven by both pre and post consumer scrap...

2 / Flat Rolled Product (FRP) market in Europe

FRP demand in Europe : 2000 – 2019(f)*



H1 2018 market per end use:

Based on H1 2018 data	Trends
Transport	↗ ↗
B&C	↗
Packaging	↗
Foilstocks	→
Technical applications	→
Stockists	→
Imports (from outside Europe)	↗ ↗

- **Shipments in Europe:** 2 426 kt i.e. **+2.6%** and **+62 kt**
- **Exports:** 258 kt i.e. **+10.3%** and **+24 kt**
- **Production:** 2 684 kt i.e. **+3.3%** and **+ 86kt**

Highlights:

- **Positive orders** intake for FRP: **+1.3%** Sep 2018 ytd
- **Ongoing demand** of FRP market in Europe: **+3.1%** for 2018 and **+2.1%** for 2019 **if sufficient Russian metal is available**

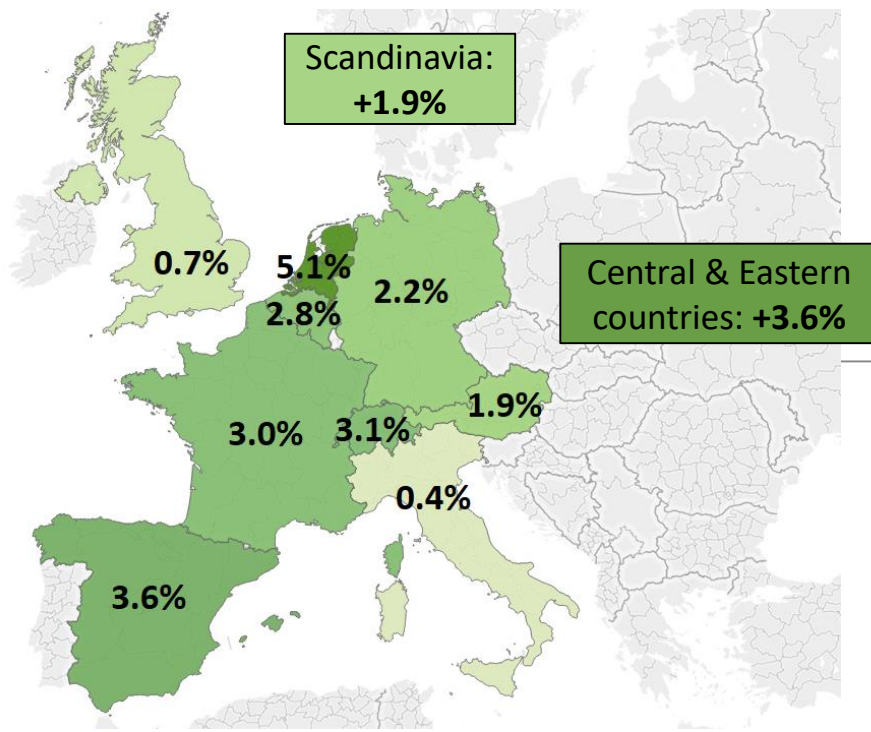
Focus on transport market:

Volume (in ktonnes)	2017	H1 2018	
		kt	%
Automotive	746	377	+2.0%
Mass transport	248	136	+4.8%

2 / Extrusion & tube shipments market in Europe

2018 forecasts*: 3 242 kt

Total Europe: +2.4%



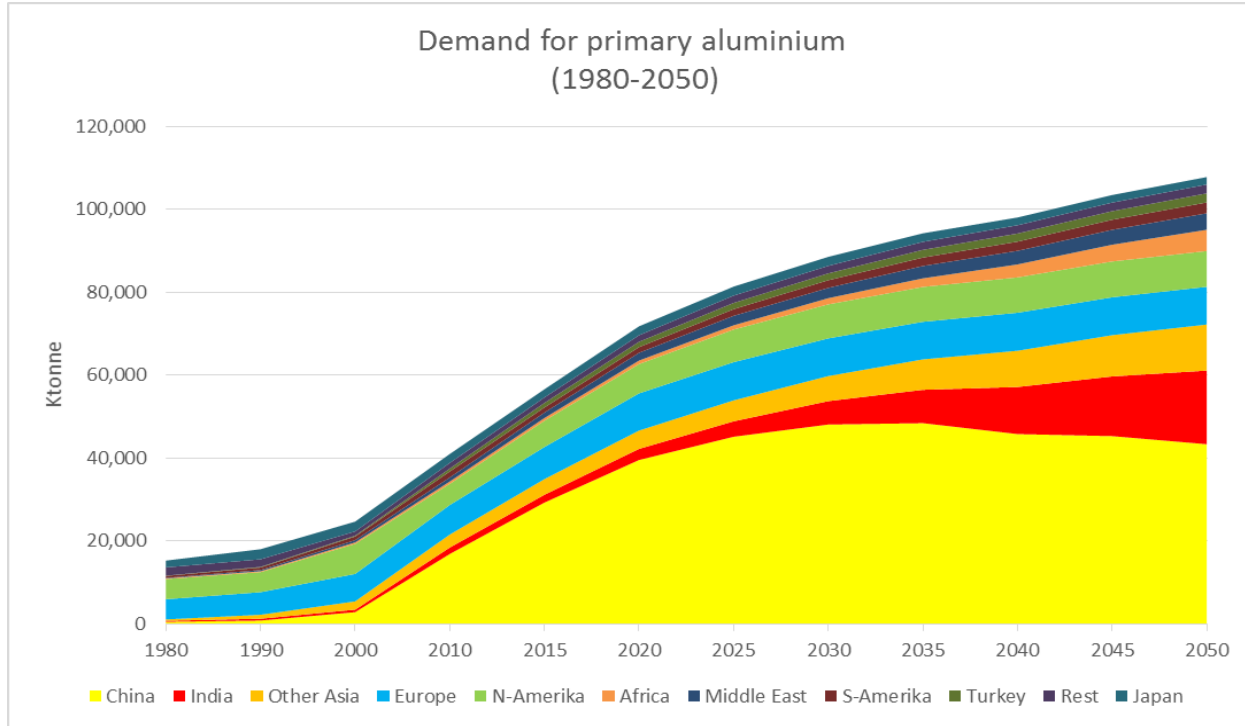
Most segments are positive...

