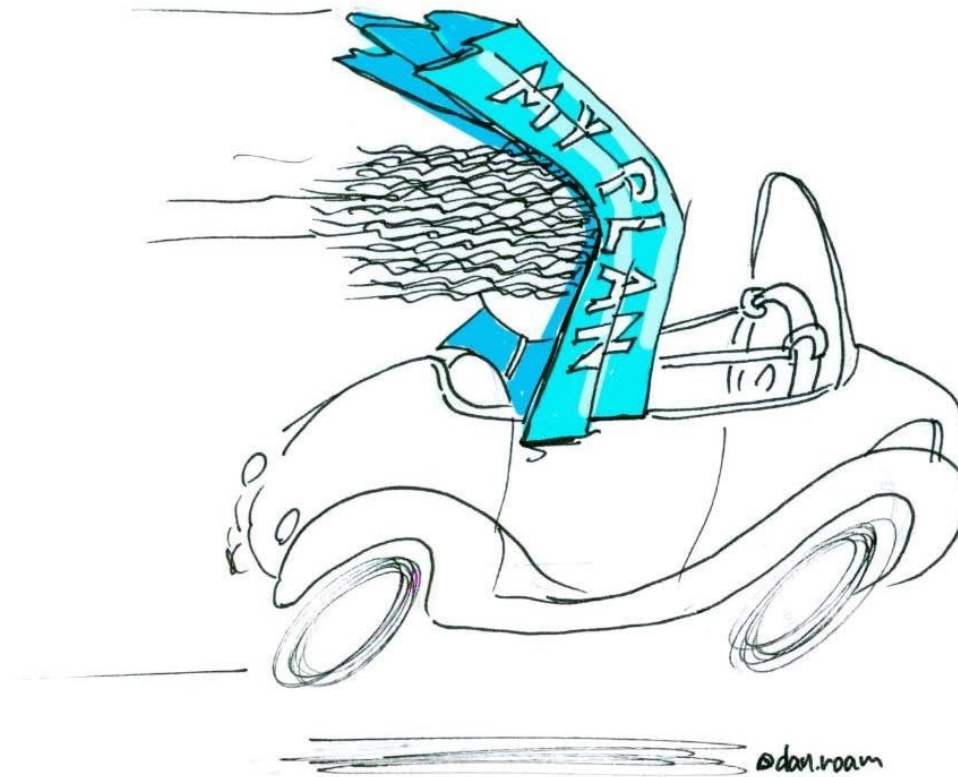




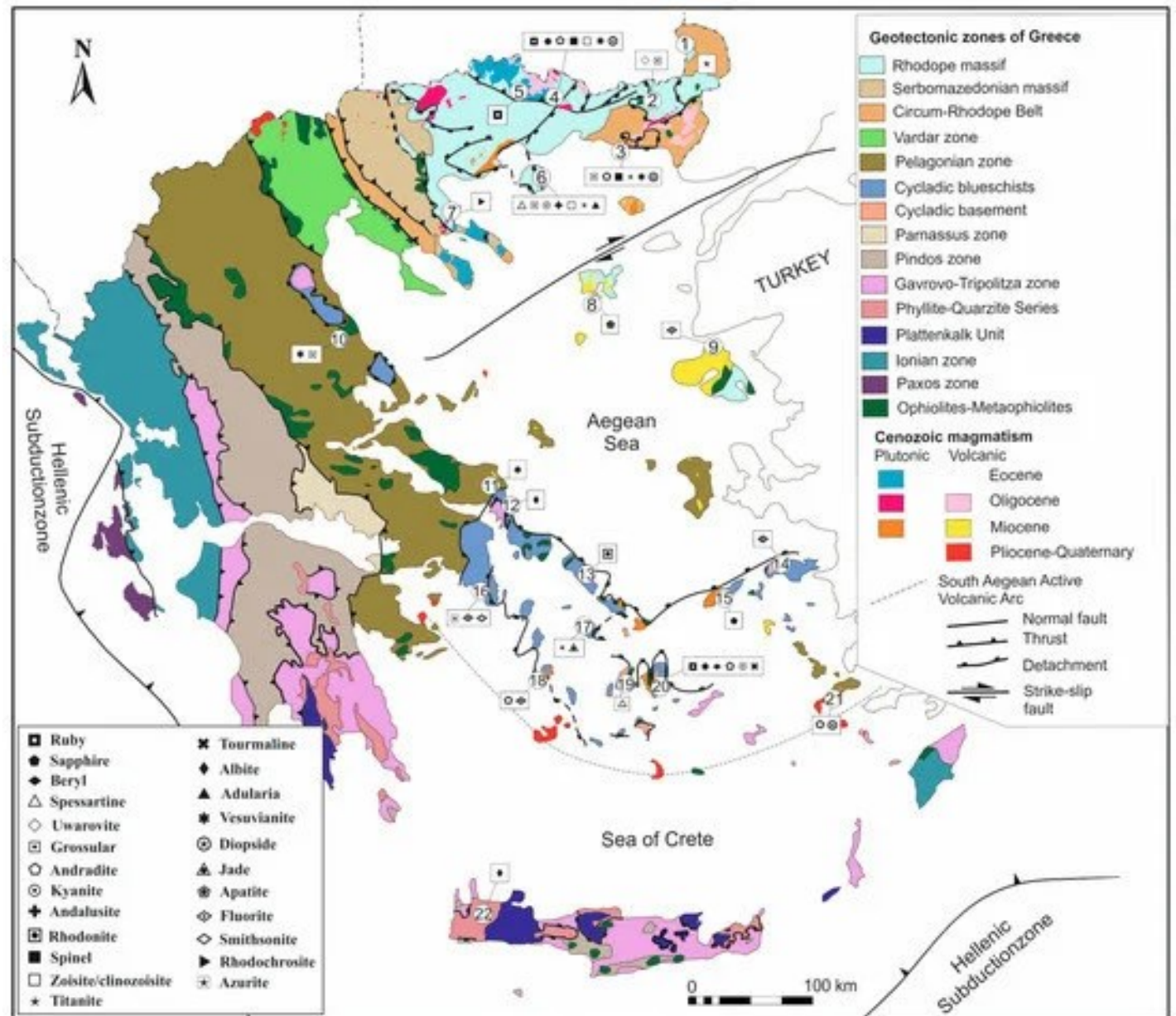
Dynamics of the Greek extractive industry

- *K. Yazitzoglou, Chairman
Greek Mining Enterprises
Association*

IS A BAD
PLAN
BETTER
THAN NO
PLAN AT ALL?



Supply ...



Critical & strategic RM in Greece

Active extraction	Planned extraction	Idling extraction	Indication
Bauxite	Copper	Antimony	Arsenic
Nickel and Cobalt		Baryte	Gallium
Magnesite		Feldspar	Rare earths
Quartz		Manganese	Scandium
			Tungsten
			Germanium
			Graphite

The
Others !

Aggregates

Attapulgitite

Bentonite

Calcium
Carbonate

Gold /
silver

Gypsum

Lead &
Zinc

Lignite

Marble

Perlite

Pozzolan

Pumice

Let's find out
what we
have



Let's discuss
about
demand.....



