ATTY. FERNANDO S. PEÑARROYO

MINING AND RESOURCES LAW

GEOLOGY BOARD REVIEW

JULY 2021

Society of USeP Geologists
College of Engineering, University of Southeastern Philippines
Bo. Obrero, Davao City, Davao del Sur

UP CWM ZENA'NA ♀ 1980

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- Past President, Geological Society of the Philippines
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- Legal Committee, Petroleum Association of the Philippines
- Former Director, International Geothermal Association
- Geology Board Reviewer in Resources and Environmental Law
- Former Lecturer, Asian Institute of Technology (Bangkok), UP National Institute of Geological Sciences
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- https://penarroyo.com/

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LEGAL AND INSTITUTIONAL FRAMEWORK

- Constitution
- Mining Act of 1995
- Indigenous Peoples Rights Act
- Local Government Code
- Environmental Impact Statement System
- Executive Order No. 79
- DENR/MGB Issuances

CONSTITUTION

- Regalian doctrine - The exploration, development and utilization of these natural resources are under the full control and supervision of the State.
- The State has the option of mining agreements with Philippine citizens or Philippine corporations or associations. At least 60% of the capital of a corporation or association must be owned by Phil. Citizen to qualify as a Philippine corporation or association.
- Exception to the nationality requirement: The Constitution authorizes the President to enter into agreements with foreign-owned corporations involving either financial or technical assistance, for large- scale exploration, development and utilization of minerals, petroleum and other mineral oils.

MINING
(Exploration, Development and Utilization of Mineral Resources)

DIRECT STATE PARTICIPATION
(thru the Philippine Mining Dev't Corp.)

Joint Venture/
Working Agreement/MOA
w/ Qualified Entity

PRIVATE ENTITY
(Qualified Person)

National Govt.
(DENR-MGB)

Various Mining
Tenements

Local Govt.
(Provincial/City Govt.)

Various Mining
Tenements
(usually small-scale)

MINING ACT

- Exploration Permit
- Mineral Agreements
- - MPSA
- Financial and Technical Assistance Agreement
- Mineral Processing Permits
- http://www.mgb.gov.ph/images/stories/RA_7942.pdf
- http://www.mgb.gov.ph/images/stories/CDAO-Final.pdf

Republic of the Philippines
Congress of the Philippines
Metro Manila

Republic Act No. 7942

AN ACT INSTITUTING A NEW SYSTEM OF MINERAL RESOURCES EXPLORATION, DEVELOPMENT, UTILIZATION AND CONSERVATION

CHAPTER I
INTRODUCTORY PROVISIONS

Section 1. Title. - This act shall be known as the Philippine Mining Act of 1995.

Section 2. Declaration of Policy. - All mineral resources in public and private lands within the territory and exclusive economic zone of the Republic of the Philippines are owned by the State. It shall be the responsibility of the State to promote their rational exploration, development, utilization and conservation through the combined efforts of government and the private sector in order to enhance national growth in a way that effectively safeguards the environment and protect the rights of affected communities.

Section 3. Definition of Terms. - As used in and for purposes of this Act, the following terms, whether in singular or plural, shall mean:

(a) "Ancestral lands" refers to all lands exclusively and actually possessed, occupied, or utilized by indigenous cultural communities by themselves or through their ancestors in accordance with their customs and traditions since time immemorial, and as may be defined and delineated by law.
(b) "Block" or "meridional block" means an area bounded by one-half (1/2) minute of latitude and one-half (1/2) minute of longitude, containing approximately eighty-one hectares (81 has).