Area	Subtopic	Next 6 months
Transport/ Automotive	Cars	↑
	Trucks & Trailers	↑
	Rail	→
	Others	→
Building and Construction	Building systems	↑
	Others	→
Industry		↑

Highlights:

- **Orders** received from European customers: **-1.2%** and -1.3% including exports in Sep 2018 ytd
- **Positive shipments** forecasts in most countries / regions for 2018 **(+2.4%)** and for 2019 **(+1.8%)** if sufficient Russian metal is available
- Lead time: **4 to 5 weeks**

2 / Projection 2050: demand is strong



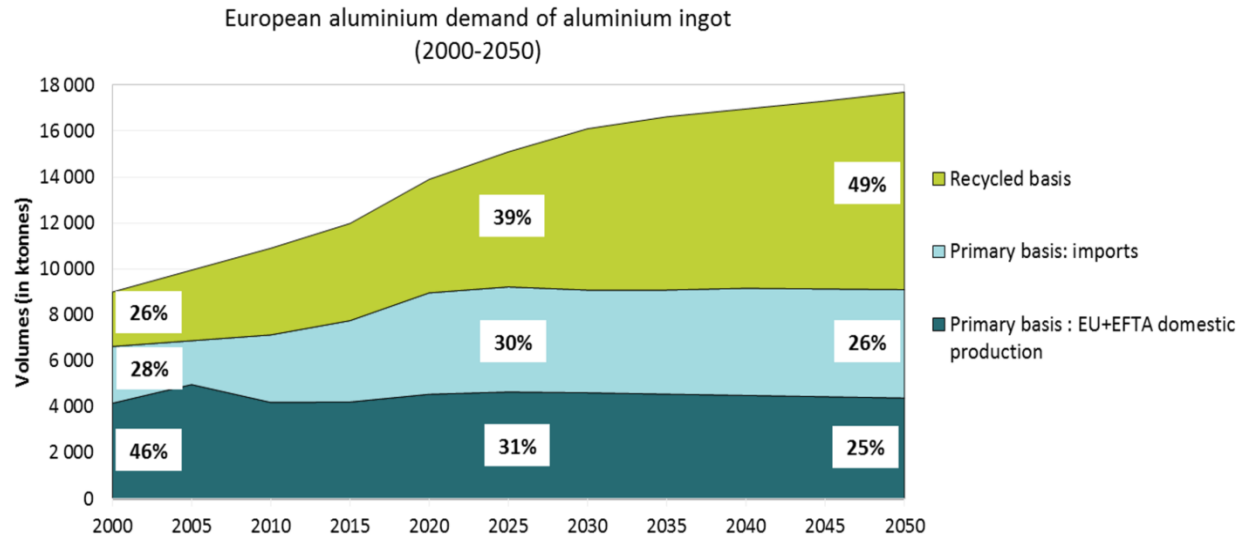
Global demand for primary aluminium is expected to boom by a further 50 percent by 2050, towards **107.8 million tonnes**. **China** will peak around **2035** at **almost 50 million tonnes**.

In the coming decades Europe will need approximately **9 million tonnes of primary aluminium** each year.

Source: CRU Group 2018

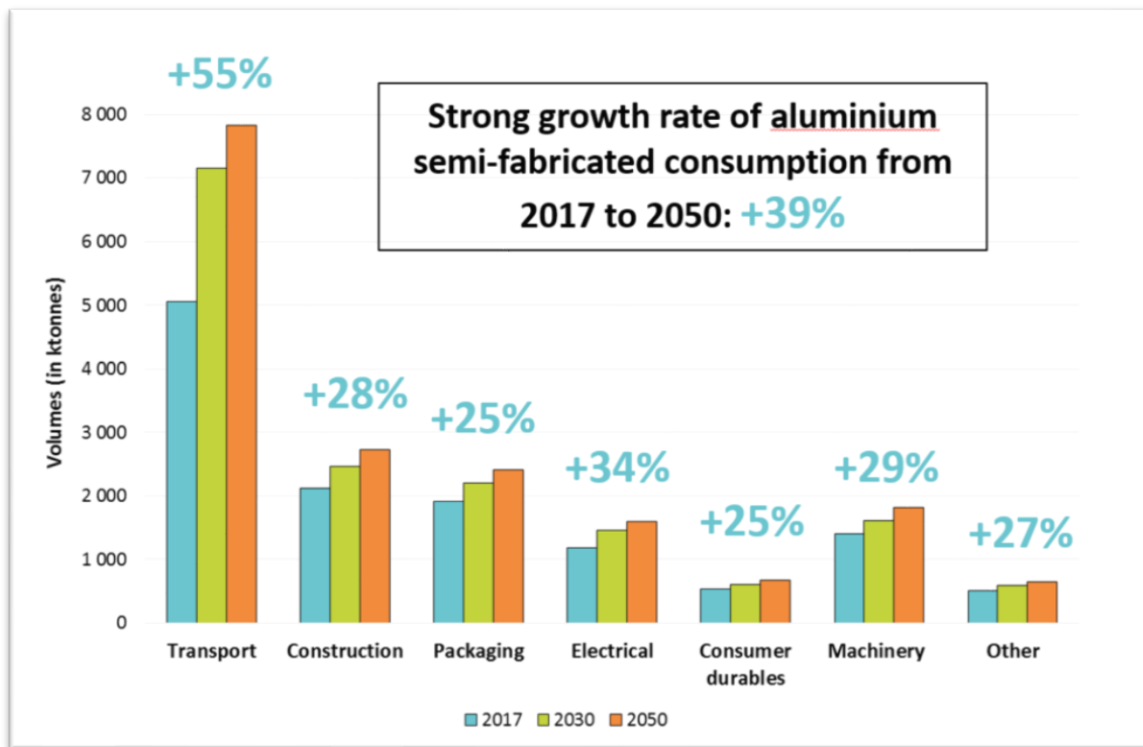
2 / Vision 2050: primary and recycling both needed

- European Aluminium value chain will be a main contributor to a decarbonised economy by 2050 - from production to use phase.
- **Primary aluminium and recycled aluminium will roughly met 50% of the total demand in Europe (EU+EFTA) by 2050.**
- Still 26% of primary aluminium will be imported by 2050.



