



Industrial Innovation Harbour presentation

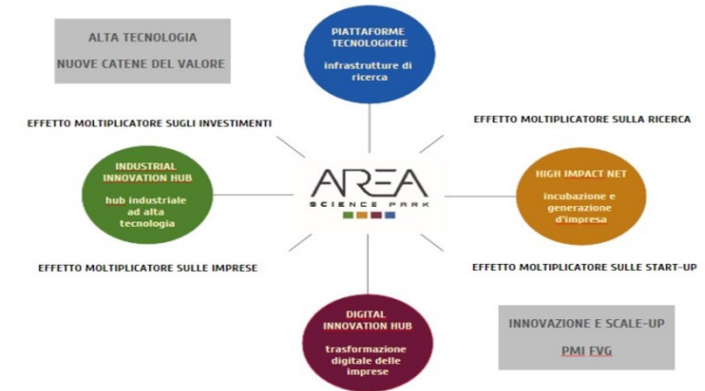
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@ AREA Science Park/Innovation and Complex System Department

IIH-Industrial Innovation Harbour (a special project of the strategic programme ARGO)

Goals (2018-2020)

- Create an **innovative model for the planning, the management and the development of an experimental industrial area** (key words: eco-sustainable & light production, food & health, bio-nano medicine, new and advanced materials) within the duty free zone areas of Trieste, in close collaboration with regional policy makers;
- Create the **right conditions for attracting new investments** by domestic and foreign hi-tech manufacturing companies within the "FREEWAY Trieste" public-private initiative within the Industrial Innovation Harbor;
- Start an **experimental competence centre on critical raw materials recovery** also with pilot and demonstration plants, enhancing WEEE-Waste from Electrical and Electronic Equipment exploitation according to the well-known Community principle of "urban mining" with the support of the European Commission's Joint Research Center;
- Encourage **the creation**, in the framework of industrial development initiatives, **of new high-value added jobs** (with an estimation of more than 1300 units in 4 years of operation).



IIH-Industrial Innovation Harbour value proposition

Triest, expand your business.



Port Network Authority
of the Eastern Adriatic Sea
Port of Trieste



**R&D
Laboratories**



**Gate for the
New Silk Road**



**Free Port
& Tax
Advantages**



**Advanced
Logistic
Services**



**Opportunities
for Logistics
and Light
Manufacturing**



**High-Tech
Production**



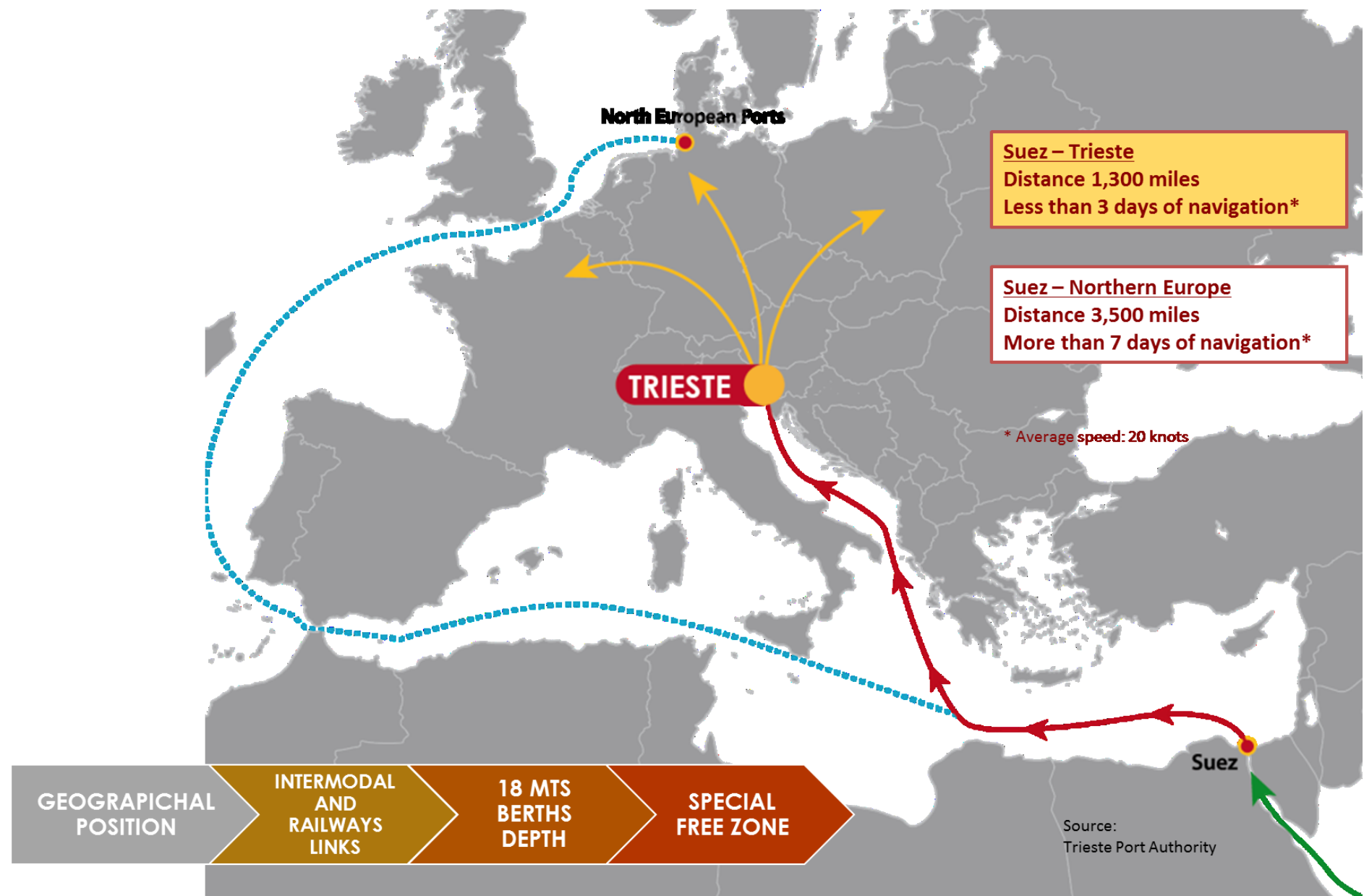
**Industrial Areas for Innovative
and High-Tech Activities**