EXPLORATION PERMIT

- Grant gives holder the right to conduct exploration for all minerals within a specified area
- Valid for 2 yrs, can be renewed for another two but cannot exceed 6 yrs
- If exploration results reveal economic mineral deposits and technically feasible for mining, holder can file a declaration of mining project feasibility (MPF)
- Approval of MPF shall grant the holder exclusive right to Mineral Agreement or FTAA

MINERAL AGREEMENTS

- Mineral Production Sharing Agreement ("MPSA")
- Co-Production Agreement
- Joint Venture Agreement
- All agreements grant the contractor the exclusive right to conduct mining operations and to extract all mineral resources in the contract area

MPSA

- Contractor provides the financing, technology, management and personnel necessary for the implementation of the MPSA
- Valid for 25 yrs and renewable for another 25
- Government is entitled to a share in the gross production of the mining operation in the form of 4% excise tax

FINANCIAL AND TECHNICAL ASSISTANCE AGREEMENT ("FTAA")

- Pursuant to the Constitution, the Mining Act provides that the President may enter into an FTAA with 100% foreign-owned corporation for the large-scale exploration, development and utilization of mineral resources.
- Minimum investment of US$50M
- Not applicable to cement raw materials, marble, granite, sand and gravel, and construction aggregates

MINERAL PROCESSING PERMITS

- Under the Mining Act, mineral processing means the milling, beneficiation or upgrading of ores or minerals and rocks or by similar means to convert the same into marketable products.
- Valid for 5 yrs, renewable for like periods up to 25 yrs
- Can be 100% foreign ownership

SMALL-SCALE MINING

- PD 1899 “A Decree Establishing Small Scale Mining As a New Dimension in Mineral Development” allowed local government units to issue mining permits https://mgb.gov.ph/images/stories/PD_1899.pdf
- RA 7076 “People's Small-Scale Mining Act” (1991) mandates that all applications for small scale mining will be under the approval of the Secretary of the DENR https://mgb.gov.ph/images/stories/DAO2015-03.pdf
- PD No. 1899 and RA No. 7076 shall continue to govern small-scale mining operations. For areas not declared as People’s Small-Scale Mining area (PSSMA) under RA No. 7076, the pertinent rules and regulations of PD 1899 shall apply.
- PMRB - Accepts, process and evaluate applications and determine administrative charges and fees for Quarry, Sand and Gravel, Small Scale Mining Permits

TYPES OF MINING PERMITS ISSUED BY PROVINCIAL GOVERNOR THRU THE PROVINCIAL MINING REGULATORY BOARD (PMRB)

- Quarry Permit
- Sand and Gravel Permits
  1. Commercial Sand and Gravel Permit
  2. Industrial Sand and Gravel Permit
  3. Exclusive Sand and Gravel Permit
- Gratuitous Permit
  1. Private Gratuitous Permit
  2. Government Gratuitous Permit
- Small Scale Mining Permit

  - Only one (1) small scale mining contract may be awarded at any one time

  - Area shall not exceed twenty hectares (20) per contractor

  - A contract shall have a term of two (2) years, renewable subject to verification by the Board for like periods

Other Mining Permits

Special Minerals Extraction Permits

DPWH-DENR-DILG-DOTR JMC No. 1, Series of 2019

https://mgb.gov.ph/attachments/article/777/JOINT%20MEMORANDUM%20CIRCULAR%20NO.1.pdf

MGB MC 2019-07

DENR AO 2020-07

Offshore Mining Permits

MGB MC 2016-05

http://databaseportal.mgb.gov.ph/mgb-public/api/attachments/download?key=nkWbhYa7qvxr0dzChGPCUFVaJqatFXXqwYXDZBvCtrH1xpjDeZCMj0s6BFU2aS5m

MGB MC 2020-008

IMPORTANT LAWS RELATED TO RESOURCES DEVELOPMENT

- Indigenous Peoples Rights Act ("IPRA") https://www.officialgazette.gov.ph/1997/10/29/republic-act-no-8371/
- Environmental Impact Statement ("EIS") System http://eia.emb.gov.ph/wp-content/uploads/2016/06/PD-1586.pdf
- Local Government Code of 1991 https://www.officialgazette.gov.ph/downloads/1991/10oct/19911010-RA-7160-CCA.pdf
- National Integrated Protected Areas System Act ("NIPAS") https://www.officialgazette.gov.ph/1992/06/01/republic-act-no-7586/
- Executive Order No. 79 https://lawphil.net/executive/execord/eo2012/eo_79_2012.html
- Rules of Procedure for Environmental Cases https://philja.judiciary.gov.ph/files/learning_materials/A.m.No.09-6-8-SC_Rules_of_Procedure_for_Envi_Cases.pdf