Source: CRU Group 2018

2 / European semi-fabricated products consumption goes up up



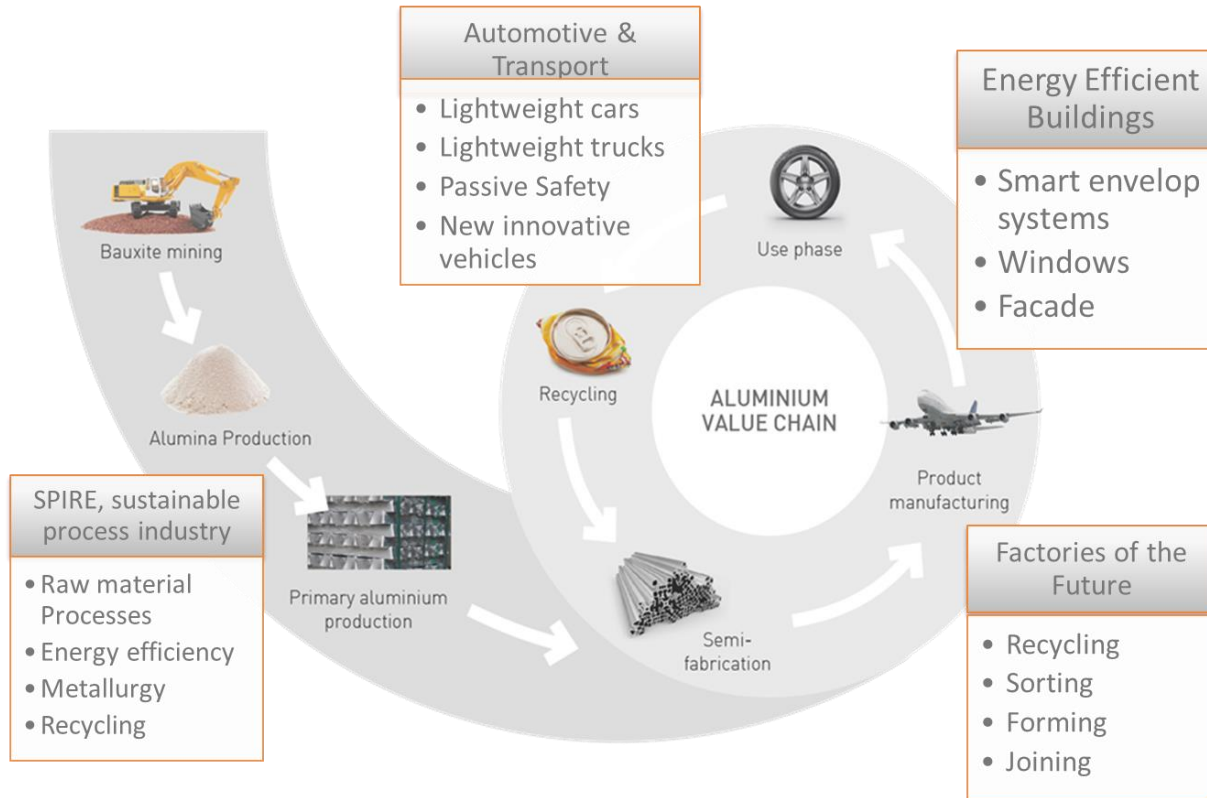
Demand of aluminium is mainly driven by the need to move to a low carbon economy and increasing worldwide regulations to reduce emissions and gain efficiencies in several sectors such as transport, construction, packaging, electrical and others.

Source: European Aluminium based on CRU Group datasets (2018)

3 /

Innovation

3 / Innovation Hub: multi-stakeholder engagement



3 / REMOVAL: Waste EU Flagship project

- The RemovAL project proposal answering call 'H2020-SC5-2016-2017/H2020-SC5-2017-TwoStage' was submitted on 05/09/2017
- It received a **14.5/15.0 score** on 23/11/2017
- The RemovAL EC Grant Agreement 776469-RemovAL was signed by EC on 20/04/2018 and is in effect from **1st of May 2018**
- It has a **4 year** duration and a **11,481,599.13 EUR** of maximum EC contribution
- RemovAL is a consortium of **27 partners from 12 European countries** with 9 large industries, 10 SMEs, 6 Universities/research centres and 2 industrial associations/institutes (Consortium Agreement signed on 30/04/2018)
- Funding agency : **EASME** (Executive Agency for Small and Medium-sized Enterprises)



3 / Other initiatives

- Innovative value chain fully supporting the circular economy
 - RECALSE – “**RE**Cycling-friendly wrought **AL**uminium value chain for a **S**ustainable **E**urope” (submitted in 2017 to SC5-2017 but not selected)
 - INFINAL - “**INFIN**ite circularity for **AL**uminium building products in Europe” (submitted to Life programme in 2018, under evaluation)
- Making aluminium processing more energy efficient
 - **SCALE** – Recovery of Scandium from by-products and production of Sc-Al alloys (running H2020 project)
 - **AlSiCal** - New Alumina production process eliminating bauxite residue and CO2 (project submitted to SC5-09-2018, under evaluation)
 - **Waste2Save** – Recovering & Valorizing waste heat from Aluminium industry (project under evaluation)
 - **Cozmos** – potential use of CCU for Al industry (project under evaluation)
- Making aluminium solutions more efficient
 - **FORMALUB** – Pre-competitive project to optimise Al sheet formability
- Reinforcing and developing PhD network
 - **ALURE** “Structural **ALU**minium for a **R**esilient and sustainable urban **E**nvironment” / DaDiMA “**D**ata and **D**igital twins for efficient product **MA**nufacturing”