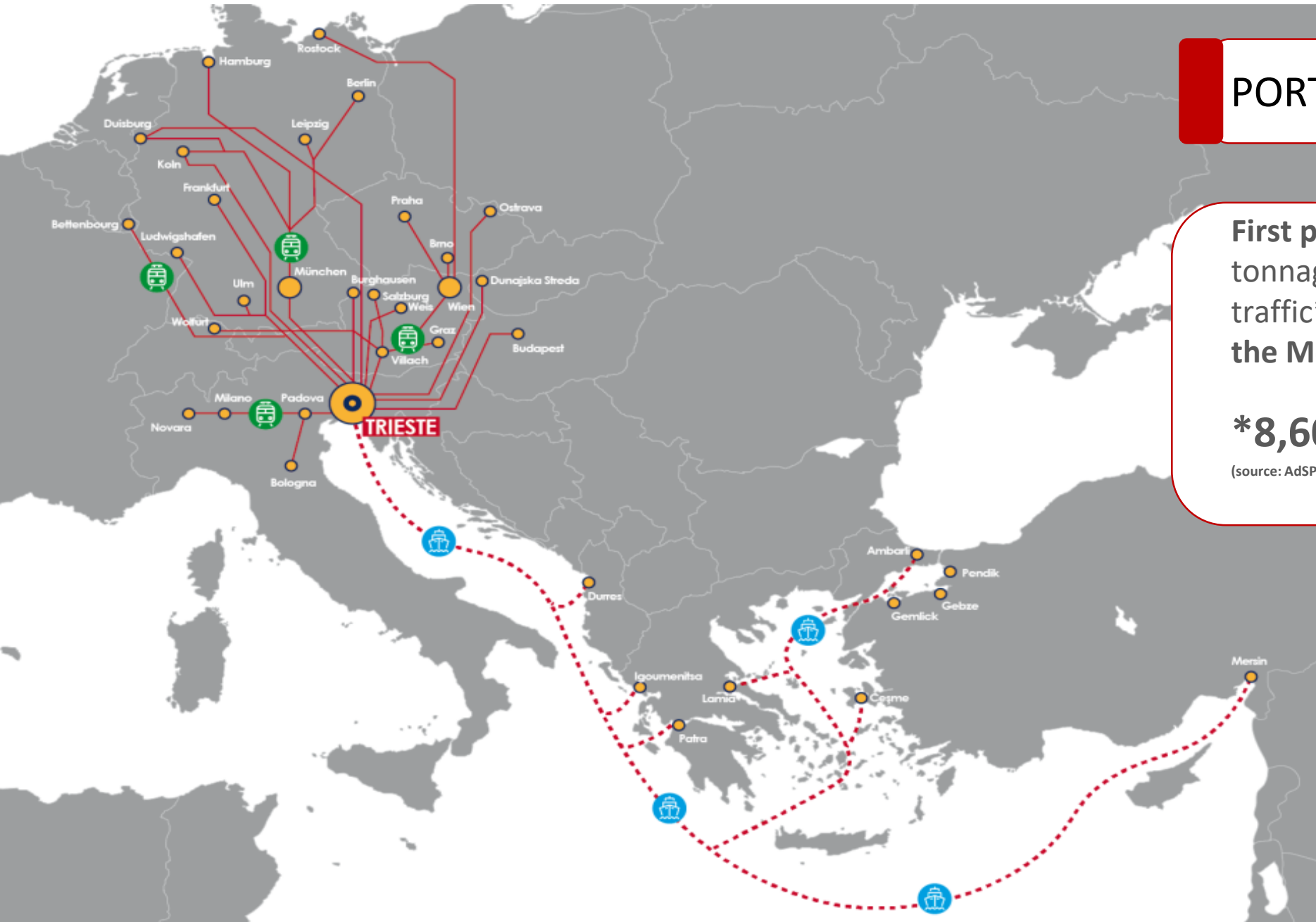
**Competence Center
on Circular Economy**

Opportunity

01. Gate for the New Silk Road



01. Gate for the New Silk Road



PORT OF TRIESTE statistics

First port in Italy for total movement tonnage, first Italian port for railroad traffic* and **first petroleum port in the Mediterranean** (source: Assoporti, 2017)

***8,600 Trains/Year**

(source: AdSPMAO, 2017)

02. Free custom port

- **Free Port of Trieste** established by the Peace Treaty of 1947
- **5 distinct Free Zones** (possibility to extend)
- Permitted operations: warehousing, storing, examining, sorting, packing and repacking, **manufacturing and industrial processing**
- Any goods (**EU and non-EU**) may be placed in the Free Port of Trieste
- **No time limit** on the storage of goods
- **No guarantees are requested** when the goods are in the Free Port
- **No import duties**, VAT or other import charges on non-EU goods
- The **customs origin of goods can be maintained**
- Payment of customs duties and fiscal border duties can be **deferred by up to 6 months**

02. Free custom port

INDUSTRIAL PROCESSING OF FOREIGN GOODS DESTINED FOR FOREIGN MARKETS:

- No customs formalities or fees
- No import duties, VAT and other import charges are charged on non-EU goods in the Free Zone
- No excise duty on fuel and energy consumed for industrial activities with products for export
- Finished products may obtain the certification of italian origin (depending on the type of processing)

INDUSTRIAL PROCESSING OF FOREIGN GOODS DESTINED FOR NATIONAL AND EU MARKETS:

- No advance payment of customs duties
- Possibility of acquiring the “made in italy” label
- Payment of duties on the raw material used after 180 days

