Política Internacional e Geopolítica

a reconfiguração do mundo no século XXI

INSTITUTO CULTURAL
D. ANTÓNIO FERREIRA GOMES
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SESSÃO Nº5

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PARTE I – TEMA PRINCIPAL

A geopolítica das terras raras e dos metais críticos (1) [FONTE: Simone Tagliapietra / Bruegel, 7/03/2019]

bruegel

The geopolitical implications of the global energy transition

Energy has traditionally played an important role in global geopolitics, contributing to the rise of great powers, the formation of alliances and, in many cases, also to the emergence of wars and conflicts. Every international order in modern history has been based on an energy resource. This piece discusses how the ongoing low-carbon energy transformation could reshape global geopolitics in the future.

BY: SIMONE TAGLIAPIETRA **DATE:** MARCH 7, 2019 **TOPIC:** GREEN ECONOMY

This opinion was also published on www.aspeniaonline.it

Aspenia online | international analysis and commentary

Since the First World War, oil has undoubtedly been the cornerstone of global energy geopolitics. The decision of the then First Lord of Admiralty Winston Churchill to change the fuel source of the Royal Navy warships from coal to oil, in order to make the fleet faster than its German counterpart, marked the opening of a new era. The shift from secure coal supplies from Wales to uncertain oil supplies from what was then Persia, has led to the Middle East becoming an important epicentre of global geopolitics and to oil becoming a key issue for national security.

A geopolítica das terras raras e dos metais críticos (2) [FONTE: Simone Tagliapietra / Bruegel, 7/03/2019]

Since the second half of the 20th century, control of oil resources has played a central role in several wars, such as the Biafra War (1967-1970), the Iran-Iraq War (1980-1988), the Gulf War (1990-1991), the Iraq War (2003-2011) or the conflict in the Niger Delta (ongoing since 2004). During these decades, tensions between oil-producing and oil-consuming countries increased, culminating in the oil crises of 1973 and 1979. As a result of these events, in 1980 the price of oil stabilised at $32 per barrel, a level ten times higher than before 1973. Geopolitical tensions linked to oil continued in the following decades, as shown by the Iraqi invasion of Kuwait in 1990, which led in just a few months to a doubling of the oil price – a trigger for the American economic recession of the early 1990s.

It should also be remembered that in some areas of the world, such as Europe, another fossil fuel has played and continues to play a very important geopolitical role: natural gas. In Europe, natural-gas markets have developed since the 1960s on the basis of large pipelines built to connect Russia and other producers such as Norway and Algeria with the main European markets. This situation has led to Europe's strong dependence on Russian natural gas supplies. If for many years – even in the middle of the Cold War – this situation did not raise geopolitical concerns, it began to be considered one of the main geopolitical threats to Europe between 2006 and 2009, when gas pricing disputes between Russia and Ukraine led to the interruption of Russian natural-gas supplies to Europe through Ukraine itself. These events brought natural gas to the top of the list of geopolitical risks for Europe, and led to the formulation of a European strategy for diversification of natural-gas supplies, of which the currently under-construction Southern Gas Corridor linking the Caspian region to Europe via Turkey is the clearest example.

A geopolítica das terras raras e dos metais críticos (3) [FONTE: Simone Tagliapietra / Bruegel, 7/03/2019]

But if for more than half a century oil and natural gas have been at the heart of the geopolitics of energy, it is sensible to investigate if and how this will change as a result of the global energy transition, a process driven by decarbonisation policies and by quick developments in renewable energy technologies and electric cars.

The Paris Agreement marked an important step forward in global efforts to respond to the challenge of global warming. For the first time, developed and developing countries have committed themselves to act to limit the increase in the average global temperature to well below 2°C compared to pre-industrial levels. This reinforces the decarbonisation measures already in place in several parts of the world, primarily in Europe. Meanwhile, technological advances have increased the competitiveness of solar and wind energy technologies, batteries and electric cars. The convergence of these two elements has already begun to reshape the global energy system. But what will be the consequences of these developments on the geopolitics of energy?

As far as energy-importing countries are concerned, the consequences will certainly be positive. In these cases, as imports of oil and natural gas will decrease, both their 'national energy bill' and the associated geopolitical risks will decrease.

Countries that are able to innovate more in renewables, batteries and electric cars will also be able to reap the industrial and economic benefits of this transition, generating jobs and economic growth.

A geopolítica das terras raras e dos metais críticos (4) [FONTE: Simone Tagliapietra / Bruegel, 7/03/2019]

But, of course, the energy transition will also see the emergence of new geopolitical challenges.

Firstly, the global energy transition represents a challenge for oil- and gas-producing countries, and in particular for those with a less diversified economy more dependent on oil revenues. This is the case for many countries in the Middle East and north Africa which, despite the adoption of elaborate strategies for economic diversification, have not really made much progress in this direction. If the global energy transition were to take place more quickly than expected, and if these countries were to remain unprepared, the consequences could be serious from both the socio-economic and geopolitical points of view.

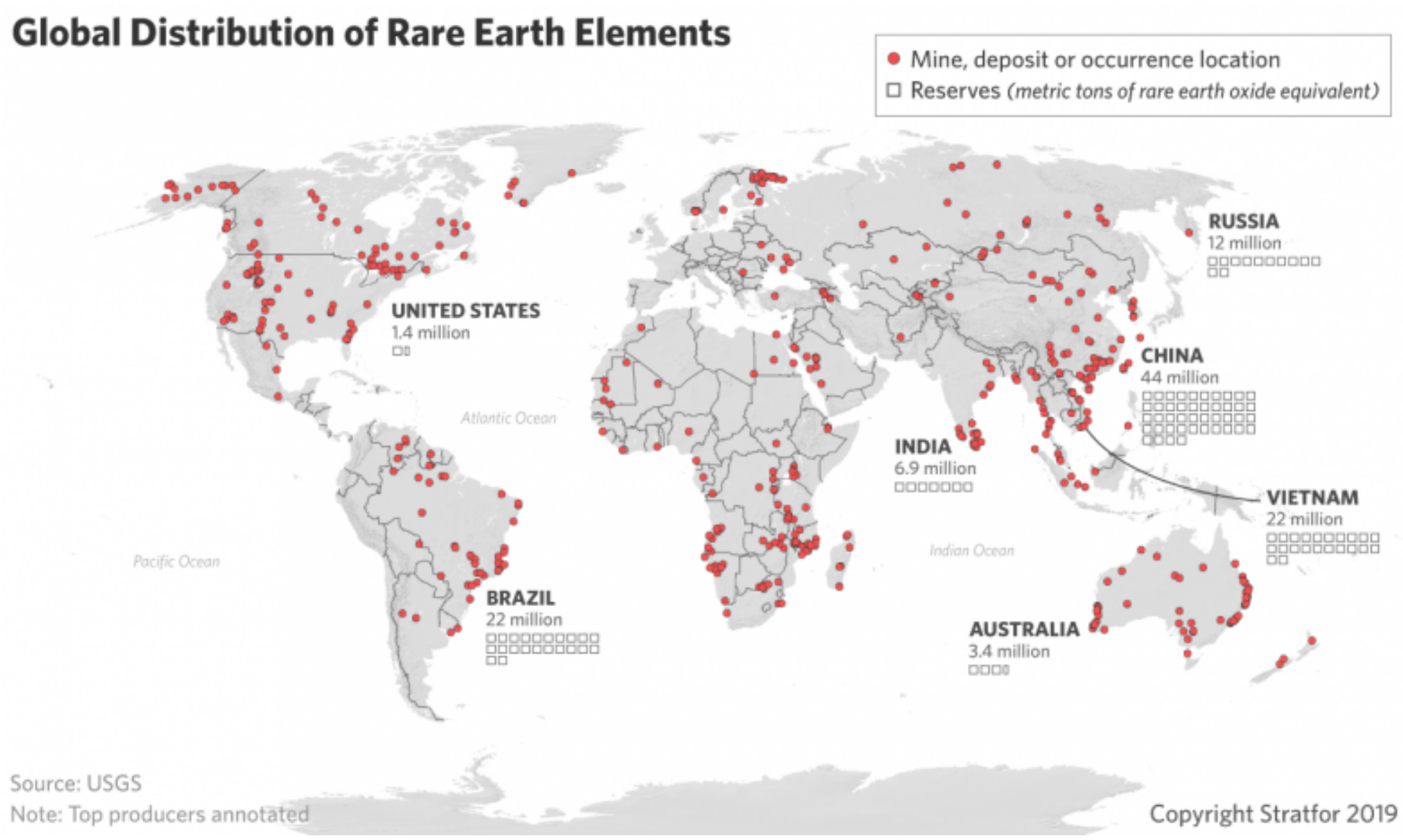
Secondly, the spread of renewable energies will increase electrification and stimulate cross-border trade in electricity. Energy sources such as solar and wind require flexible energy systems that can cope with the variability of weather conditions. Smart electricity grids will therefore play an increasingly important role in mitigating this variability and ensuring system stability. The digitisation of electricity grids clearly presents security risks, as terrorist groups or hostile countries could seek to either enter the systems to extrapolate information, or to disrupt them to cause economic and social damages.