4 /

Trade

4 / US Sanctions on Rusal

- On 6 April 2018, RUSAL was added to the list of Specially Designated Nationals and Blocked Persons (“SDNs”) maintained by the Office of Foreign Assets Control (“OFAC”) of the U.S. Department of the Treasury.
- OFAC issued several general licenses (addressing maintenance and wind-down of contractual obligations; and divestment matters)
 - Published FAQ nr. 625
 - The General Licenses 13D, 14A, and 16A: expiration date extended to **12 December 2018**
- Position paper based on intern exchange with members and national associations, together with legal assessments
- Advocacy for a structural solution:, meeting with OFAC, European Commission, Member States, etc.
- Exchange with American Association



4 / Review PEM Convention

- Modernisation of the Regional Convention on pan-Euro-Mediterranean preferential rules of origin (PEM Convention)
- European Aluminium and its membership urges the European Commission to keep the existing rules of origin as they currently stand for the entire aluminium chapter (76) and not allow for relaxation
- Position paper based on exchange with members
- Advocacy: European Commission, Member States, third countries etc.
- RISK: duty free import of products from Gulf region and China

Position on the review of the PEM Convention
European Aluminium
October 2019

1. Who we are and our position on Rules of Origin

European Aluminium is the voice of the entire aluminium value chain in Europe. European Aluminium represents members that have operations in the European Union, Ireland, Liechtenstein, Norway, Switzerland and Turkey. Our 426 members include primary aluminium producers, downstream manufacturers of semi-finished, rolled and cast aluminium, producers of recycled aluminium and national aluminium associations representing more than 400 plants in 32 European countries. We represent 88% of all production in wider Europe from smelting to rolling and extrusion to recycling. Our industry accounts for an annual turnover of approximately 40 billion euro and 1 million direct and indirect jobs.

European Aluminium and its membership urges the European Commission, in the context of the modernisation of the Regional Convention on pan-Euro-Mediterranean preferential rules of origin (PEM Convention) to keep the existing rules of origin as they currently stand for the entire aluminium chapter (76) and not allow for relaxation.

Ex Chapter 76	Aluminium and articles thereof; waste or scrap	Manufacture:
7601	Unwrought aluminium	<ul style="list-style-type: none"> From materials of any heading, except that of the product, and In which the value of all the materials used does not exceed 50% of the ex-works price of the product.
7602	Aluminium waste and scrap	<p>Manufacture from the product</p> <ul style="list-style-type: none"> From metal product, 4 in which it is not a waste or scrap product. <p>Or Manufacture by (i) unwrought aluminium</p>
427601		<ul style="list-style-type: none"> From metal product, 4 having, at all the ex-works

Arrière de Bruguella 12 - 1190 Brussels, Belgium
Phone +32 2 735 6143

Position on the review of the PEM Convention
October 2019

Rules of origin are used to incentivise trade relationships whilst providing an element of reassurance for extra costs via the cost of transportation.

Our request to keep the existing wording of the rules of origin for aluminium (76) in the PEM convention is based on the fundamental that a minimum industrial presence should be required to deem products to be originating from a country. With the relaxed proposals, the presence of industry and production processes in a country is removed as a condition to identify a product as originating from that country.

2. Specific arguments against the relaxation of the rules of origin in the PEM Convention

For products under Combined Nomenclature (CN) code 7601, it is crucial for the European aluminium industry that the rule of origin's kept as it currently stands in the PEM convention, including the alternative processing rule. It is of vital importance for the EU to have its own stable aluminium production. The imports of primary aluminium into the EU already constitute over 50% of domestic demand. A higher import dependency could jeopardise security of supplies and impinge EU's activities in the transition towards greener and decarbonisation production in the EU.

Keeping the first alternative rule of origin for 7601 (change in self-heating and 50% value added) as it currently stands in the PEM convention is crucial for our industry because it effectively requires primary aluminium metal to be created in the EU zone, (based on imported or domestic sourcing).

To understand the production process of primary aluminium metal (see below), it is important to take into account the fact that the added value is created both in the electrolysis and casting stages, together. The 50% added value will be achieved after the completion of the two stages.

The second alternative processing rule¹ for 7601 as it currently stands in the PEM Convention was designed being specific situations in mind: aluminium recycling ('thermal treatment') and production of high purity aluminium ('electrolytic treatment').

¹ Of these 30%, Norway and Iceland together represent about 10% of the dependency.
Manufacture by thermal or electrolytic treatment from unwrought aluminium or waste and scrap of aluminium

European aluminium.eu / 3

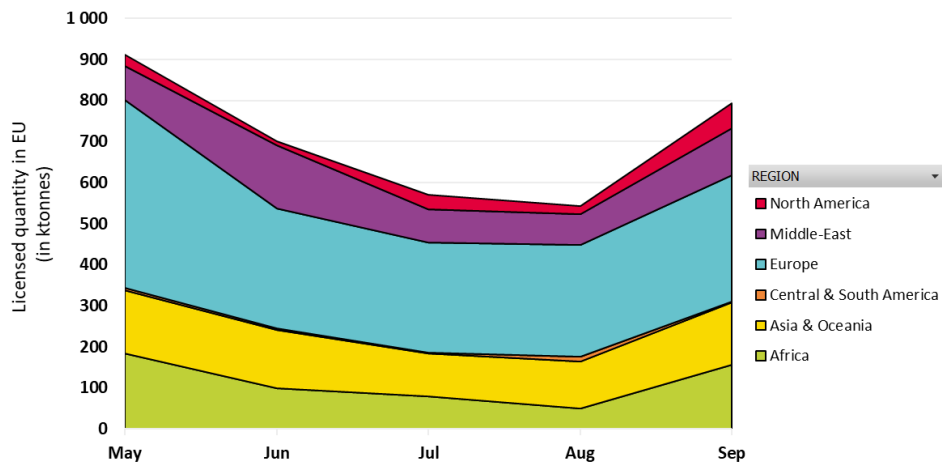
4 / Prior surveillance on imports of aluminium products