INDIGENOUS PEOPLES RIGHTS ACT

- Free and prior informed consent

- right to self determination, respect for IP decision-making process, right to accept or reject projects located in ancestral domains

LOCAL GOVERNMENT CODE

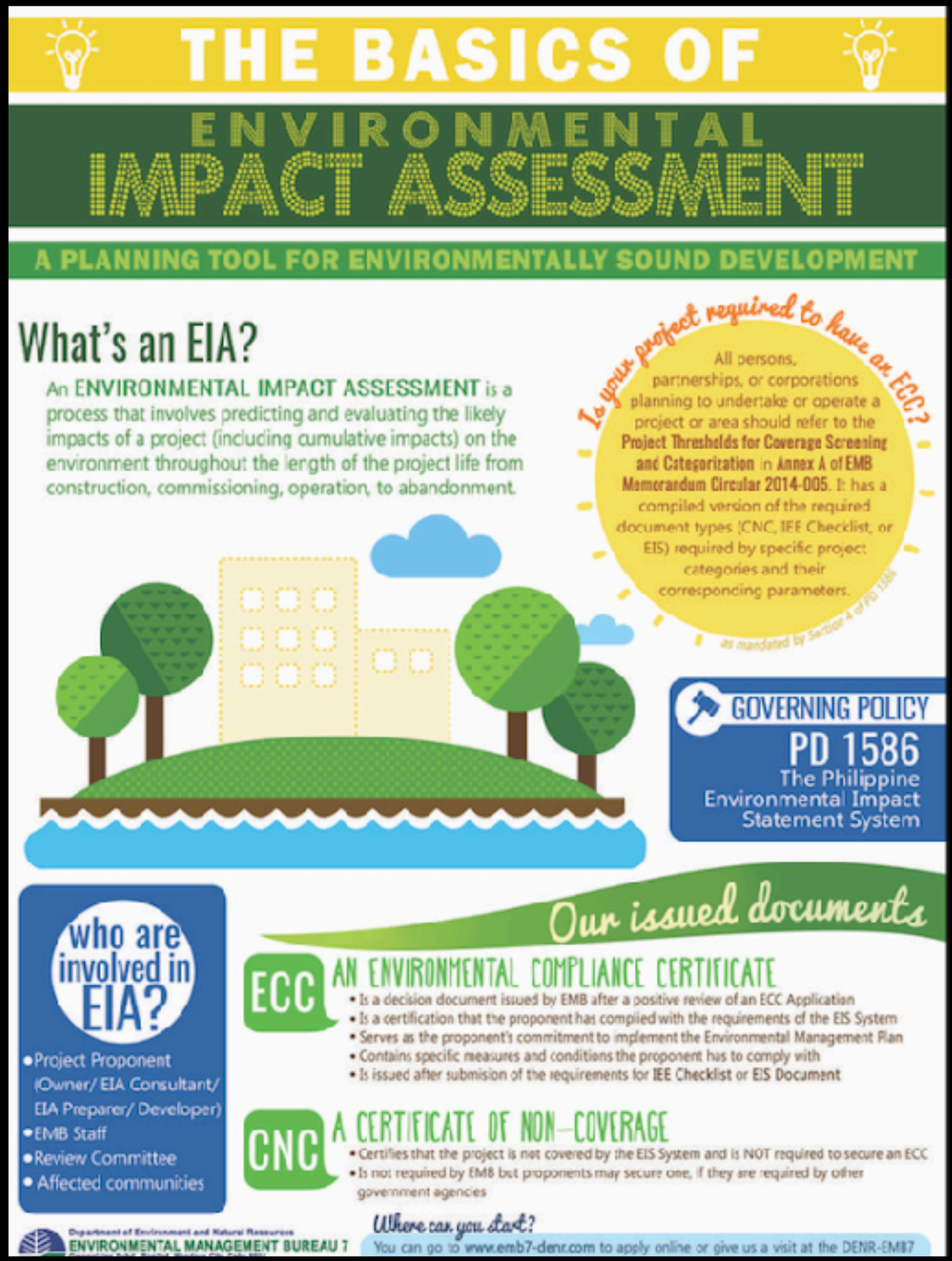
- Proponents applying for exploration applications intended for exploration activities are required to conduct consultation with all LGUs concerned, or the legislative councils (*sanggunian*) at the provincial, city/municipal, and barangay levels