A geopolítica das terras raras e dos metais críticos (5) [FONTE: Simone Tagliapietra / Bruegel, 7/03/2019]

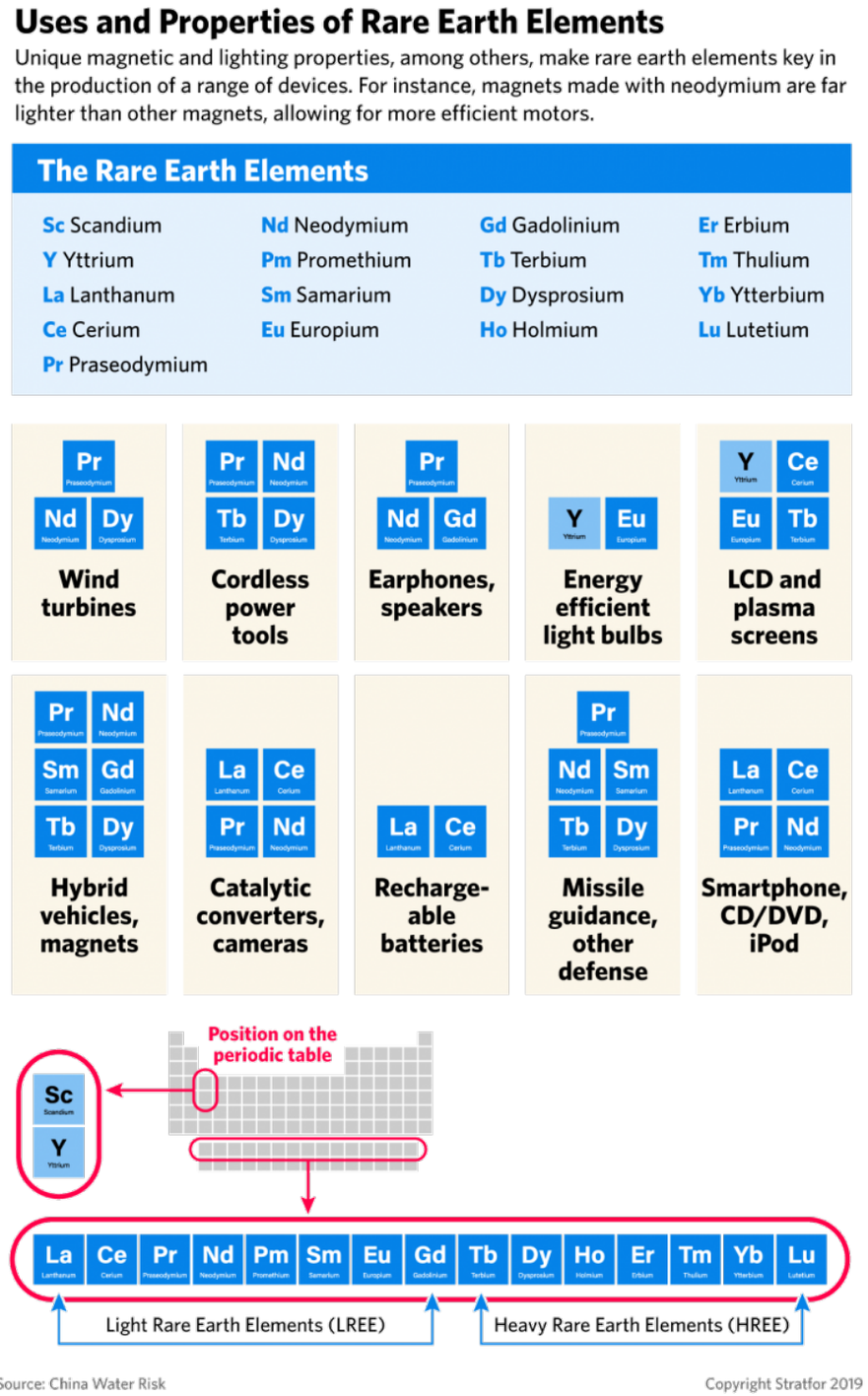
Thirdly, it is important to stress that the rapid development of wind and solar energy, together with that of electric cars, raises concerns about the security of supply of the minerals needed to manufacture them. These concerns have also developed following events such as those of 2008, when China imposed a limit on the supply of rare earths – of which it holds a large part of the global production – to foreign buyers, leading to panic in the markets and a very rapid increase in prices. Another case was the 'cobalt crisis' of 1978, following the outbreak of a conflict in the province of Katanga – the heart of world mineral extraction – in what was then called Zaire. The crisis caused a global shortage of cobalt, driving the international price of the mineral to the sky. It is clear that if something like this were to happen in the future, the consequences for the production of electric cars would be important. Cobalt is, in fact, a key component of their batteries. These are just examples of how the minerals at the heart of the energy transition will carry their own geopolitical risks, just as oil and natural gas have had theirs.

The global energy transition will not, therefore, lead to the end of the geopolitics of energy, but rather to its transformation, which will see, as in any revolution, both winners and losers. On the one hand, it will strengthen the energy security of most of the countries currently importing oil and natural gas, promoting job creation and economic growth in those who will be able to seize the industrial opportunities of this development. On the other hand, it will create inevitable elements of instability in oil- and gas-exporting countries, which will have to reinvent themselves to keep developing in the new energy era, and new security risks linked to electricity grids and minerals.

A geopolítica das terras raras e dos metais críticos (6) [FONTE: The Geopolitics of Rare Earth Elements / Stratfor, 8/08/2019]



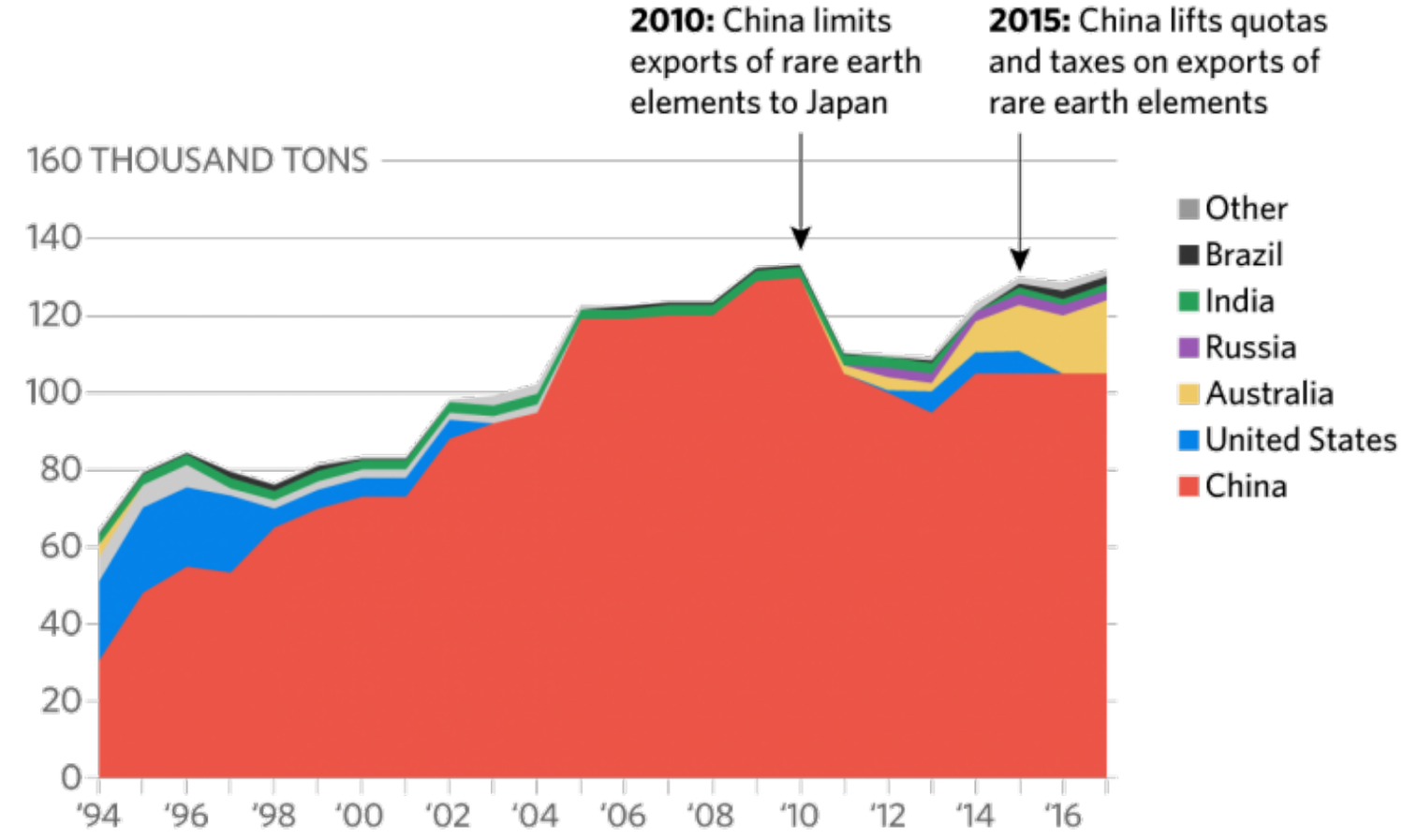
A geopolítica das terras raras e dos metais críticos (7) [FONTE: The Geopolitics of Rare Earth Elements / Stratfor, 8/08/2019]



A geopolítica das terras raras e dos metais críticos (8) [FONTE: The Geopolitics of Rare Earth Elements / Stratfor, 8/08/2019]

Rare Earth Elements Mines Production

Over the last 30 years, China has solidified its dominance over the global rare earth sector. Looking to move up the value chain and with domestic electric vehicle and renewable consumption increasing, China's domestic consumption of rare earths will only grow. This threatens to reduce China's total exports, but could also tie China more closely to the global market as it seeks more imports, slowly diversifying the market.