- Following the imposition by the US of the Section 232 duties on aluminium products (10%) in May (and the further closing of the US market for Chinese imports), European Commission implemented **a prior surveillance** for certain aluminium products from third countries. Importers must now obtain license.
- European Aluminium aims to monitor the market and receive anticipated trade data in order to be able to react fast if trade diversion to the EU occurs (only in place for aluminium and steel products).
- EU commission continues to put pressure to have duties lifted
- Section 232 on car and car parts? (Link to USMCA agreement)

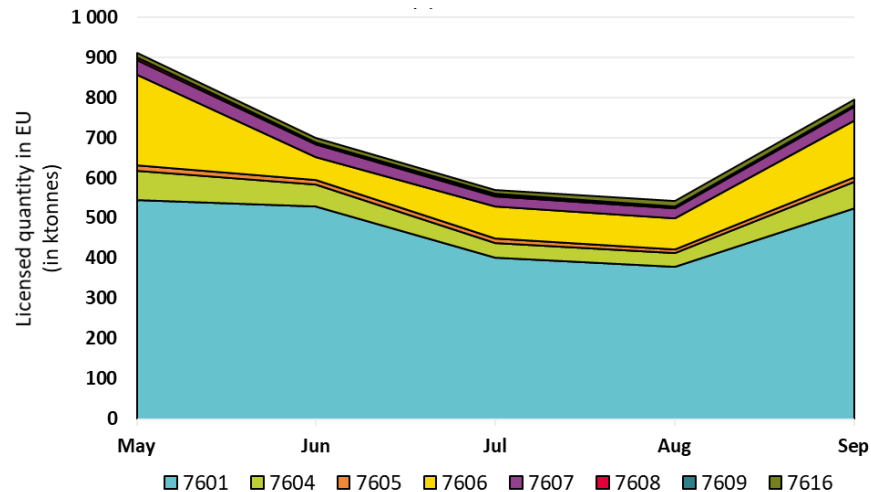


4 / Overview of aluminium chapter*

After a drop in summer, licensed quantity are back at higher level...



Most of the volumes are referring to 7601 followed by 7606...



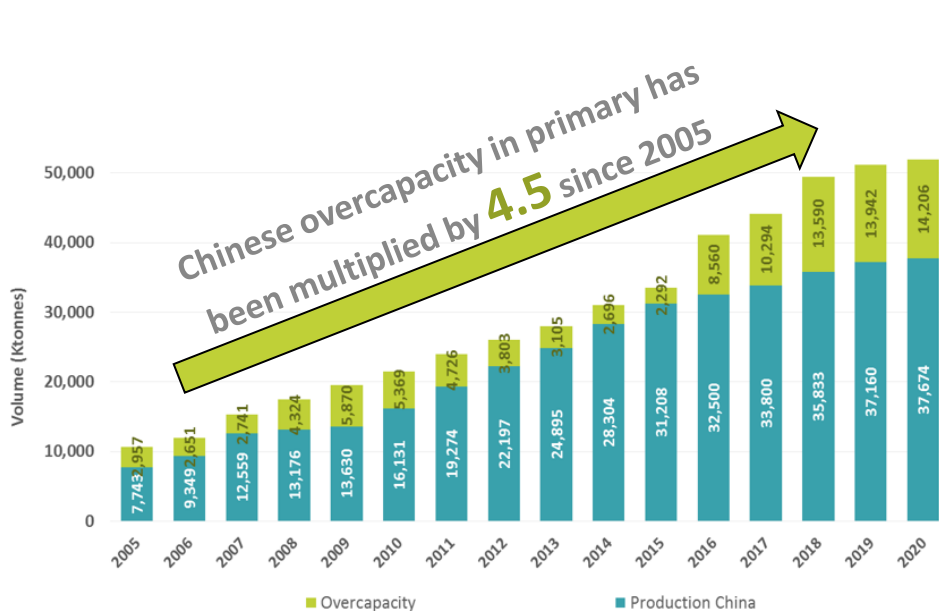
*36 sub products available: 7601 (3 sub codes); 7604 (5 sub codes); 7605 (4 sub codes); 7606 (10 sub codes); 7607 (7 sub codes); 7608 (4 sub codes); 7609 (1 sub code) and 76019 (2 sub codes)