03. Advanced logistic services (source SAMER & Co Shipping , 2017 within FREEWAY Trieste)



SAMER & CO. SHIPPING

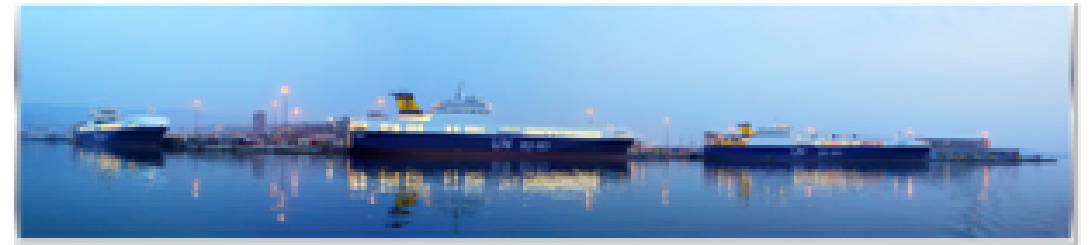
PORT TERMINAL OPERATORS

RO-RO TERMINAL:

- 3 Ro-Ro ramps
- 870 m pier
- 40' draft
- 150.000 m² storage area

1987-2016

12.364 vessels
3.341.388 heavy units



HEAVY LIFT TERMINAL:

- 450 tons capacity shore crane
- 180 m pier
- Lashing/Securing/
Dunnaging/Welding
- General Cargo and Heavy Lift
stowage plan preparation

Since 2007

470 heavy lift vessels
1.601 engines max. 300 tons
237 reels max. 480 tons
136.270.500 kg hazelnuts



REEFER TERMINAL:

- 625 m pier
- 29' draft
- 4 berths
- 1 Ro-Ro berth
- 51.500 m² warehouses
- 18.200 m² reefer warehouses
- 30.000 m² open storage
- Rail connected
- LME/LIFFE approved

2016 Statistics

64.153.131 kg reefer cargoes
21.331.118 kg general cargoes 10

03. Advanced logistic services (source SAMER & Co Shipping , 2017 within FREEWAY Trieste)



SAMER & CO. SHIPPING

LOGISTICS SERVICES

OWNED REEFER AND BONDED WAREHOUSES

- 80.000 m² storage area
- 66.500 m² warehouses
- 25.200 m² refrigerated warehouses
- 4.100 semi-automated slots
- LME/LIFFE approved
- Bonded warehouses



OWNED EQUIPMENT

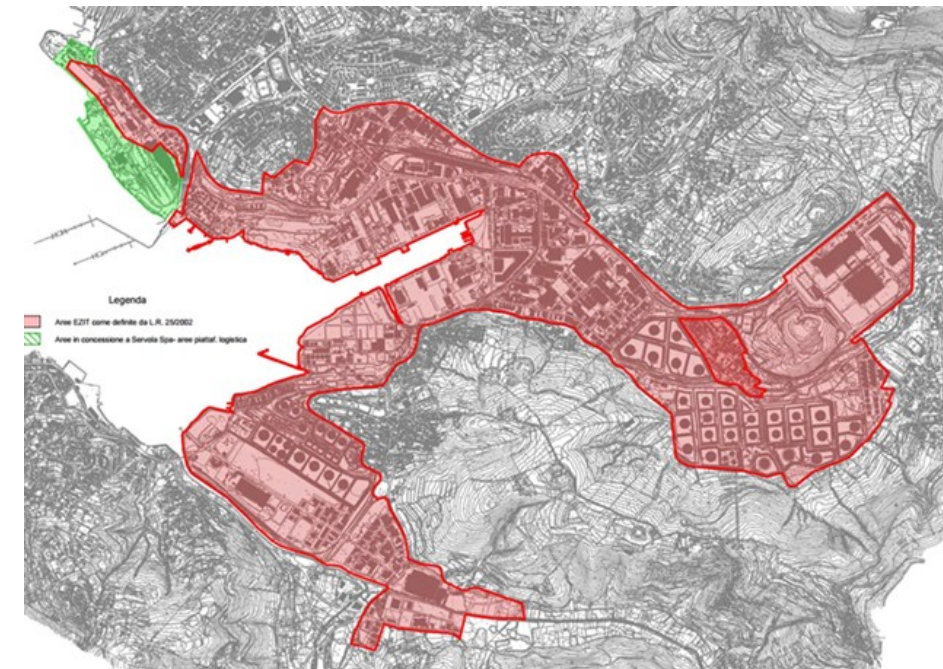
- 450 tons capacity shore crane
- 36 axles SPMT
- Mobile cranes up to 200 tons
- Forklifts and stack-loaders up to 45 tons
- Gantry cranes up to 50 tons