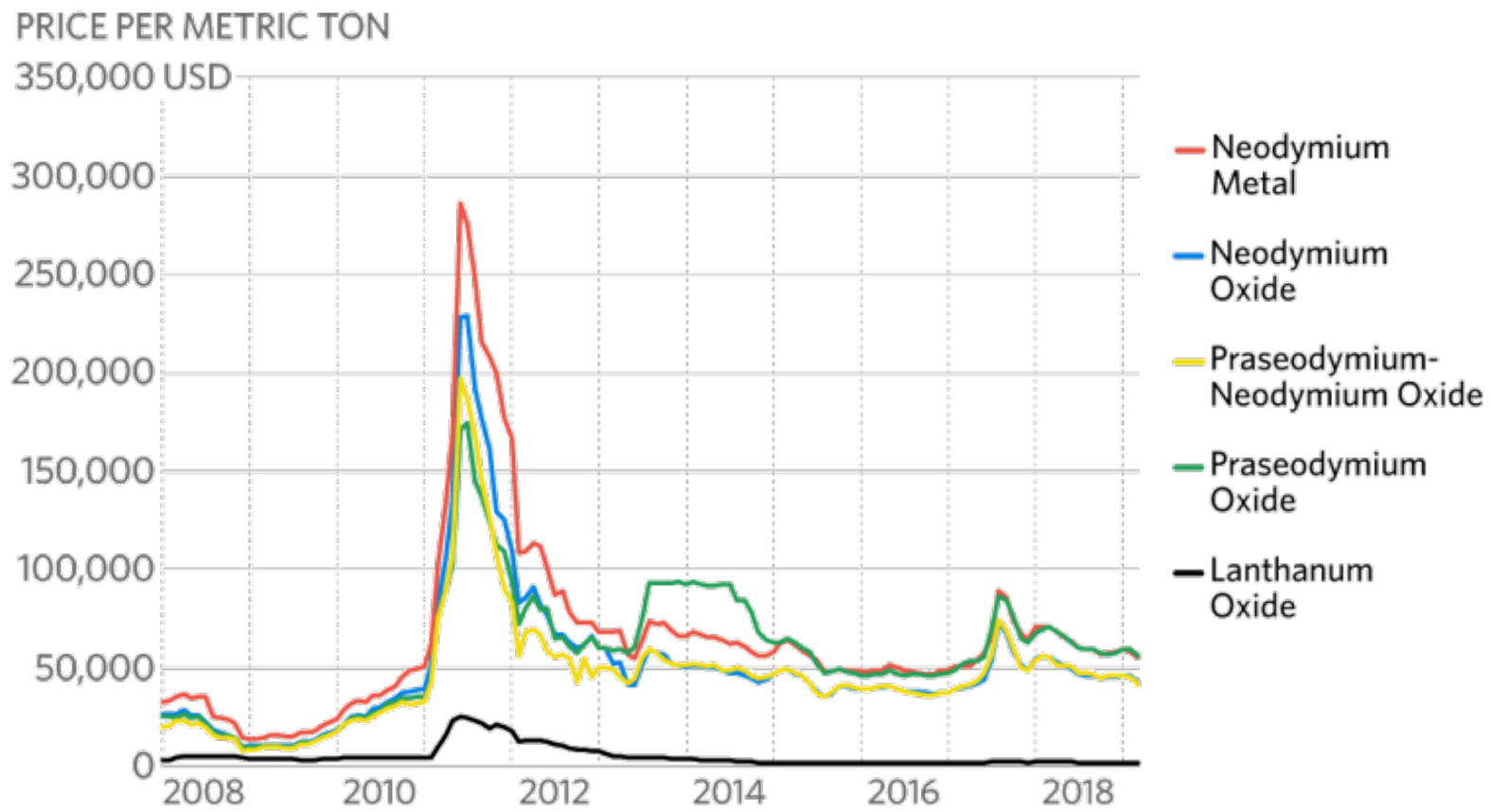


Source: USGS

A geopolítica das terras raras e dos metais críticos (9) [FONTE: The Geopolitics of Rare Earth Elements / Stratfor, 8/08/2019]

Prices of Selected Rare Earth Element Ores

China threw a wrench into the rare earth elements market in 2010 when it temporarily cut off exports to Japan. Prices spiked and countries and producers scrambled to find, develop or reopen alternative sources. As prices stabilized in the years since and the threat became less immediate, it was no longer economically viable to keep certain mines open or pursue many new projects.



Source: Bloomberg

A geopolítica das terras raras e dos metais críticos (10) [FONTE: Banco Mundial, 2017]

The Growing Role of Minerals and Metals for a Low Carbon Future

June 2017

WORLD BANK GROUP

EGPS
Extractives Global Programmatic Support

A geopolítica das terras raras e dos metais críticos (11) [FONTE: Banco Mundial, 2017]

Executive Summary

Climate and greenhouse gas (GHG) scenarios have typically paid scant attention to the metal implications necessary to realize a low/zero carbon future. The 2015 Paris Agreement on Climate Change indicates a global resolve to embark on development patterns that would significantly be less GHG intensive. One might assume that nonrenewable resource development and use will also need to decline in a carbon-constrained future. This report tests that assumption, identifies those commodities implicated in such a scenario and explores ramifications for relevant resource-rich developing countries.

Using wind, solar, and energy storage batteries as proxies, the study examines which metals will likely rise in demand to be able to deliver on a carbon-constrained future. Metals which could see a growing market include aluminum (including its key constituent, bauxite), cobalt, copper, iron ore, lead, lithium, nickel, manganese, the platinum group of metals, rare earth metals including cadmium, molybdenum, neodymium, and indium—silver, steel, titanium and zinc. The report then maps production and reserve levels of relevant metals globally, focusing on implications for resource-rich developing countries. It concludes by identifying critical research gaps and suggestions for future work.

The report first develops a framework for estimating mineral demand in a low carbon future. The World Bank, in collaboration with the International Council on Mining and Metals (ICMM), commissioned a predictive analysis of future metals demand to support the transition to a low carbon future, using the International Energy Agency's Energy Technology Perspectives 2016,[1] which focus on the renewable technology implications of meeting 2°C (2DS), 4°C (4DS) and 6°C (6DS) global temperature increase goals. Renewable energy generation (including hydropower and biomass) increases in the three climate scenarios from 14% of the current energy mix to 18% in the 6DS scenario, and a high of 44% in the 2DS scenario.

A geopolítica das terras raras e dos metais críticos (12) [FONTE: Banco Mundial, 2017]

TABLE 1.1 Metals Identified by the Literature Review for Inclusion in the Scenario Study

Metal	Metal	Metal
Aluminum	Iron	Molybdenum
Chromium	Lithium	Silver
Copper	Lead	Steel
Indium (Rare earth)	Manganese	Zinc

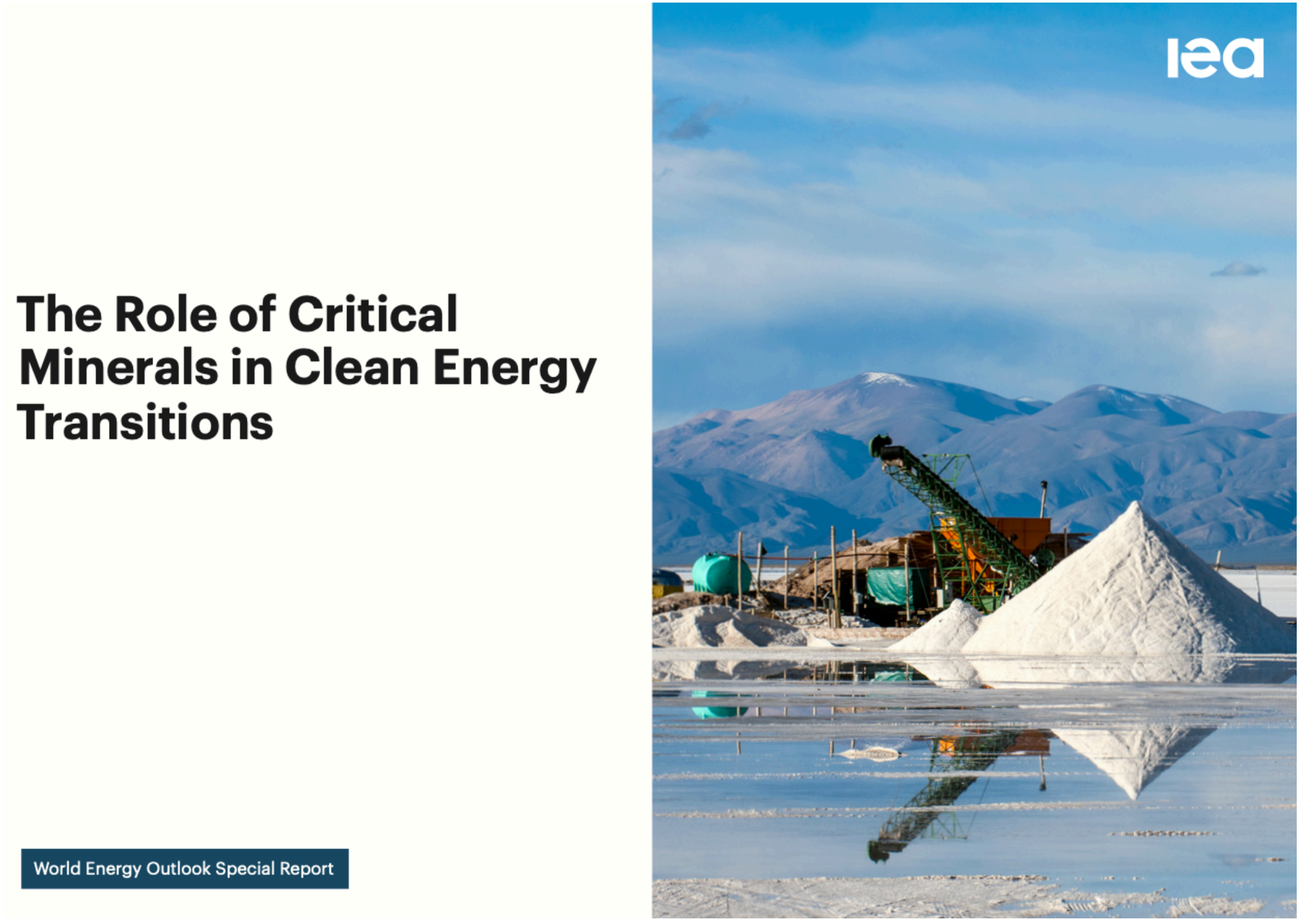
Note: Other metals were investigated (see annex A), but this subset was selected as the most relevant for this study.

TABLE 1.2 Energy Technologies Included in This Study

	Technology
1a	Wind electricity generation—onshore
1b	Wind electricity generation—offshore
2a	Solar photovoltaics—crystalline silicon
2b	Solar photovoltaics—CdTe
2c	Solar photovoltaics—CIGS
2d	Solar photovoltaics—amorphous silicon
3a	Energy storage—automotive (split between lithium-ion, lead-acid, and other)
3b	Energy storage—grid scale (split between lithium-ion, lead-acid, and other)
3c	Energy storage—decentralized (split between lithium-ion, lead-acid, and other)

Note: CdTe = cadmium telluride; CIGS = copper indium gallium selenide. Other energy technologies were investigated (see annex A), but this subset of technologies was selected as the most relevant for this study.

A geopolítica das terras raras e dos metais críticos (13) [FONTE: International Energy Agency (2021)]



A geopolítica das terras raras e dos metais críticos (14) [FONTE: International Energy Agency (2021)]

In the transition to clean energy, critical minerals bring new challenges to energy security

An energy system powered by clean energy technologies differs profoundly from one fuelled by traditional hydrocarbon resources. Building solar photovoltaic (PV) plants, wind farms and electric vehicles (EVs) generally requires more minerals than their fossil fuel-based counterparts. A typical electric car requires six times the mineral inputs of a conventional car, and an onshore wind plant requires nine times more mineral resources than a gas-fired power plant. Since 2010, the average amount of minerals needed for a new unit of power generation capacity has increased by 50% as the share of renewables has risen.