4 / In perspective: China and EU28

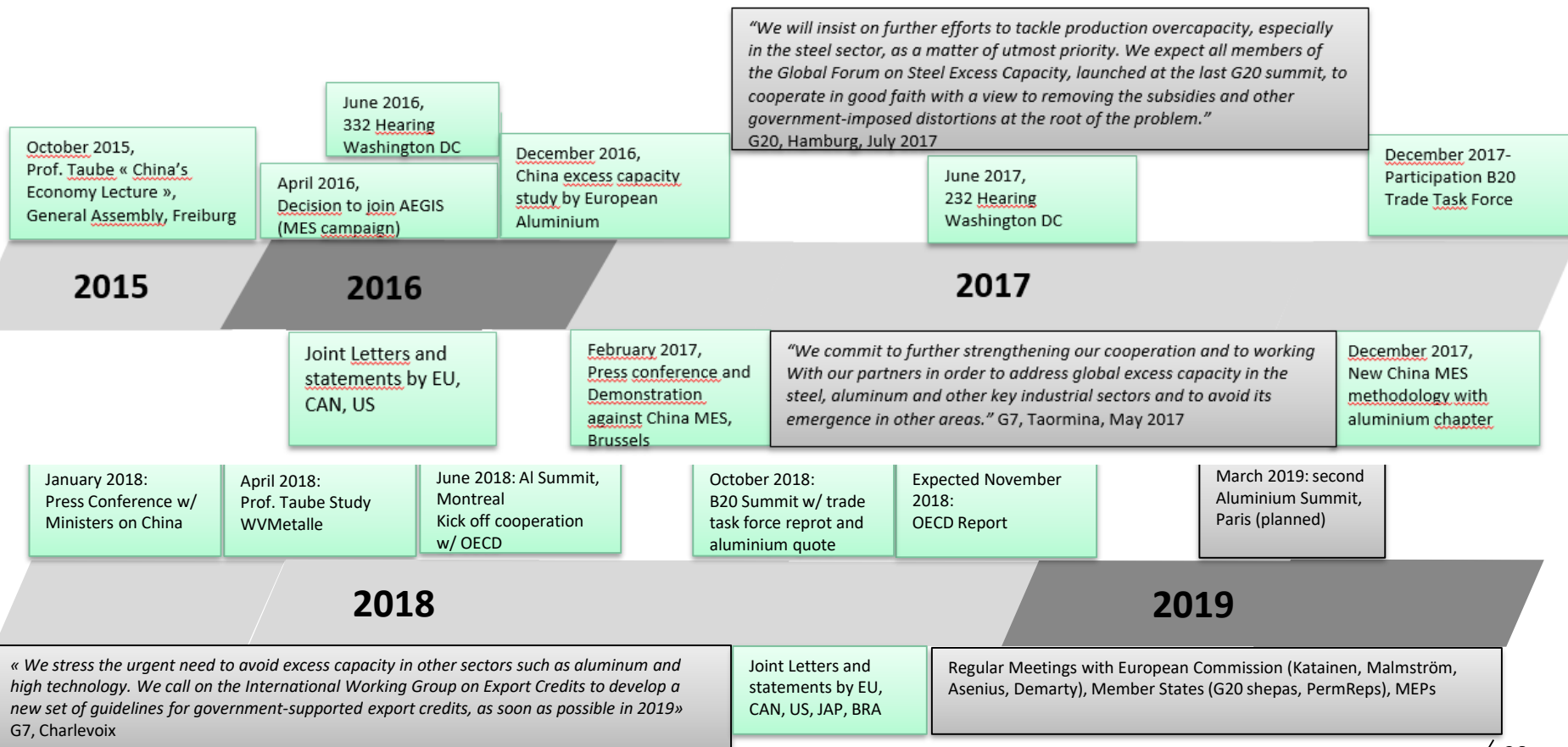
~21 000 Bio € Annual GDP of China	~15 000 Bio € Annual GDP of EU28	2.7 Mio tonnes China's June 2016 <u>monthly</u> production	2.2 Mio tonnes EU's total <u>yearly</u> production	3.5 Mio tonnes China's yearly output going for <u>exports</u> (10%)	2.2 Mio tonnes EU28's total <u>yearly</u> <u>production</u>
~13 000 000 tCO₂eq EU's yearly emissions (scope 1, 2 and 3)	~30 000 000 tCO₂eq What would be <u>added</u> if EU28 capacity was shifted to China	800 000 tonnes <u>Average</u> production of smelter coming on line in China	300 000 tonnes Annual production of EU <u>largest</u> smelter	~85% Share of <u>coal</u> in the electricity grid mix of aluminium smelter in <u>China</u>	~70% Share of <u>low carbon</u> electricity in the grid mix of aluminium smelters in <u>EU28</u>
+180 smelters Number of smelters in China in 2017	16 smelters Number of smelters in EU in 2017	201 000 000 tonnes Aluminium produced by China <u>since 2005</u>	112 000 000 tonnes Aluminium produced in EU28 <u>since 1950</u>	2 500 000 tonnes Yearly output of China's largest smelter	300 000 tonnes Annual production of EU largest smelter
EU28 <ul style="list-style-type: none"> One of the <u>lowest</u> Al carbon footprint One of the region with <u>carbon pricing</u> 	China <ul style="list-style-type: none"> One of the <u>highest</u> Al carbon footprint <u>No</u> carbon pricing system 	~10% EU28's share of the world aluminium production <u>in 2000</u>	~4% EU28's share of the world aluminium production <u>in 2017</u>	~11% China's share of world aluminium production <u>in 2000</u>	~55% China's share of world aluminium production <u>in 2017</u>

4 / A systemic Chinese overcapacity in aluminium...

Chinese overcapacity in primary is 5 time bigger than EU production...



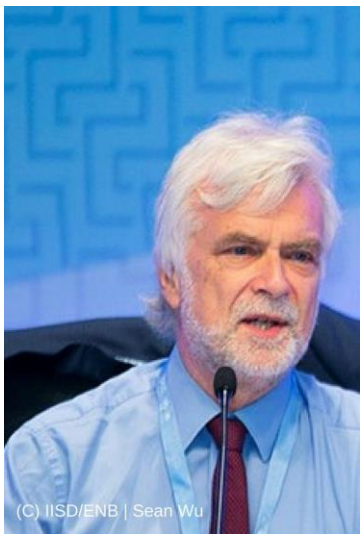
4 / Roadmap and Action Plan to a sustainable global Aluminium Market



5 /

Sustainability

5 / IPCC report: Net emissions of CO₂ must reach zero by 2050



(C) IISD/ENB | Sean Wu

Jim Skea
Co-Chair, WG III

Incheon, 8 October 2018

Limiting warming to 1.5°C is possible within the laws of chemistry and physics but doing so would require unprecedented changes.