04. Logistic and light manufacturing & the research system

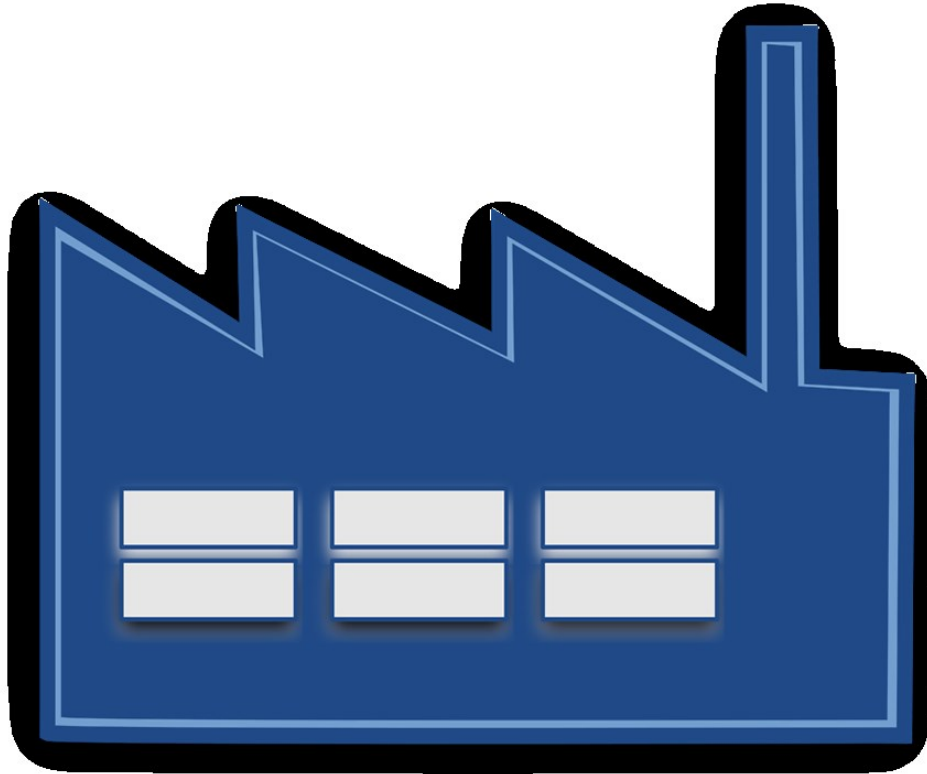


The International community in Friuli Venezia Giulia Region. In particular: **3.189 students** **10.884 research collaborators, researchers and teaching staff.** (Source: "Mobility of Knowledge 2016 - Survey")



Industrial area target for IIH operations (around 810 ha)

05. Hi-tech production



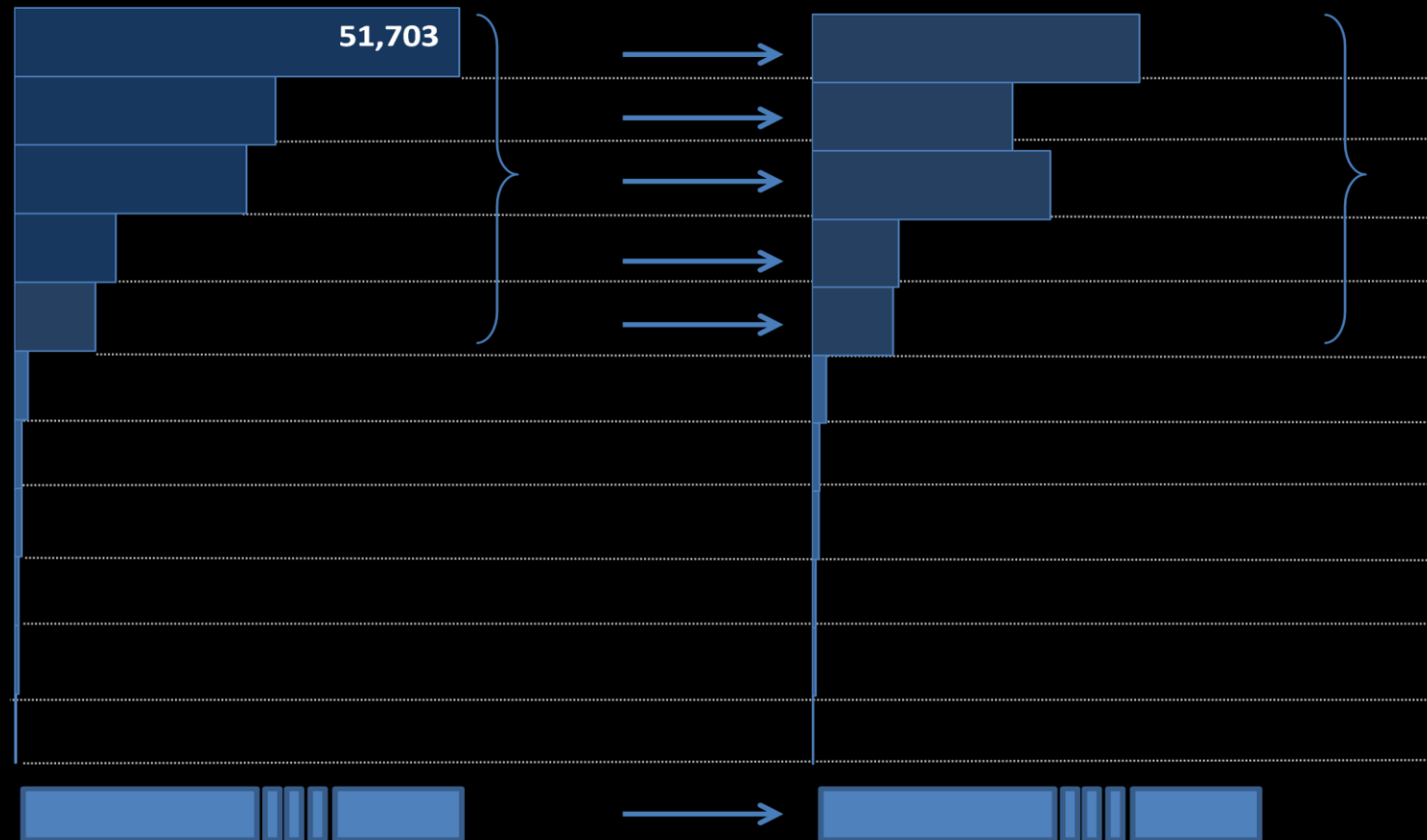
A special focus on the **Competence Centre on Critical and Strategic Raw Materials Recovery** as (one of) the main European player in the field of REEs recovery and related advanced and new technologies, responding to the main recommendation from European Union*