The types of mineral resources used vary by technology. Lithium, nickel, cobalt, manganese and graphite are crucial to battery performance, longevity and energy density. Rare earth elements are essential for permanent magnets that are vital for wind turbines and EV motors. Electricity networks need a huge amount of copper and aluminium, with copper being a cornerstone for all electricity-related technologies.

The shift to a clean energy system is set to drive a huge increase in the requirements for these minerals, meaning that the energy sector is emerging as a major force in mineral markets. Until the mid-2010s, the energy sector represented a small part of total demand for most minerals. However, as energy transitions gather pace, clean energy technologies are becoming the fastest-growing segment of demand.

In a scenario that meets the Paris Agreement goals, clean energy technologies' share of total demand rises significantly over the next two decades to over 40% for copper and rare earth elements, 60-70% for nickel and cobalt, and almost 90% for lithium. EVs and battery storage have already displaced consumer electronics to become the largest consumer of lithium and are set to take over from stainless steel as the largest end user of nickel by 2040.

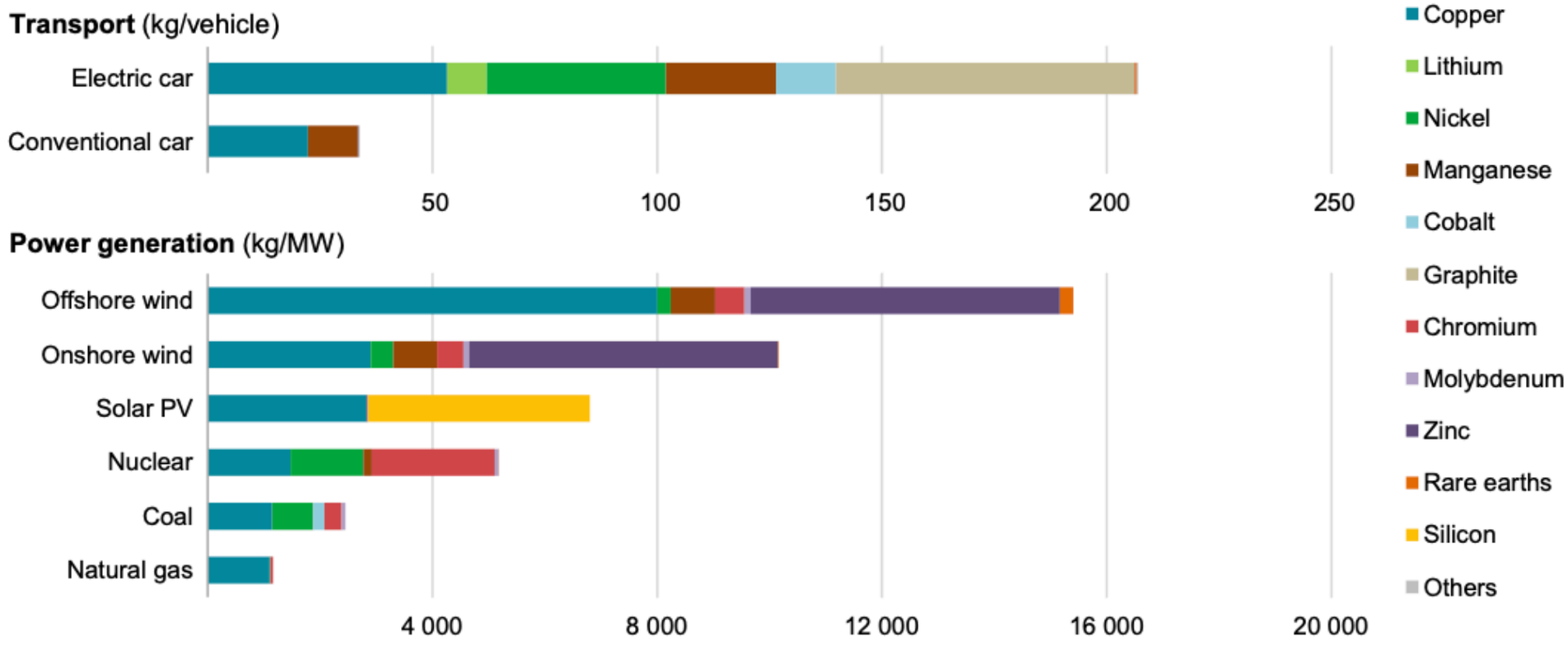
As countries accelerate their efforts to reduce emissions, they also need to make sure their energy systems remain resilient and secure. Today's international energy security mechanisms are designed to provide insurance against the risks of disruptions or price spikes in supplies of hydrocarbons, particularly oil. Minerals offer a different and distinct set of challenges, but their rising importance in a decarbonising energy system requires energy policy makers to expand their horizons and consider potential new vulnerabilities. Concerns about price volatility and security of supply do not disappear in an electrified, renewables-rich energy system.

This is why the IEA is paying close attention to the issue of critical minerals and their role in clean energy transitions. This report reflects the IEA's determination to stay ahead of the curve on all aspects of energy security in a fast-evolving energy world.

A geopolítica das terras raras e dos metais críticos (15) [FONTE: International Energy Agency (2021)]

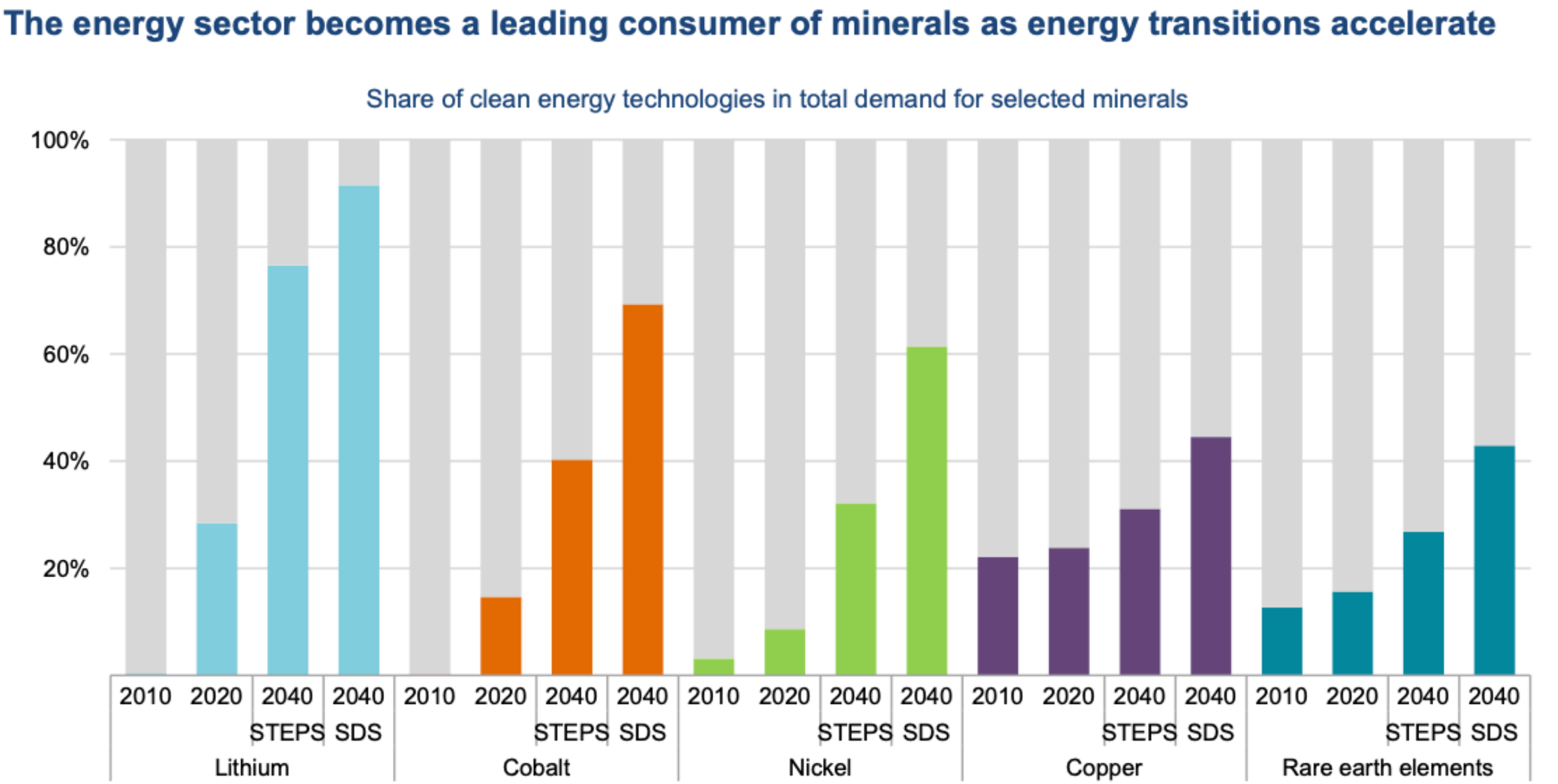
The rapid deployment of clean energy technologies as part of energy transitions implies a significant increase in demand for minerals

Minerals used in selected clean energy technologies



Notes: kg = kilogramme; MW = megawatt. Steel and aluminium not included. See Chapter 1 and Annex for details on the assumptions and methodologies.