Metal	Element	Total metal required produce one generation of technology units to phase out fossil fuels (tonnes)	Global Metal Production 2019 (tonnes)	Year to produce metal at 2019 rates of production (years)
Copper	Cu	4 575 523 674	24 200 000	189,1
Nickel	Ni	940 578 114	2 350 142	400,2
Lithium	Li	944 150 293	95 177	9920,7
Cobalt	Co	218 396 990	126 012	1733,0
Graphite (natural flake)	C	8 973 640 257	1 156 300 ♦	3287,9
Graphite (synthetic)	C		1 573 000 ♦	-
Silicon (Metallurgical)	Si	49 571 460	8 410 000	5,9
Vandium	V	681 865 986	96 000 *	7101,2
<u>Rare Earth Metals</u>				
	-			
Neodymium	Nd	965 183	23 900	40,4
Germanium	Ge	4 163 162	14 000	29113,0
Lanthanum	La	5 970 738	35 800	166,8
Praseodymium	Pr	235 387	7 500	31,4
Dysprosium	Dy	196 207	1 000	196,2
Terbium	Tb	16 771	280	59,9

* Estimated from mining production. All other values are refining production values.

♦ Natural flake graphite and synthetic graphite was combined to estimate total production

(Source: BGR 2021, USGS, Friedrichs 2022)

A few more
numbers

	Ni	Co	Li
Per battery (kg)	35	15	8
For 100 mio evs (million tons)	3.5	1.5	0.8
Today's production	3.0	0.16	0.13
Extra production	116%	837%	515%

For
commodities
(goods with
finite supply)