*

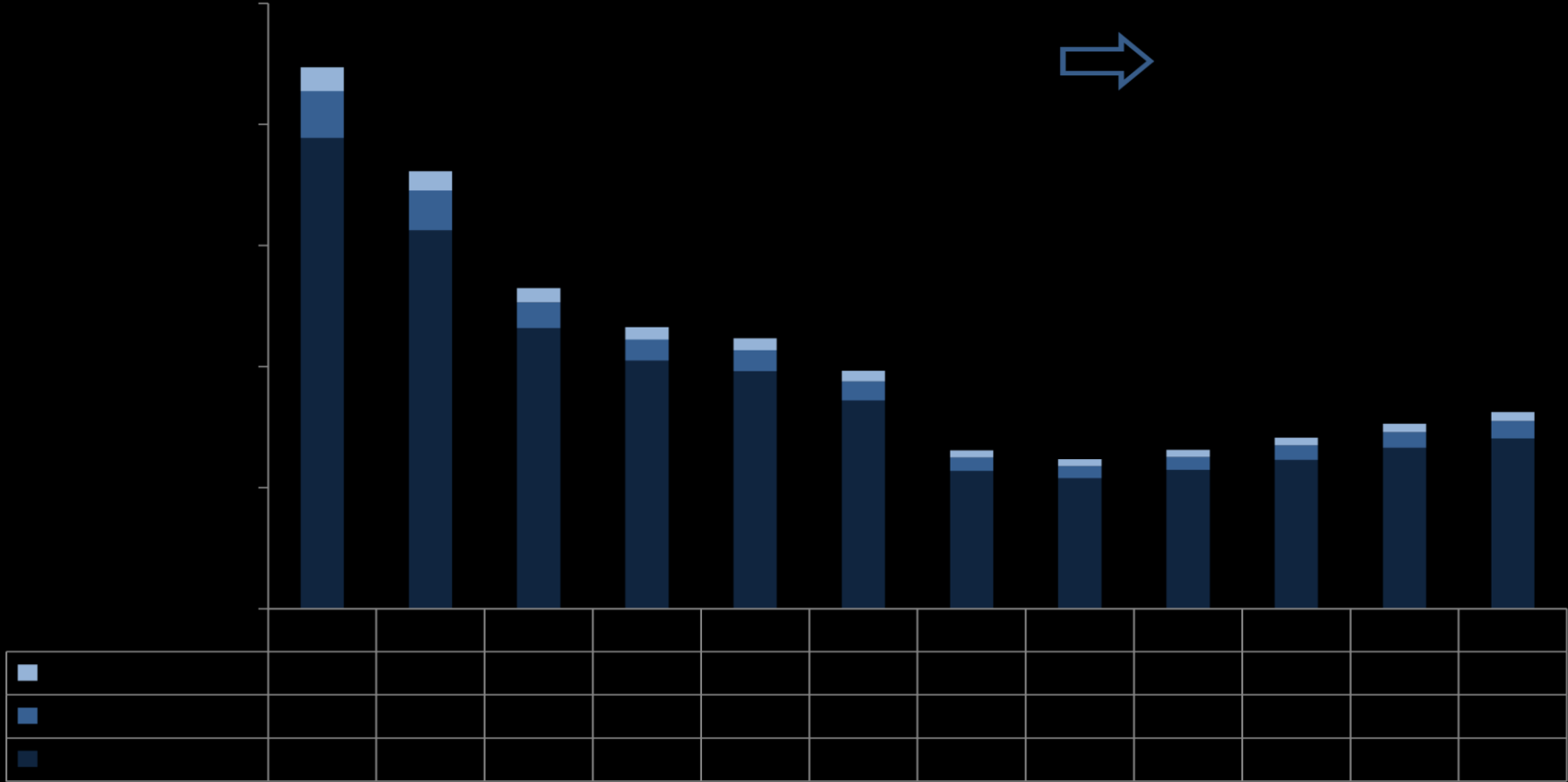
Recovery of Rare Earths from Electronic wastes: **An opportunity for High-Tech SMEs - European Parliament Directorate General for Internal Policy IP/A/ITRE/2014-09 February 2015**, as well as the report **Study on the review of the list of Critical Raw Materials - European Commission Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs Directorate Industrial Transformation and Advanced Value Chains 2017** emphasized critical raw materials, mainly **rare earths elements (REEs) of high economic importance for the EU**. It is evident that rare earth elements (REEs) are critical due to their importance in a number of applications, including a number of green technologies, but, primarily, because of the high supply risks arising from the dependence on a single source.

Element	Application
Lanthanum	Rechargeable La-Ni hydride batteries; Fluid cracking catalyst; Visual clarity improving agent in telescopes and camera lenses; Green phosphors in fluorescent; Infrared absorbing glass; Treatment of hyperphosphatemia.
Cerium	Glass and gemstones polishing; Automotive catalytic converters to reduce pollution; Diesel fuel additive; Decolorizing glass; UV cut glass; Green colour in compact fluorescent bulbs; Used in Computer chips, Transistors.
Praseodymium	High power magnets (wind turbines); Welders goggles; Vibrant yellow ceramics; Hybrid electric motor and generator; Metal alloys for aircraft engines; Battery alloys; CAT scan scintillators; Mischmetal.
Neodymium	High power magnets (wind turbines); Laser range finder and guide system; Magnet in hybrid cars; Petroleum refining; Auto catalyst; NiMH car Battery; Computer hard drives and "voice coils"; Battery alloys; HDD, CD, DVD.
Yttrium	Gas mantles ; Fluorescent lamps; Used in TV, CRT and LEDs coloring; Increases the strength of metallic alloys; Drugs for cancers; Cosmetic skin resurfacing; Ceramic and glass; Fabrication of needles.