A geopolítica das terras raras e dos metais críticos (16) [FONTE: International Energy Agency (2021)]

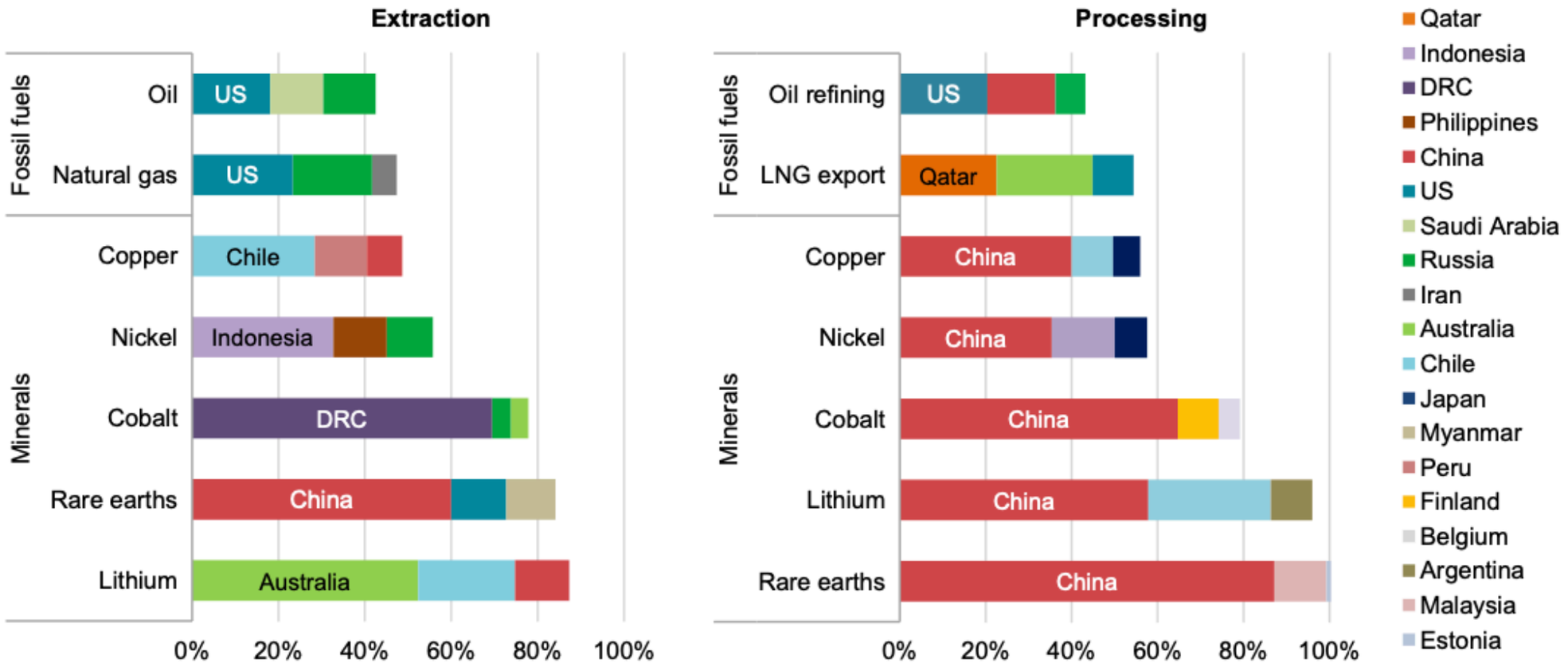


Notes: Demand from other sectors was assessed using historical consumption, relevant activity drivers and the derived material intensity. Neodymium demand is used as indicative for rare earth elements. STEPS = Stated Policies Scenario, an indication of where the energy system is heading based on a sector-by-sector analysis of today's policies and policy announcements; SDS = Sustainable Development Scenario, indicating what would be required in a trajectory consistent with meeting the Paris Agreement goals.

A geopolítica das terras raras e dos metais críticos (17) [FONTE: International Energy Agency (2021)]

Production of many energy transition minerals today is more geographically concentrated than that of oil or natural gas

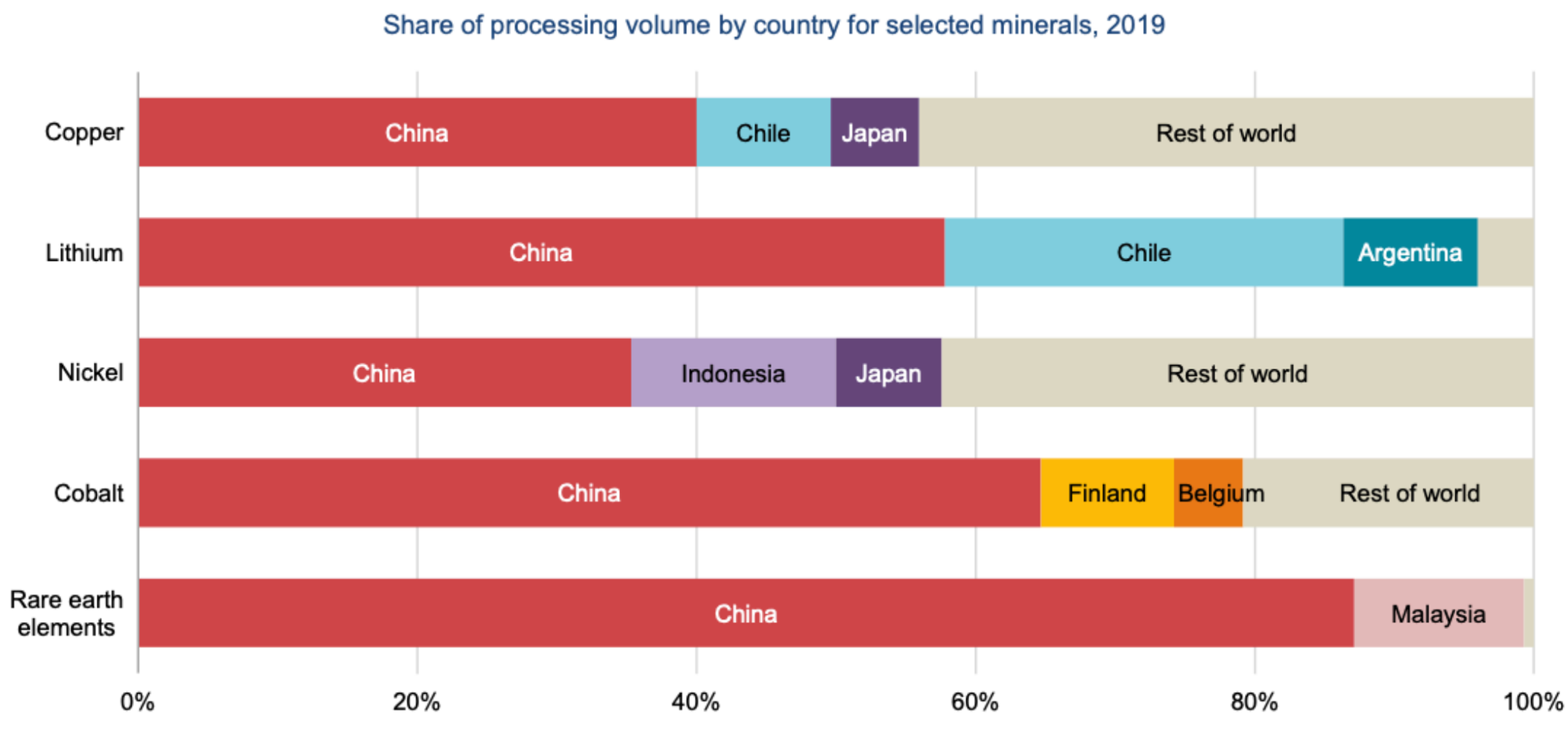
Share of top three producing countries in production of selected minerals and fossil fuels, 2019



Notes: LNG = liquefied natural gas; US = United States. The values for copper processing are for refining operations.
Sources: IEA (2020a); USGS (2021), World Bureau of Metal Statistics (2020); Adamas Intelligence (2020).

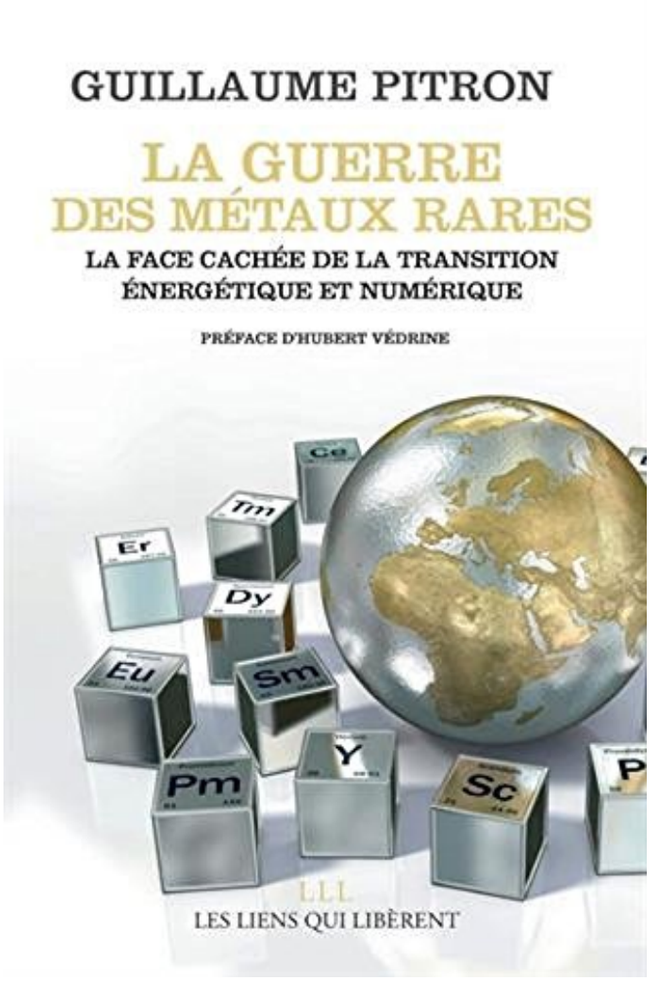
A geopolítica das terras raras e dos metais críticos (18) [FONTE: International Energy Agency (2021)]

The level of concentration is similarly high for processing operations, with China's significant presence across the board



Note: The values for copper are for refining operations.
Sources: World Bureau of Metal Statistics (2020); Adamas Intelligence (2020) for rare earth elements.

A geopolítica das terras raras e dos metais críticos (19) [FONTE: Guillaume Pitron / Futura Planète, 6/08/2021]



FUTURA PLANÈTE

— PLANÈTE —

« La guerre des métaux rares a déjà commencé. » Interview de Guillaume Pitron

Publié le 06/08/2021

La transition énergétique est-elle plus problématique qu'on aimerait le croire ? C'est en tout cas la thèse de Guillaume Pitron, le journaliste et réalisateur spécialisé sur la question des matières premières. En 2018, il publie *La guerre des métaux rares*, un livre d'enquête dans lequel il dénonce la face cachée de la transition énergétique. Il se penche sur la question des métaux rares, métaux aux propriétés extraordinaires utilisés dans les technologies vertes, convoités par les grandes puissances et dont les processus d'extraction sont particulièrement polluants.

A geopolítica das terras raras e dos metais críticos (20) [FONTE: Guillaume Pitron / Futura Planète, 6/08/2021]

> ***Il ne faut pas exclure un scénario de conflit localisé autour de l'accès à certains gisements, mais il ne faut pas non plus tomber dans le catastrophisme***

La « guerre des métaux rares » est-elle donc déjà lancée ?