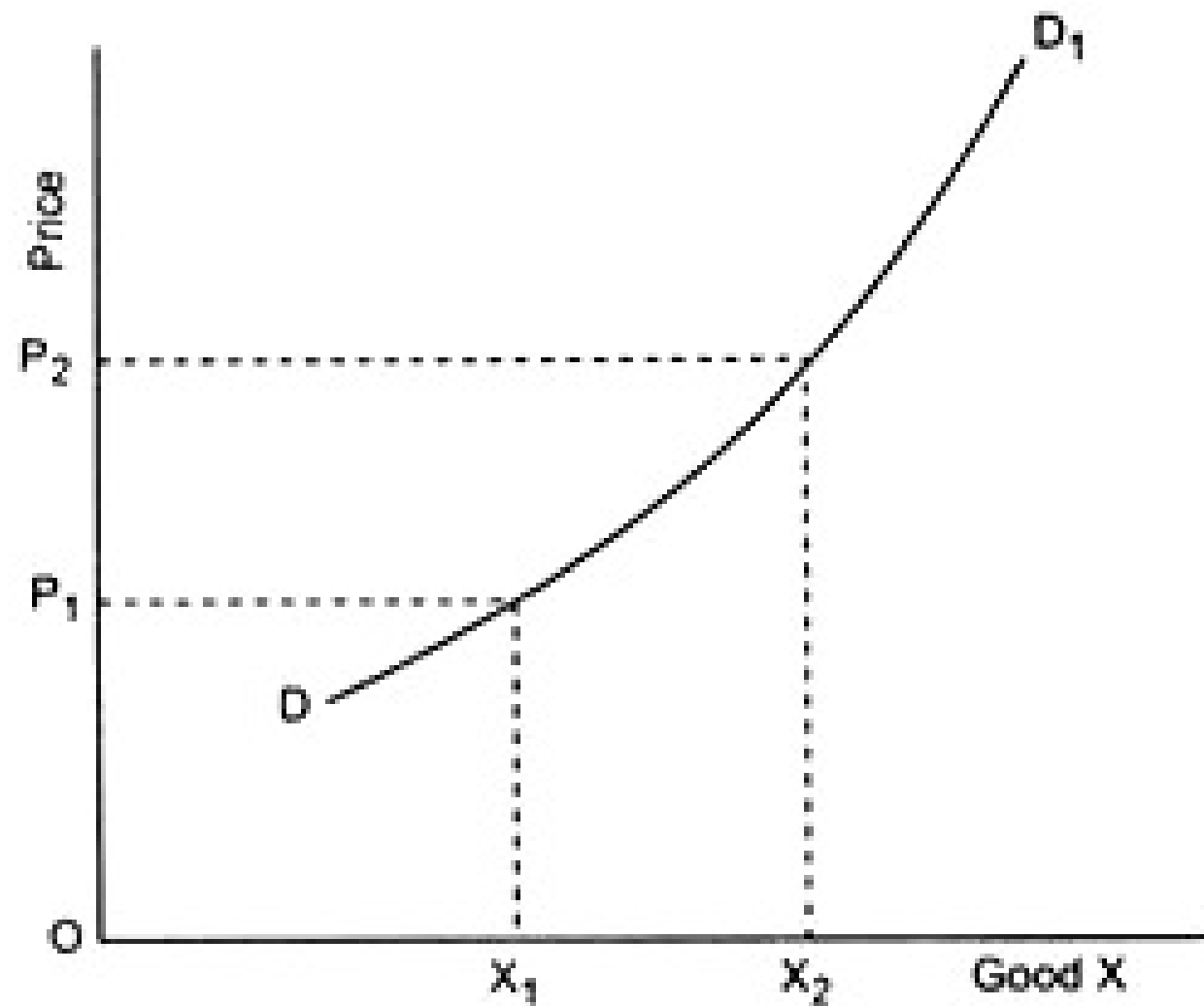
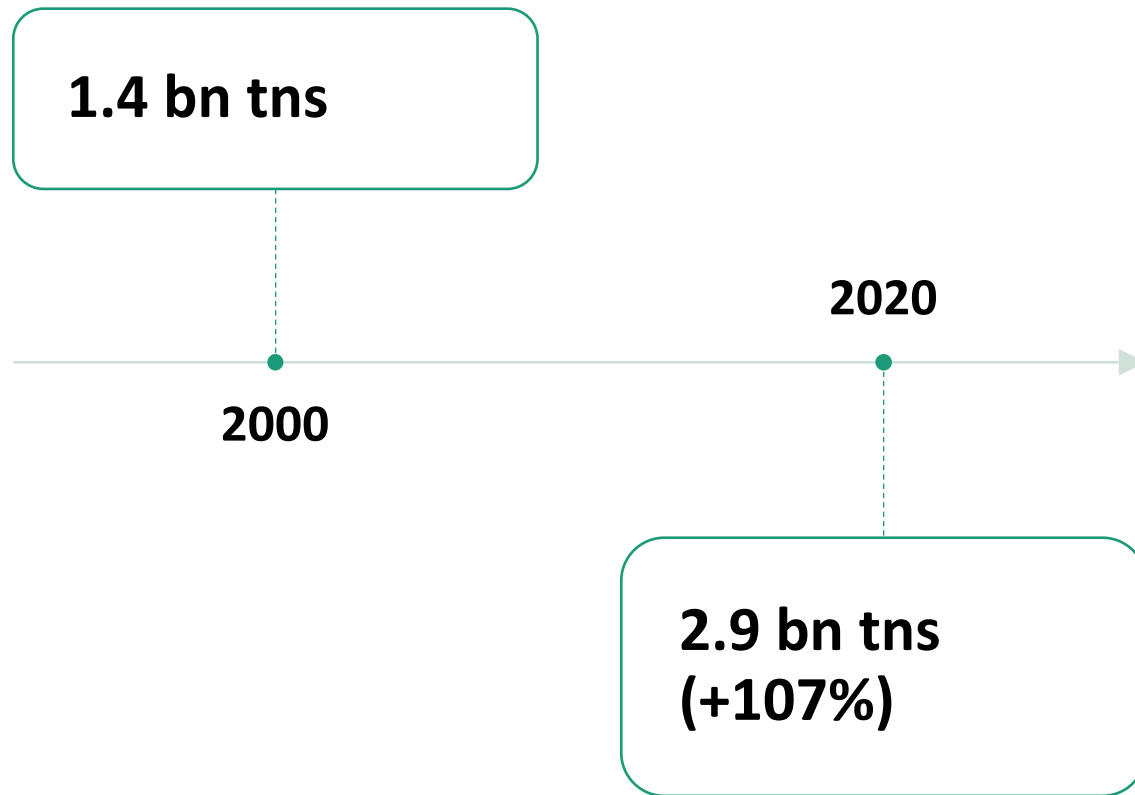