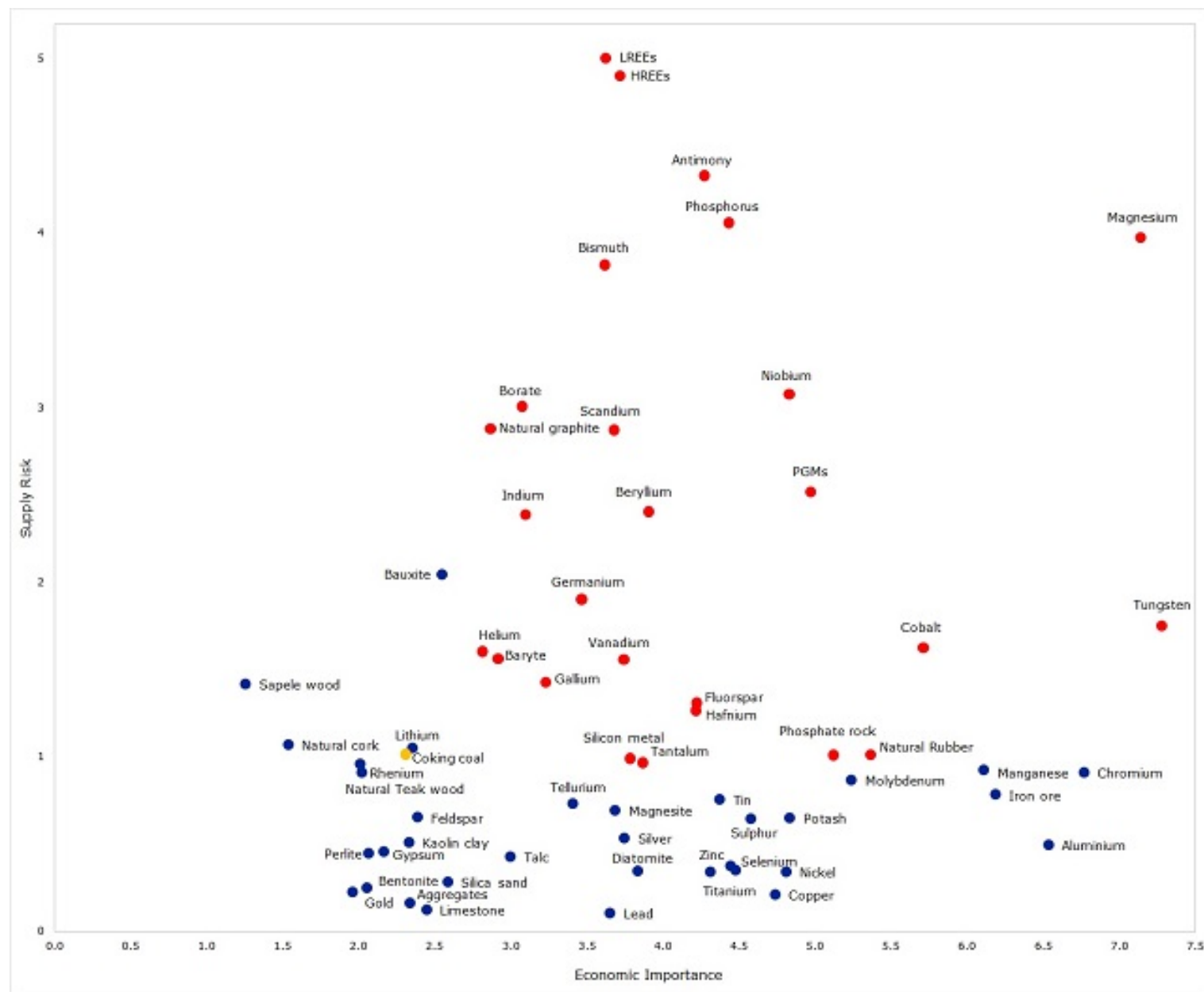
Global REEs consumption - A comparison between 2012 and 2022

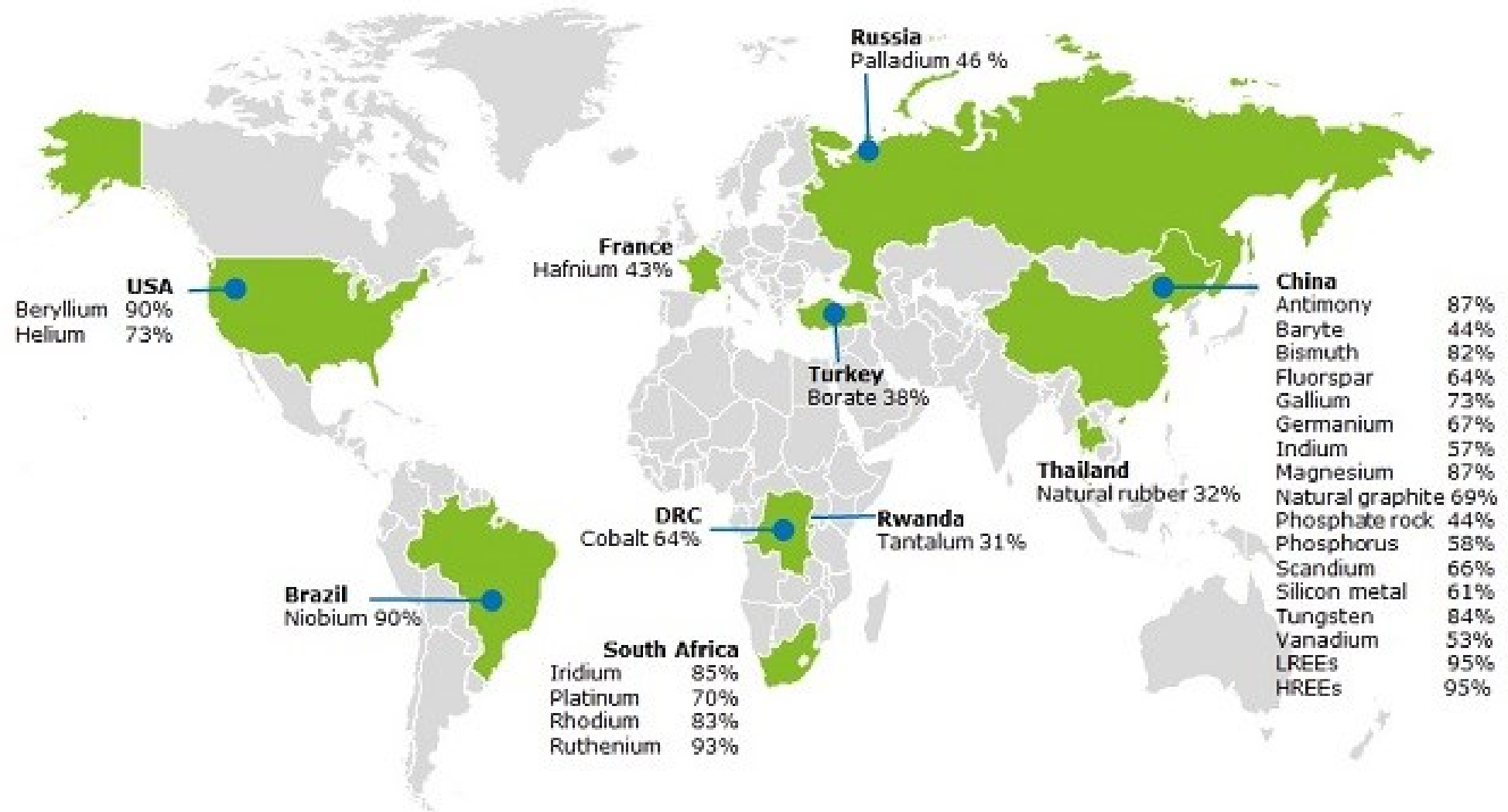


Rare Earth Elements Global Market (Million Dollars)