La guerre a déjà commencé, évidemment. Pas au sens militaire du terme, mais c'est une guerre économique où la Chine a sécurisé l'essentiel des métaux. Son leadership lui permet de développer les technologies d'avenir, au détriment des pays clients comme les Occidentaux, qui ne peuvent pas construire leur propre technologie faute de matières premières.

Après, je ne sais pas si cette guerre économique peut devenir une guerre militaire. Après tout, le XX^{e} siècle regorge d'exemples. On s'est fait la guerre pour le pétrole, alors qu'on n'aurait jamais imaginé cela au début du siècle. Or les spécialistes parlent des métaux rares comme le « next oil », le pétrole du XXI^{e} siècle. On est dans un scénario, 100 ans plus tard, où l'histoire se répète avec d'autres matières premières. À mesure que nos besoins vont croître et que ces matières vont devenir de plus en plus stratégiques, il va falloir sécuriser les approvisionnements les plus importants. Il ne faut pas exclure un scénario de conflit localisé autour de l'accès à certains gisements, mais il ne faut pas non plus tomber dans le catastrophisme car rien aujourd'hui ne vient vraiment étayer cette hypothèse.

Lutécium sublimé et sous une modification dendritique pur à 99,995 % placé à côté d'un cube d'un centimètre d'arête de lutécium (99,9 %) refondu à l'arc. © Alchemist-hp, wikimedia commons, CC 3.0

Os efeitos ambientais e a competição pelos recursos da “economia verde” (1) [FONTE: BBC, 15/04/2015]

The dystopian lake filled by the world’s tech lust

By Tim Maughan 2nd April 2015

Hidden in an unknown corner of Inner Mongolia is a toxic, nightmarish lake created by our thirst for smartphones, consumer gadgets

Os efeitos ambientais e a competição pelos recursos da “economia verde” (2) [FONTE: BBC, 15/04/2015]

(Credit: Liam Young/Unknown Fields)

And there’s no better place to understand China’s true sacrifice than the shores of Baotou toxic lake. Apparently created by damming a river and flooding what was once farm land, the lake is a “tailings pond”: a dumping ground for waste byproducts. It takes just 20 minutes to reach the lake by car from the centre of the city, passing through abandoned countryside dominated by the industrial architecture on the horizon. **Earlier reports** claim the lake is guarded by the military, but we see no sign. We pass a shack that was presumably a guard hut at one point but it’s abandoned now; whoever was here left in a hurry, leaving their bedding, cooking stove, and instant noodle packets behind when they did.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (3) [FONTE: BBC, 15/04/2015]

(Credit: Liam Young/Unknown Fields)

We reached the shore, and looked across the lake. I’d seen some photos before I left for Inner Mongolia, but nothing prepared me for the sight. It’s a truly alien environment, dystopian and horrifying. The thought that it is man-made depressed and terrified me, as did the realisation that this was the byproduct not just of the consumer electronics in my pocket, but also green technologies like wind turbines and electric cars that we get so smugly excited about in the West. Unsure of quite how to react, I take photos and shoot video on my cerium polished iPhone.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (4) [FONTE: SCMP, 5/06/20211

US, EU rare earth race to break China dominance ‘risks fuelling global rivalry’

Study finds efforts by Washington and Brussels to reduce reliance on Chinese supplies could intensify competition for access Rare earths are a vital component of many hi-tech industries including electric car batteries and solar panels

Os efeitos ambientais e a competição pelos recursos da “economia verde” (5) [FONTE: SCMP, 5/06/2021]

Rebecca Nadin, ODI’s director of global risks and resilience, said Beijing knew its innovation-driven growth required secure energy and mineral resources, including rare earth elements and other technologically critical minerals.

“Expect to see even more emphasis on building up ‘strategic mineral resource reserves’ and expanding exploration, as well as a commitment to taking part in ‘global mineral resource governance’,” said Nadin, who co-authored the report on China’s outward investment appetite and its implications for developing countries.

China has strategically positioned itself to become the dominant player in the extraction and processing of the elements, controlling about 36.7 per cent of the world’s rare earth elements reserves, according to the study.

China produces 140,000 tonnes – equal to about 58 per cent of global production in 2020 – according to the US Geological Survey. The US is in second place, at 15.8 per cent, while the world’s third-largest rare producer is Myanmar, with 12.5 per cent.

Beijing also holds 85 per cent of the world’s processing capacity for rare earth ores, and even countries where the elements are mined – including the US – ship their unrefined ores to China for processing.

A growing number of Chinese companies are looking abroad for alternative sources of metals, especially in Myanmar, Australia, the US, Burundi, Greenland and Madagascar.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (6) [FONTE: SCMP, 5/06/2021]

But the logistical supply chain nightmare caused by last year's closures of ports and borders in many countries because of the pandemic had already prompted the US and EU to look again at their critical metals as well as other sectors such as pharmaceuticals.

Bags of rare earth concentrates ready for transport from the Mountain Pass mine in California. Photo: Bloomberg

Any further disruption to their supply chains for these products would hurt key industries, according to Washington and Brussels.

The US said recently it would rebuild its rare metals supply chain to reduce its dependence on China for the critical metals and rare earth minerals that power its aviation, military and car industries. The Mountain Pass mine in California has been reopened to rebuild rare earth production.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (7) [FONTE: White House, 24/02/2021]

BRIEFING ROOM

Executive Order on America’s Supply Chains

FEBRUARY 24, 2021 • PRESIDENTIAL ACTIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. The United States needs resilient, diverse, and secure supply chains to ensure our economic prosperity and national security. Pandemics and other biological threats, cyber-attacks, climate shocks and extreme weather events, terrorist attacks, geopolitical and economic competition, and other conditions can reduce critical manufacturing capacity and the availability and integrity of critical goods, products, and services. Resilient American supply chains will revitalize and rebuild domestic manufacturing capacity, maintain America’s competitive edge in research and development, and create well-paying jobs. They will also support small businesses, promote prosperity, advance the fight against climate change, and encourage economic growth in communities of color and economically distressed areas.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (8) [FONTE: Japan Times, 2/05/2021]

To go electric, America needs more mines. Can it build them?

Ernest Scheyder Mar 2, 2021

The MP Materials rare earth open-pit mine in Mountain Pass, California | REUTERS

Last September, in the arid hills of northern Nevada, a cluster of flowers found nowhere else on earth died mysteriously overnight.

Conservationists were quick to suspect Ioneer Ltd., an Australian firm that wants to mine the lithium that lies beneath the flowers for use in electric vehicle batteries.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (9) [FONTE: Japan Times, 2/05/2021]

Digging needed

Demand for metals used in EV batteries is expected to rise sharply as automakers including Tesla Inc., BMW and General Motors plan major expansions of EV production. California, the biggest U.S. vehicle market, aims to entirely ban fossil fuel-powered engines by 2035.

Nevada Copper’s Pumpkin Hollow copper mine in Yerington, Nevada | REUTERS

Biden has promised to convert the entire U.S. government fleet — about 640,000 vehicles — to EVs. That plan alone could require a twelvefold increase in U.S. lithium production by 2030, according to Benchmark Minerals Intelligence, as well as increases in output of domestic copper, nickel and cobalt. Federal land is teeming with many of these EV metals, according to the U.S. Geological Survey.

“There is no way there’s enough raw materials being produced right now to start replacing millions of gasoline-powered motor vehicles with EVs,” said Lewis Black, CEO of Almonty Industries Inc, which mines the hardening metal tungsten in Portugal and South Korea.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (10) [FONTE: Pier Paolo Raimondi /ISPI - The Scramble for Africa’s Rare Earths: China is not Alone, 7/06/2021]

The Scramble for Africa’s Rare Earths: China is not Alone

Seventeen elements in the periodic table – the so-called “rare earths” – play a major role in the calculations and strategies of various nations. In many ways, rare earths are the vitamins of industrial society in the 21st century: they are vital to **key products from hi-tech items (smartphones and monitors) to energy conversion systems (wind turbines, photovoltaic panels and electrical machinery) and even military equipment (lasers and radar**). The difficulties involved in replacing them with alternative materials make rare earths uniquely strategic resources.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (11) [FONTE: Pier Paolo Raimondi /ISPI - The Scramble for Africa’s Rare Earths: China is not Alone, 7/06/2021]

Obstacles to development

The start-up of new projects is presently hindered by market laws, which present challenges such as **high costs**, the need for **major investment** and **political, environmental and social acceptability considerations**. The decisive factor behind China’s dominance in global production and refinement, even more than the ready availability of domestic rare earth deposits, was the country’s **clear and decisive political will** to develop the sector through political and industrial policy and state subsidies.

Though the emergence of alternative sources outside China may be discouraged by market conditions, developments could well be driven by the **growing politicisation of rare earths**, a factor that is rapidly boosting their strategic importance earths and inducing importers to increase their support for new extraction projects.

How the different nations are moving

The **United States** more than anyone else is determined to minimise its vulnerability towards China, a policy that has been supported by the last two administrations. In 2019, the US Department of Defence entered negotiations with Malawi and Burundi to discuss support for a number of projects in order to ensure future rare earth supplies from the African continent.

The **European Union** too is determined to reduce its almost total dependence on China, which could otherwise prove a serious impediment to implementing the Green Deal. While the **EU is eager to increase strategic autonomy** in this sector by developing domestic rare earth deposits and recycling, it also affirmed in September 2020 that it was willing to **establish new strategic partnerships with African countries** to obtain additional supplies.

Os efeitos ambientais e a competição pelos recursos da “economia verde” (12) [FONTE: Pier Paolo Raimondi /ISPI - The Scramble for Africa’s Rare Earths: China is not Alone, 7/06/2021]

Other players, including **Australia and Japan**, are also keen to increase their presence in Africa. Australia, for example, though already the world’s second largest producer of rare earths, is continuously striving to **develop new sources to reduce Chinese dominance** in line with Washington’s interests. Two Australian companies are currently involved in projects in Tanzania (*Ngualla Mining Project*) and Malawi (*Makuutu Project*). As a result of the threats issued in 2010, **Japan** too is supporting African rare earth projects, for example in Namibia and South Africa, through the Japan Oil, Gas and Metals National Corporation.