Greenhouse gas emissions pathways

- To limit warming to 1.5°C, CO₂ emissions fall by about 45% by 2030 (from 2010 levels)
 - Compared to 20% for 2°C
- To limit warming to 1.5°C, CO₂ emissions would need to reach 'net zero' around 2050
 - Compared to around 2075 for 2°C
- Reducing non-CO₂ emissions would have direct and immediate health benefits

5 / But this is not only about CO2



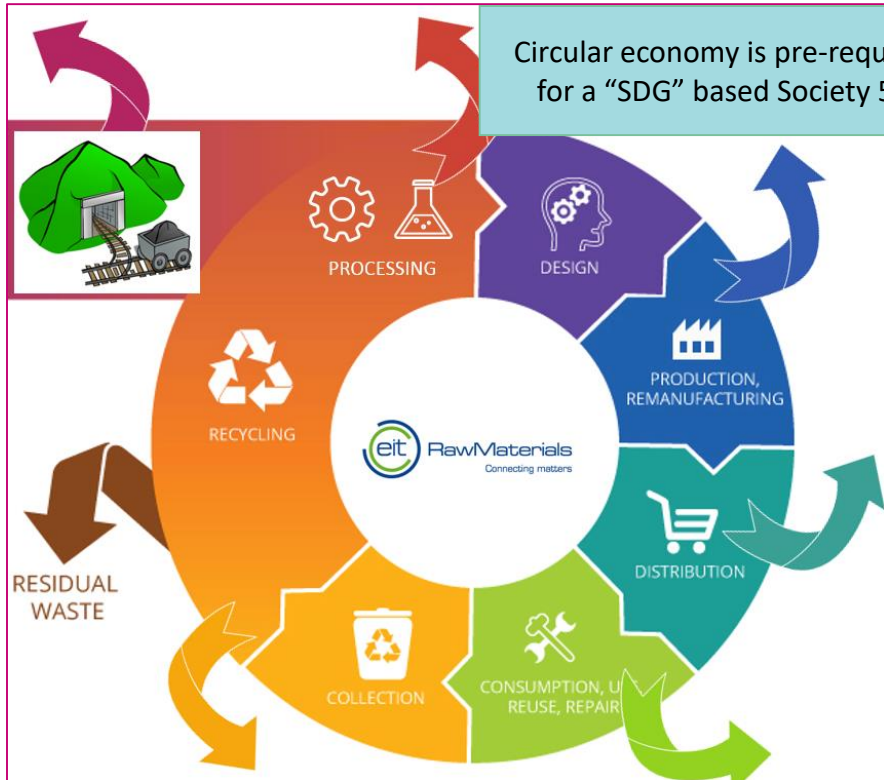
Limiting global warming to 1.5°C compared with 2°C would reduce challenging impacts on ecosystems, human health and well-being, making it easier to achieve the United Nations Sustainable Development Goals.

Climate change and people

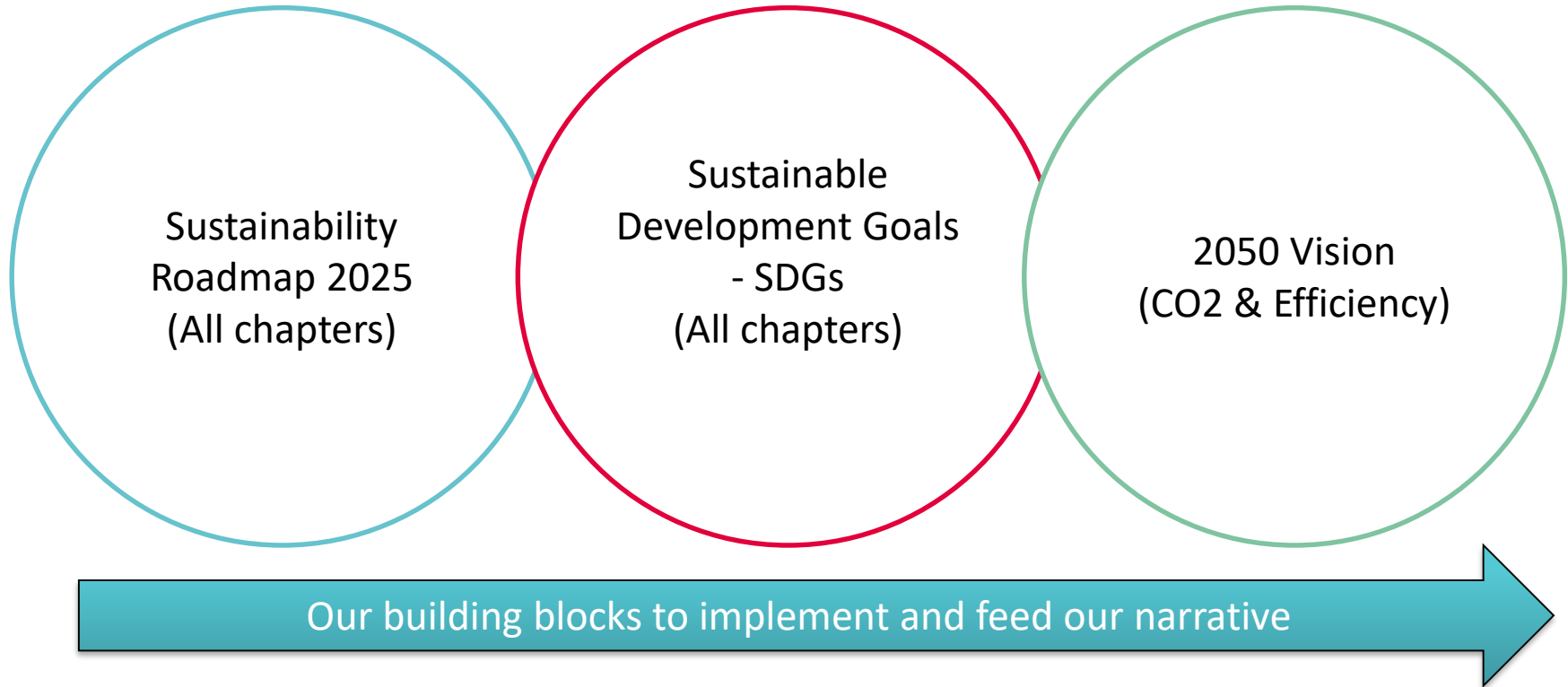
- Close links to United Nations Sustainable Development Goals (SDGs)
- Mix of measures to adapt to climate change and reduce emissions can have benefits for SDGs
- National and sub-national authorities, civil society, the private sector, indigenous peoples and local communities can support ambitious action
- International cooperation is a critical part of limiting warming to 1.5°C

Priyadarshi Shukla
Co-Chair, WGIII
Incheon, 8 October 2018

5 / Short-term and long-term perspectives



5 / European Aluminium Sustainability programme



5 / Key goals for our sector



5 / The industrial race is on!