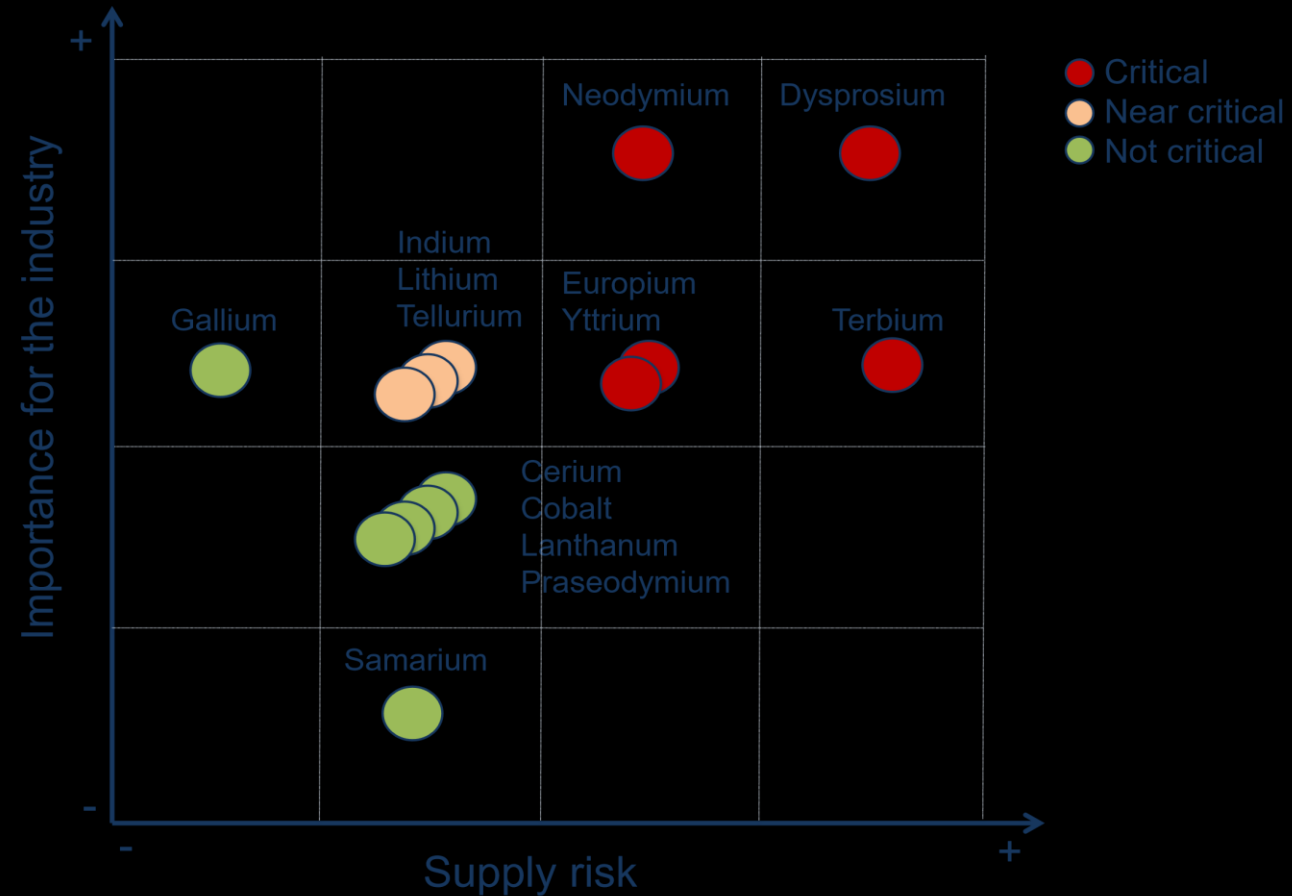


Source: Visiongain





Long– Term (5-15 years) Criticality Matrix for REE and other Materials

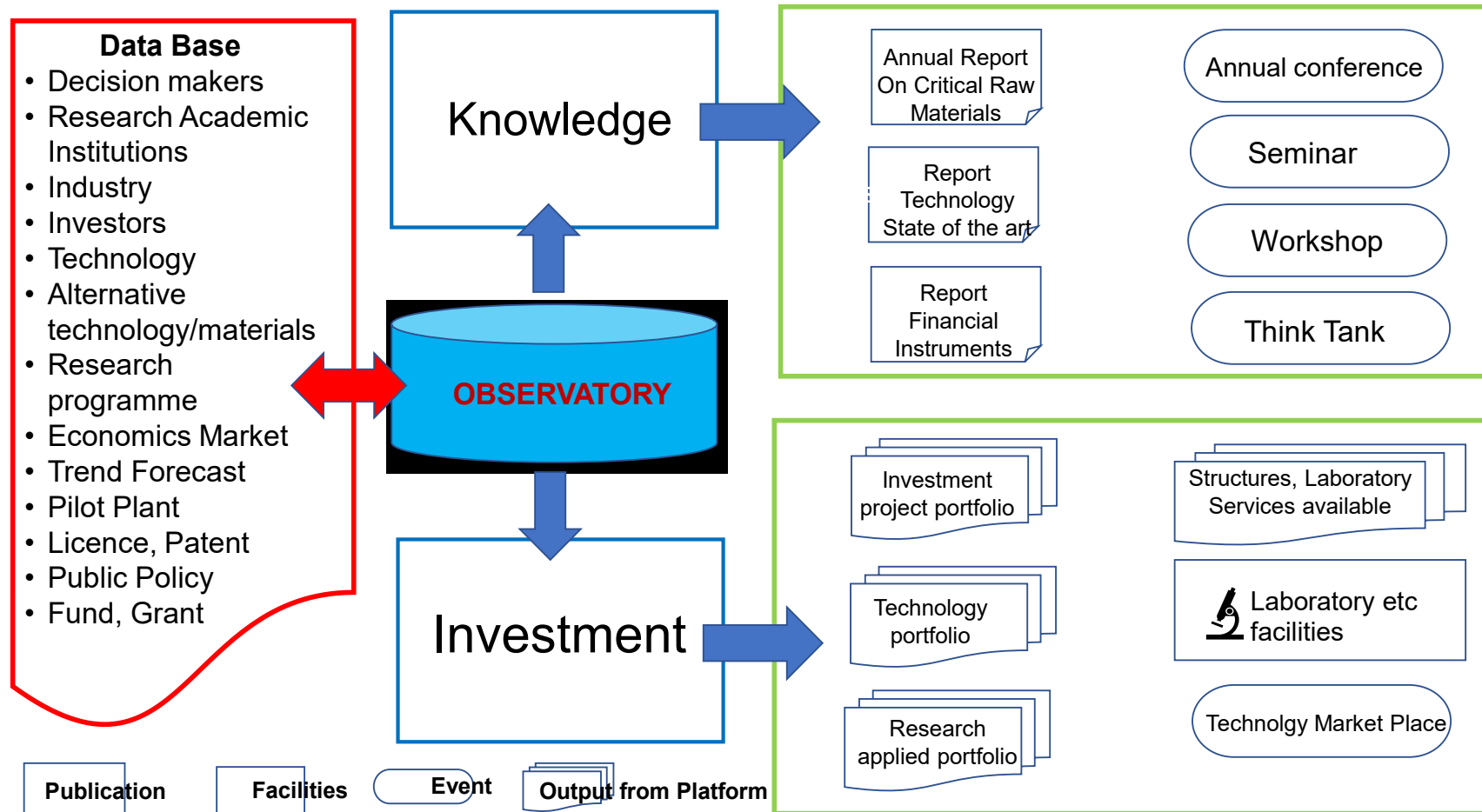


Critical raw material per product

Product	Wind mills	Hybrid Cars	Monitor TV	Monitor PC	Smartphone	Led
REs total	350 kg	35 kg	135 mg	14 mg	95 mg	0,05
Other critical materials	na	na	1.028 mg	843 mg	13.146 mg	0,62 mg



The driver – «The International Observatory»

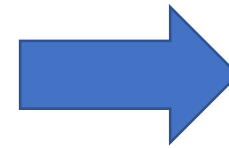
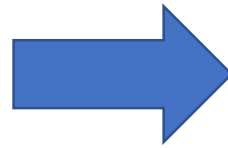


The driver – «The International Observatory»

Think Tank

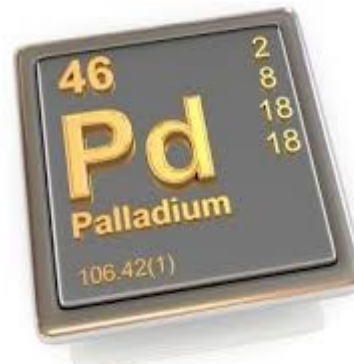
A restrict number of decision makers and experts in the sector will be invited to discuss on the present situation and future