Fig. 17.2

Global production excluding energy and aggregates



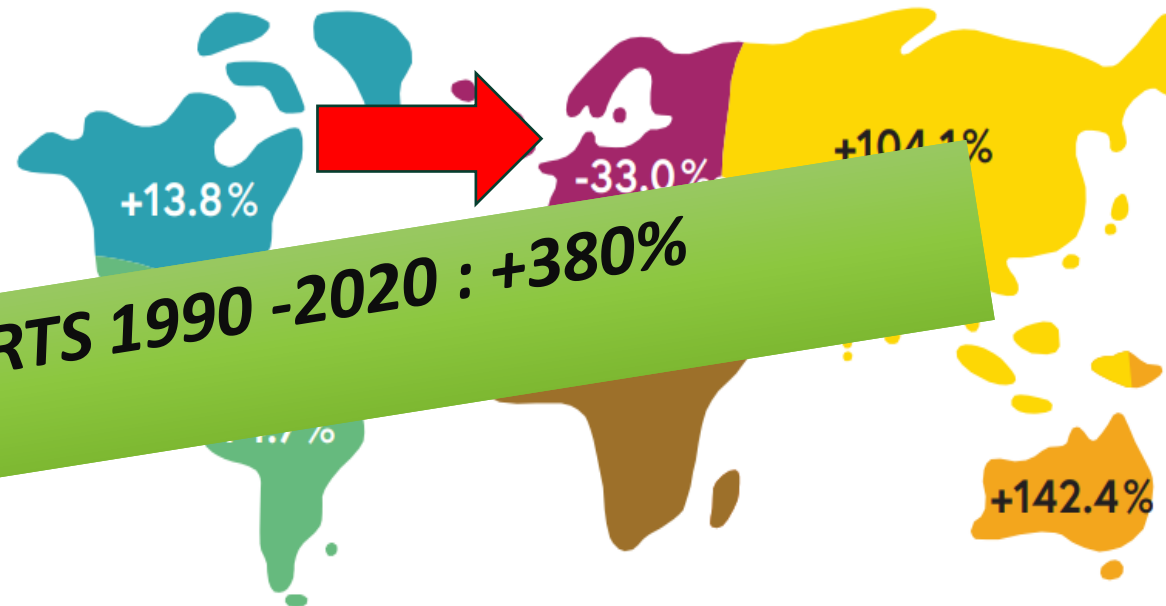
GLOBAL GDP 2000-2020 : +78%

Let's talk about production.....

China is world's largest producer of 31 different commodities:

- 4 Iron and Ferro-Alloy Metals:
Mo, Ti, W, V
- 15 Non-Ferrous Metals:
Al, Sb, As, Bi, Cd, Ga, Ge, In, Pb, Hg, REE, Se, Te, Sn, Zn
- 1 Precious Metal: Au
- 9 Industrial Minerals:
Bentonite, Fluorspar, Gypsum, Magnesite, Salt, Sulfur, Talc
- 2 Mineral Fuels:
Steam Coal, Coking Coal