China, of course, is not going to be left behind. **Beijing could well see itself obliged to increase its presence on the African continent** to guarantee future supplies of rare earths if it is serious about implementing its ambitious industrial plans for energy and technology transition. Since 2018, **China has begun** importing **certain rare earths in response to rising internal demand and as a result of environmental restrictions on illegal extraction practices**. Beijing is therefore certain to take action to safeguard its imports, and such action will inevitably be played out in Africa. China is likely to offer infrastructural investments and finance in exchange for resources and mineral and energy exploration rights on the African continent.

Since state backing and finance are essential to developing alternative rare earth resources, China will have a **head start** thanks to its geo-economic influence in Africa, its standing as a major consumer and its control over the refining industry. The United States will therefore have to offer African nations seriously advantageous conditions if it is not to fall behind in the race for rare earths, and must clearly understand that reducing Chinese dominance in this sector is not going to be easy.

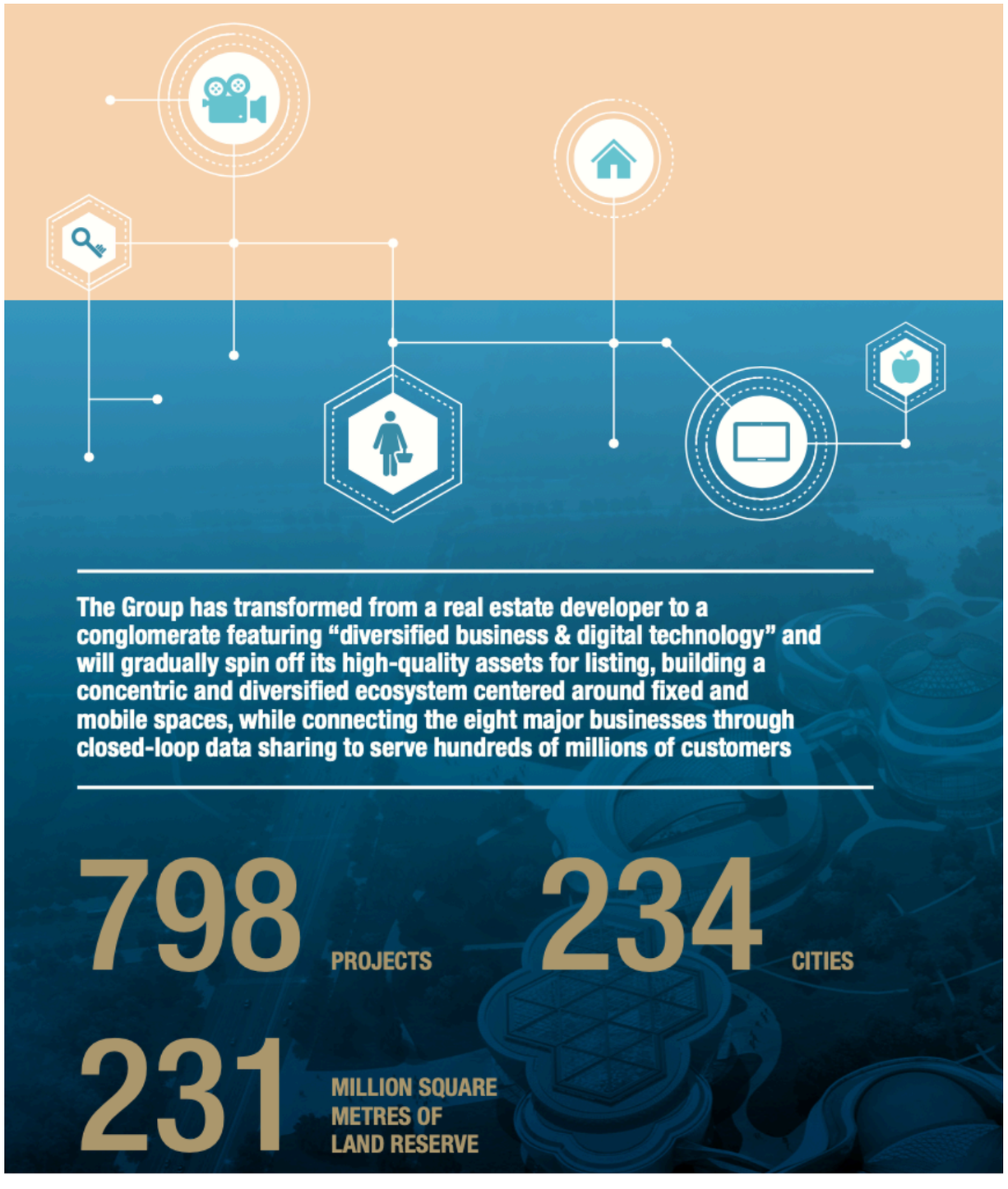
PARTE II – NOTAS BREVES

Uma crise financeira internacional com origem na China? (1)

[FONTE: China Evergrande Group]

Uma crise financeira internacional com origem na China? (2)

[FONTE: China Evergrande Group]



Uma crise financeira internacional com origem na China? (3)

[FONTE: The Economist, 21/09/2021]

What are the systemic risks of an Evergrande collapse?

The debacle is a test of Xi Jinping's commitment to reshaping the economy

Sep 21st 2021

CHINA'S FINANCIAL authorities are honing a new skill: the "marketised default"—or an orderly market exit and well-managed restructuring for troubled companies. The term has surfaced in government documents as regulators manage larger, more frequent and highly complex defaults. They have had some successes. Evergrande, a massive Chinese property developer on the brink of collapse, is proving to be anything but.

The company, the world's most indebted property firm with $300bn in liabilities, said on September 22nd that it had come to an agreement with bondholders on a coupon payment on an onshore bond due this week, easing some fears of an imminent collapse. Analysts had been expecting the company to default on both yuan- and dollar-denominated interest payments. The fate of the dollar-bond payments, due as *The Economist* went to press, was unclear. On September 23rd The People's Bank of China, the central bank, injected more short-term liquidity into the financial markets than it has since late-January, in a sign it was attempting to soothe the market concerns about an Evergrande default.

Uma crise financeira internacional com origem na China? (4)

[FONTE: The Economist, 21/09/2021]

The Economist

How far will the turmoil spread? The volatility leading up to the expected default on September 23rd has already given investors a taste of the risks emanating from China's deleveraging campaign. However, many analysts still believe severe contagion can be ring-fenced to groups with known connections to Evergrande and other weak property developers.

Start with banks, the main area of regulatory concern. China's banks have lent heavily to developers. A recent central-bank stress test on banks' exposure to the property sector concluded that an extreme scenario, in which loans to developers suffered a 15-percentage-point rise in their non-performing ratios, would eat up 2.1 percentage points of banks' overall capital-adequacy ratios, reducing the industry average to 12.3%. Such a drop in the banks' capital buffers, evenly spread across the banking sector, would be a tolerable depletion of protection. But such a crisis would not hit banks evenly; weaker banks would see a much larger reduction, according to analysts at S&P Global, a ratings agency.

Ping An Bank and Minsheng Bank, both hit by sell-offs in recent days, had big shares of their total loan books extended to property groups in the first half of the year (see chart). Minsheng has tight links to Evergrande.

Uma crise financeira internacional com origem na China? (5)

[FONTE: The Economist, 21/09/2021]

One difficulty in organising such a bail-out will be finding buyers. The crackdown on leverage has left few developers with excess cash to make such purchases. That means local governments may need to step in to help out.

Perhaps the biggest contagion risk flaring up in the market is not that posed by Evergrande itself but by Mr Xi's unyielding crackdown on leverage. Logan Wright of Rhodium Group, a research firm, sees Evergrande not as the root cause of the troubles in China's property sector. Instead it is a symptom of the government's efforts to reshape the market. Mr Wright says the assault on China's vibrant tech sector suggests Mr Xi will see the deleveraging campaign through.

These implications are bigger than the current market rout. China's property sector accounts for 20-25% of its economy. An extended campaign against developer debt could significantly lower China's growth prospects, says Tommy Wu of Oxford Economics, a research firm. Such a strategy could lead to much greater economic and financial turmoil farther down the road. It would also raise further questions about where Mr Xi's relentless and wide-reaching campaigns are leading China. ■

Uma crise financeira internacional com origem na China? (6)

[FONTE: CNBC, 22/09/2021]

Here's why the Evergrande crisis is not China's 'Lehman moment'

Evelyn Cheng

The Evergrande headquarters is seen in Shenzhen, southeastern China on September 14, 2021, as the Chinese property giant said it is facing "unprecedented difficulties" but denied rumours that it is about to go under.

Noel Celis | AFP | Getty Images

BEIJING — Property developer China Evergrande's debt woes are not likely to cause the same fallout as the collapse of U.S. investment bank Lehman Brothers in 2008, analysts said.

Evergrande's Hong Kong-listed shares have tumbled nearly 90% since July 2020, as the Chinese government cracked down on speculation in the real estate market.

Uma crise financeira internacional com origem na China? (7)

[FONTE: CNBC, 22/09/2021]

Evergrande holds physical assets

However, when it comes to the scale of potential impact on international financial markets, analysts point to a major difference between the Evergrande crisis and the Lehman collapse: Evergrande holds land, while Lehman held financial assets.

Evergrande has cash flow problems, but talk of systemic risks is "a bit overdone, frankly," Rob Carnell, regional head of research for Asia-Pacific at ING, said Wednesday on CNBC's "Squawk Box Asia."

"Let's face it, this is not Lehman's, this is not LTCM," Carnell said, referring to American hedge fund Long-Term Capital Management, which failed in the 1990s. and spurred a panic. "It's not a hedge fund with massive leveraged positions or a bank whose financial asset prices are hurtling towards zero. It's a property development firm with quite a lot of debt, you know, 300 billion plus thereabouts in dollar terms."

He expects that if Evergrande can get some cash flow into its physical assets, the company can finish its development projects, sell them and start paying down debt.

On Wednesday, the company's real estate group announced it would pay the interest on time on a mainland-traded bond denominated in yuan.

> ***No Lehman-style contagion story makes sense here and therefore no Lehman Moment will there be.***

Uma crise financeira internacional com origem na China? (8)

[FONTE: CNBC, 22/09/2021]

Strong government control

Another critical difference in Evergrande's case is the greater level of government control and involvement in China's real estate industry.

"Chinese banks and many other entities are government arms first, intermediators a distant second," analysts at research firm China Beige Book said in a report Monday. "Even non-state financials can be controlled to an extent rarely seen outside China. Commercial bankruptcy is a state choice."