scenarios with the purpose to prepare a set of recommendation to political, industrial and economic European Authorities in the following issues:

- Diversify Supply
- Develop Substitutes
- Improve Reuse and Recycling
- Strategies to assess and address environmental sustainability and the life cycle of Critical Materials and processes;
- Social and economic viability of the research and engineering solutions

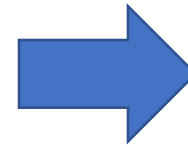
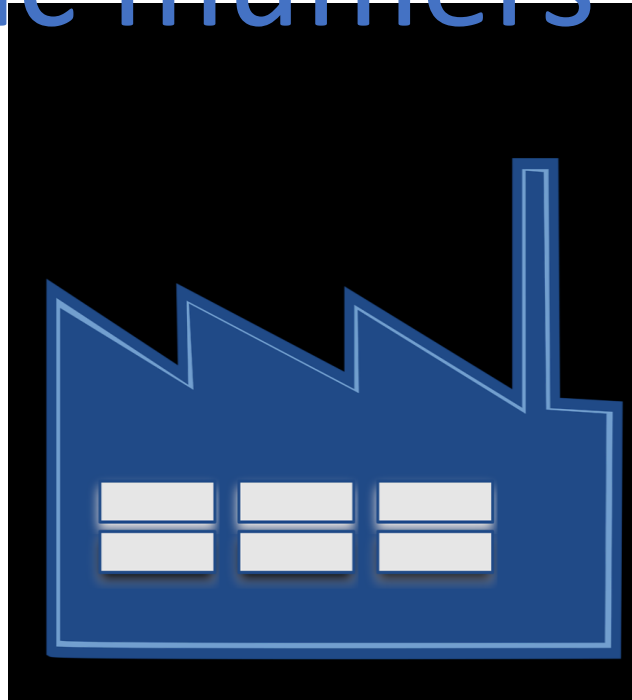
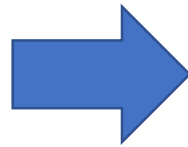
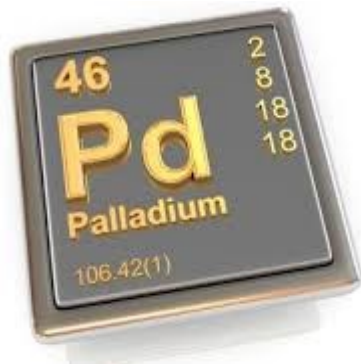


Palladium
Platinum
Gold
Silver
Coper

R4 – PED CE ITC



Catalytic mufflers production



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How Circular Economy can work