Δ 2000/2020 - declining production rates since 2000 only in Europe



EU GDP : + 40%

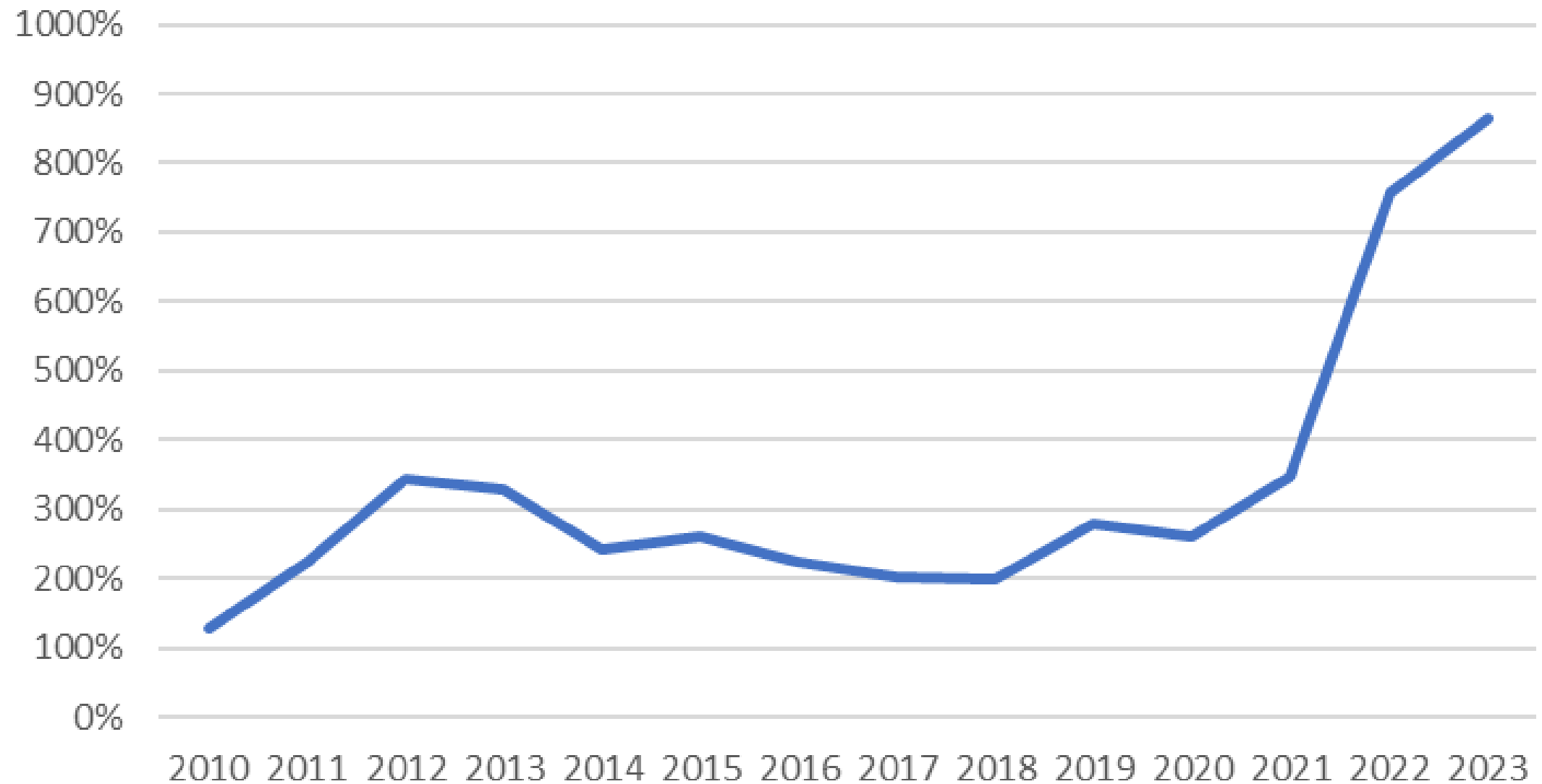
EU IMPORTS : + 160%

World Mining Data 2022

BUT WE
BECAUSE WE ARE NOT
COMPETITIVE !!!



EU vs US NAT. GAS TOTAL COST



Let's talk about action !!!!!!!!!!!!!!!