"Beijing says lend, so you lend; when or even whether you get your money back is secondary," the report said. "No Lehman-style contagion story makes sense here and therefore no Lehman Moment will there be."

The legendary U.S. investment bank collapsed 13 years ago this month in an iconic moment of the global financial crisis. The bank underwrote tens of billions of dollars' worth of securities backed by risky mortgages during a U.S. housing bubble. The U.S. government ultimately allowed Lehman to fail, while bailing out other financial institutions.

In China's case, Beijing has tried to allow the market to play a greater role in the economy by letting more state-owned enterprises's loans default.

Authorities will be patient in Evergrande's case as they have two goals of preventing excessive risk-taking and maintaining stability in the property market, said Macquarie's Hu.

Uma crise financeira internacional com origem na China? (9)

[FONTE: SCMP, 24/01/2021]

China EV war: Evergrande raises US$3.35 billion in plan to dominate Tesla, NIO and other home rivals

Company to sell 952.4 million new shares to six Hong Kong and mainland tycoons at a 9 per cent discount to Friday's closing price Stock has risen 307 per cent over the past 12 months despite huge losses in recent years

Chinese EV makers like NIO, Xpeng, and Li Auto are rushing to catch an expected upswing in demand as China's economic rebound gains traction after growth quickened to a pre-pandemic pace of more than 6 per cent last quarter. China is also set to become the world's biggest market for EV

Uma crise financeira internacional com origem na China? (10)

[FONTE: SCMP, 24/01/2021]

when 4 million cars, or one in every five vehicles, will be powered by electricity by 2025.

Mileage of electric vehicles

Model	Driving range (km)
Tesla Model 3	445
NIO ES6	490
All New BYD Qin	421
Xpeng P7	706
Li ONE	800

China's best-selling new-energy vehicles in July

Model	Volume (units)
Tesla Model 3	11,014
GAC Aion S	3,685
Buick Velite 6	3,411
All New BYD Qin	3,400
Baojun E100	3,329

Model	Volume (units)
Chery eQ	3,056
Great Wall Ora R1	2,771
NIO ES6	2,610
Li ONE	2,445
BMW 5 Series PHEV	2,336

Sources: Company data, China Passenger Car Association SCMP

The race to the market is preceded by a rush to build a war chest of capital. China Evergrande NEV earlier sold 176.6 million of new shares in September for about HK$4 billion, or HK$22.65 each. Earlier this month, NIO raised about US$1.3 billion from the sale of convertible bonds, while Xpeng got US$1.98 billion of credit lines from five mainland banking groups. Last week, BYD announced a stock placement to raise US$3.9 billon.

China Evergrande NEV is controlled by the country's third richest tycoon Hui Ka-yan. His plan is to raise its car production capacity to 500,000 to 1 million vehicles within three to five years, the company said on its website. Its plants in Shanghai and Guangzhou will be capable of rolling out 200,000 units a year each at the beginning, before reaching 1 million by the fifth year, it added.

Uma crise financeira internacional com origem na China? (11)

[FONTE: SCMP, 11/10/2021]

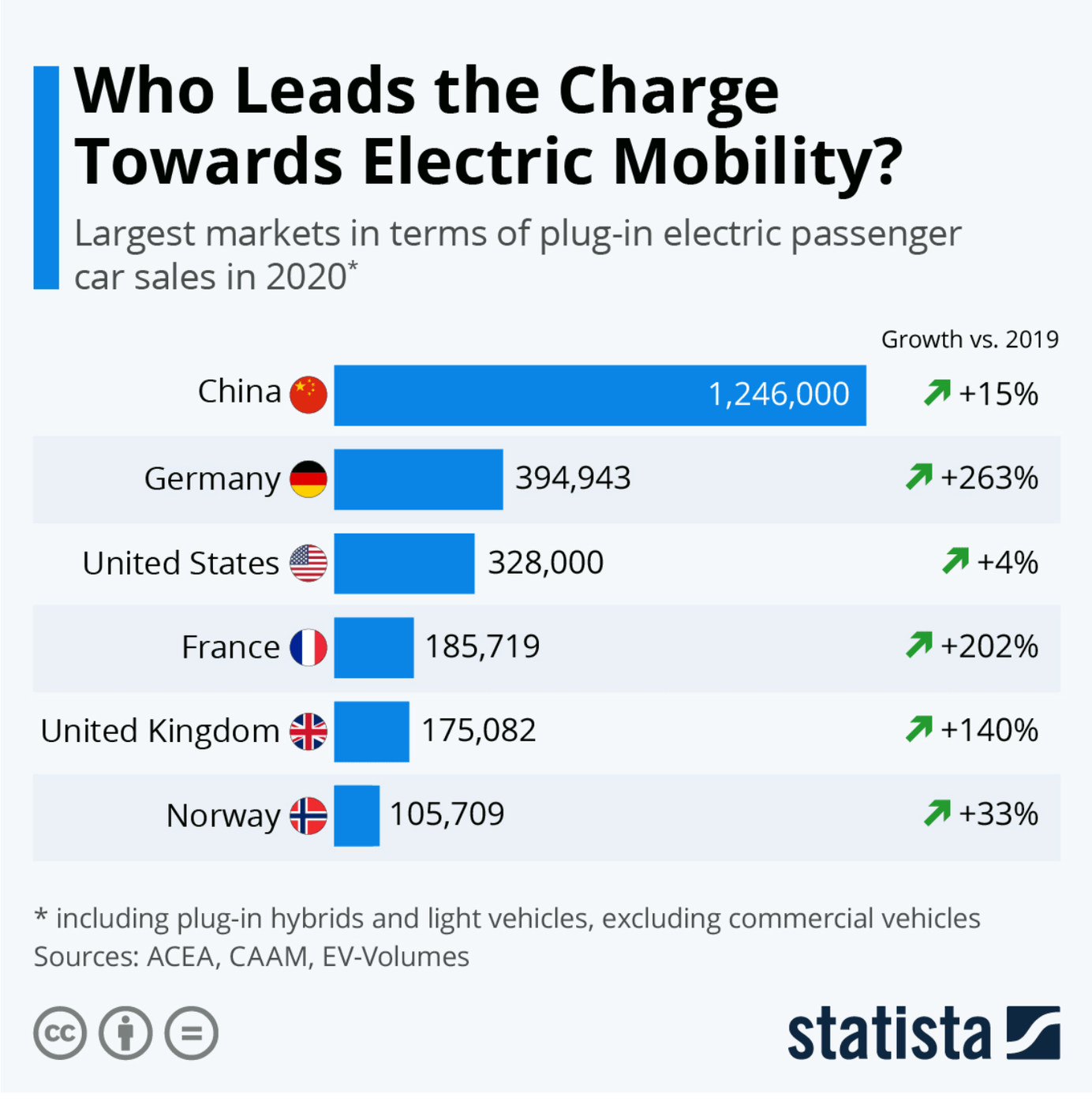
Evergrande's first EV may roll out in 2022 with local government aid, a year behind schedule and after losing US$84 billion in value

Carmaking arm of distressed developer said it will make sure the first EV is ready for delivery early next year Evergrande Auto said the Tianjin Binhai High-tech New Zone had pledged its support

The crisis at Evergrande, one of the largest property developers in China, is unnerving investors who are concerned about its effect on the stability of China's property market and economic growth.

Uma crise financeira internacional com origem na China? (12)

[FONTE: World Economic Forum / Statista, 23/02/2021]



Uma crise financeira internacional com origem na China? (13)

[FONTE: NYT, 4/05/2021]

As Cars Go Electric, China Builds a Big Lead in Factories

Fueled with money from Wall Street and local officials, automakers plan to build eight million electric cars a year there, more than Europe and North America combined.

Published May 4, 2021Updated Sept. 22, 2021

The body for an electric Zeekr, made by Geely, inside the welding hall of a factory near Ningbo, China.Lorenz Huber for The New York Times

The body for an electric Zeekr, made by Geely, inside the welding hall of a factory near Ningbo, China.Lorenz Huber for The New York Times

Uma crise financeira internacional com origem na China? (14)

[FONTE: NYT, 4/05/2021]

At Xpeng's highly automated factory in Zhaoqing, China, a robot lifted tinted glass for attachment to a car roof.Keith Bradsher for The New York Times

Chinese automakers concede that experience gives the established car companies some advantages. But they insist their plans will work.

"We have the will, and we have the patience," said He Xiaopeng, the chairman and chief executive of Xpeng, in an interview. "I think we will find it very challenging, but we must also move forward."

The Chinese industry has momentum. China will be making over eight million electric cars a year by 2028, estimates LMC Automotive, a global data firm, compared with one million last year. Europe is on track to make 5.7 million fully electric cars by then.

General Motors and other North American automakers have plans to catch up. In April, President Biden called for the United States to step up its electric vehicle efforts. During a virtual visit to an electric bus factory in South Carolina, he warned, "Right now, we're running way behind China."

Uma crise financeira internacional com origem na China? (15)

[FONTE: NYT, 4/05/2021]

North American automakers are on track to build only 1.4 million electric cars a year by 2028, according to LMC, compared with 410,000 last year.

Annual Production of Electric Cars

China is rapidly expanding annual production of electric cars, and is on a pace to make more than eight million vehicles by 2028 as its companies race to build new factories.

Global car companies are helping China's lead. Volkswagen recently began construction on its third Chinese factory designed to produce electric cars.

China already has the electric car infrastructure, thanks to a government-backed nationwide rollout of over 800,000 public charging stations. That is almost twice as many as the rest of the world, although drivers in the United States — who are more likely to live in single-family houses — can more easily plug in their cars at home.

With a slower deployment of charging stations outside China, automakers elsewhere plan to continue building some plug-in hybrid cars with small gasoline engines for a few more years. But the market for fully electric cars is already bigger than for plug-in hybrids, and the electric cars' lead is widening rapidly. Automakers like G.M. plan to eliminate gasoline and diesel engines entirely in the next 15 years.

For the new Chinese cars, name recognition will be a major challenge. The brands are mostly unfamiliar even to Chinese drivers. On roads filled with Buicks, Volkswagens and Mercedes-Benzes, they could struggle to stand out.

Uma crise financeira internacional com origem na China? (16)

[FONTE: Cartoon Rebel Pepper / Radio Free Asia, 23/09/2021]

Sugestões de leitura