EUROFER
The European Steel Association



FuelsEurope
REFINING PRODUCTS FOR OUR EVERYDAY LIFE

GLASS
FOR · EUROPE



- European Commission plans to unveil a **zero carbon economy plan for 2050** or at least a reduction of **85-90% of GHG** this year.
- Chemicals, Fuels, Steel, Paper, Glass are all working on 2050 roadmaps.

5 / Strategic aim for a long term succesful industry

LONG TERM VIEW

Decarbonising the entire value chain
Sustainable business & financing
Circular business models – Lifecycle thinking
Tackling overcapacities and illegal subsidies
Strengthening competitiveness and innovation

SHORT TERM VIEW

Trade (232) – Sanctions –
Rules of Origin –
Energy / ETS / State Aid
rules – Lightweighting –
Building Efficiency –
Circular Economy –
Recycling – Scrap flows –
Standard setting

2018



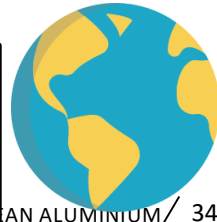
Acceleration towards low
carbon economy via tough
regulation

2030



New industrial base in
Europe with winners and
losers

2050



5 / What key stakeholders are saying



EU Vice-President
J. Katainen

« We need to assess aluminium breakthrough projects and promote circularity »



DG Energy D. Ristori
Director General

« Aluminium is a strategic material and should play a critical role for a new green industrial policy »



EU Trade Commissioner
C. Malmström

« It's important to cooperate with your industry to reinforce the multilateral trade system »



DG Research
Deputy Director General
S. Ratso

« We have to find room for EU funding in the next EU political term. Aluminium has a great potential to innovate »

5 / Manifesto I+ : inspiring decision makers for EU elections

Micro-site feedback



More than **300** supporters / **300** decision makers informed / **+25** meetings on-going

"A great idea to raise awareness about the important role that industry plays for boosting jobs and growth in Europe."

"Industry in Europe has the knowledge and resources to improve the world if we do it together. Our Industry can help with this! This must be understood by our politicians!"

Great on line visibility:

More than **5.7K** views on our YouTube videos More than **24.4k** Twitter impressions

5 / 15th International Aluminium Recycling Congress

26-27 February 2019, Colmar (France)

The Congress is one of the leading aluminium recycling events today and an excellent platform to meet, exchange views and cultivate new relationships with representatives of the entire aluminium value chain.

The Congress will focus on the aluminium recycling dynamics, prospects and challenges, with high level speakers debating about developments of the circular economy in the new political landscape and sharing insights into strategies and solutions that are empowering sustainable decisions.

The 2019 edition will take place in Colmar and includes a visit to the Constellium aluminium plant in Neuf-Brisach, France. Expecting 150 participants.



Recycling in a new circular economy landscape



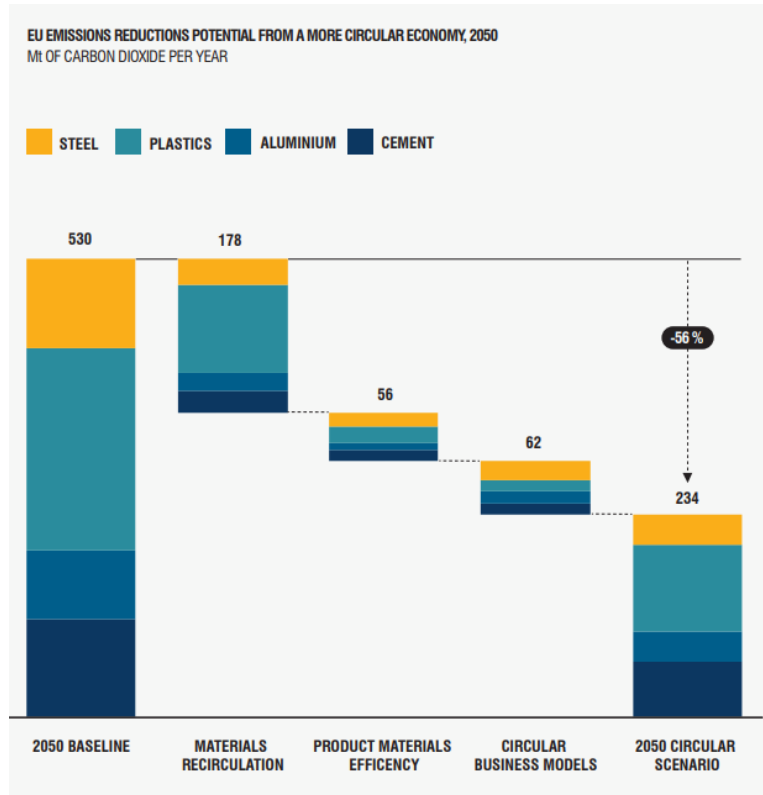


/ Questions? Contact us!

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EUROPEAN ALUMINIUM

More potential from the circular economy



A more circular economy can make deep cuts to emissions from heavy industry: in an ambitious scenario, as much as 296 million tonnes CO₂ per year in the EU by 2050, out of 530 in total – and some 3.6 billion tonnes per year globally.