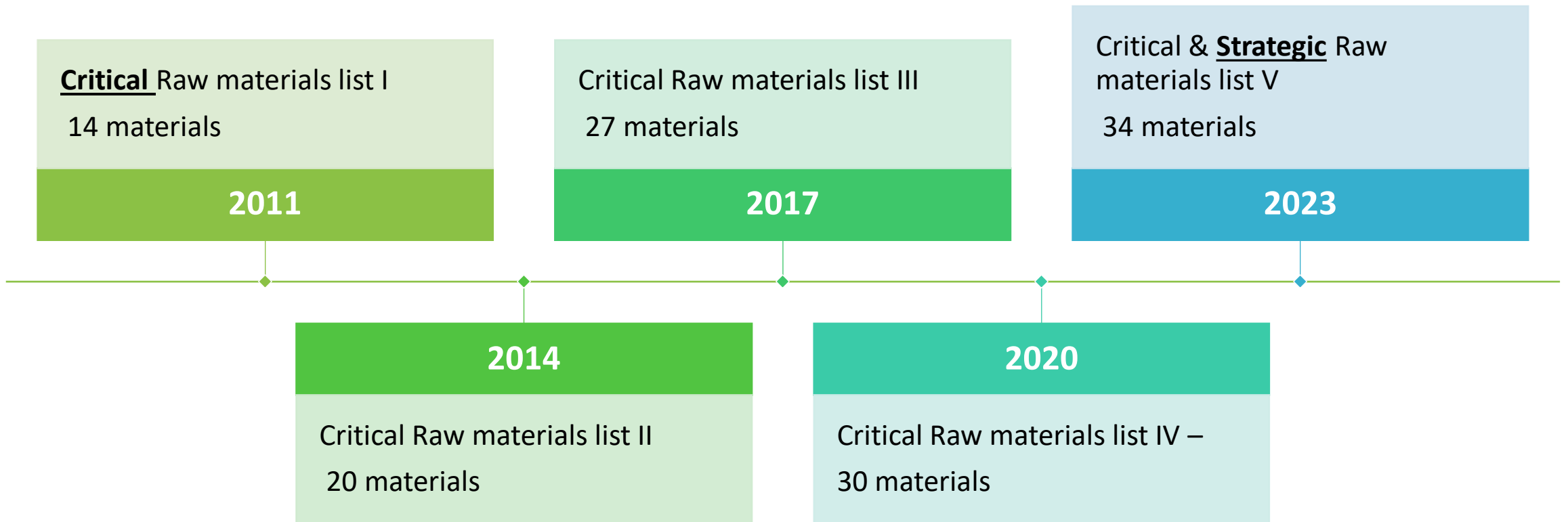
COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 4.11.2008
COM(2008) 699 final

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

The raw materials initiative — meeting our critical needs for growth and jobs in Europe

Let's talk about action !!!!!!!!!!!!!!!!



President of the European Commission, Ursula von der Leyen said:

“This Act will bring us closer to our climate ambitions. It will significantly improve the refining, processing and recycling of critical raw materials here in Europe”

Action plan to increase raw materials production in the EU

- Creating secure and resilient EU critical raw materials supply chains
- Investing in research, innovation and skills
- Protecting the environment by improving circularity and sustainability of critical raw materials
- Further develop Strategic partnerships

Creating secure and resilient EU critical raw materials supply chains:

- The Act will reduce the administrative burden and simplify permitting procedures for critical raw materials projects in the EU. In addition, selected Strategic Projects will benefit from support for access to finance and shorter permitting timeframes (24 months for extraction permits and 12 months for processing and recycling permits).

(My) closing remarks

CRMA is a *small first* step to the right direction..

JAN MOSTROM –EUROMINES

The EU is not at 5 minutes before midnight but at 3 minutes before midnight...

FREDERIC PERSSON – BUSINESS EUROPE

EU is watching its industry going down and does nothing ..

EVAGGELOS MYTILINEOS - EUROMETAUX

Eventually,
the question
should be.....

***Can we afford
to wait another
15 years before
the next
REGULATION ??***