- declaration of mining moratoriums; ban of open pit mining;

- Issues: local taxation; wastes, emissions and pollution; loss of agricultural land and subsequent livelihood; threat to water resources; relocation and right of way; and health and safety of workers and communities.

ENVIRONMENTAL COMPLIANCE CERTIFICATE

- Project proponents of environmentally critical projects and projects within environmentally critical areas must obtain an environmental compliance certificate prior to commencement



EXECUTIVE ORDER NO. 79

In October 2011, a mining study group was constituted, which included the Executive Secretary and several members of the Climate Change Adaptation and Mitigation Cabinet Cluster.

Input from different stakeholders were obtained, including those from the following: mining companies and allied industries and services; environmental CSO/NGOs; church groups; members of the academe; LGUs; different government agencies concerned with mining.

It sets the policy framework that will guide government and other stakeholders in the implementation and operationalization of mining laws, rules and regulations. It also provides concrete steps and solutions to major issues and concerns of the mining sector.

https://www.officialgazette.gov.ph/2012/07/06/executive-order-no-79-s-2012/

EXECUTIVE ORDER NO. 79

- Full enforcement of environmental standards in mining
- Review of existing mining operations
- Moratorium on the grant of new mineral agreements pending legislation - originally issued moratorium on the issuance of EPs, MPSAs, FTAAs by the DENR
- Establishment of mineral reservations
- Imposition of competitive public bidding requirement
- Development of downstream industries

EXECUTIVE ORDER NO. 79

- Disposition of abandoned ores and valuable metals
- Creation of a Mining Industry Coordinating Council
- Measures on Small-Scale Mining Activities
- Consistency of local ordinances with national laws
- Creation of One-stop Shop for all Mining Applications
- Creation of a Centralized Database for the Mining Industry and Integrated Map System to include mining related maps
- Use of the Programmatic Environmental Impact Assessment

RULES OF PROCEDURE FOR ENVIRONMENTAL CASES

- Introduced new remedies for the "alleged" violation of environmental laws (April 13, 2010):
  - temporary environmental protection order;
  - writ of continuing mandamus; and
  - Writ of Kalikasan.
- Until the new policies and institutional safeguards are fully in place, the government should strictly apply the precautionary principle. The principle is public policy under the Climate Change Act of 2009, and was enunciated by the Supreme Court in issuing the Writ of Kalikasan.
- https://www.chanrobles.com/scdecisions/rulesofcourt/2010/am_09-6-8-sc_2010.php

PRECAUTIONARY PRINCIPLE

- A generally accepted international law principle – expressed by the Supreme Court in the Rules of Procedure for Environmental Cases (Part V, Rule 20):

  - Sec. 1. When there is a lack of full scientific certainty in establishing a causal link between human activity and environmental effect, the court shall apply the precautionary principle in resolving the case before it.

  - Sec. 2. In applying the precautionary principle, the following factors, among others, may be considered: (1) threats to human life or health; (2) inequity to present or future generations; (3) prejudice to the environment without legal consideration of the environmental rights of those affected.

WRIT OF KALIKASAN

- a legal remedy available to any natural or juridical person, entity authorized by law, people's organization, non-government organization, or any public interest group accredited by or registered with any government agency,
- on behalf of persons whose constitutional right to a balance and healthful ecology is violated, or threatened
- with violation by an unlawful act or omission of a public official or employee, or private individual or entity,
- involving environmental damage of such magnitude as to prejudice the life, health or property of inhabitants in two or more cities or provinces.
- Rules of Procedure for Environmental Cases A.M. No. 09-6-8-SC Rule 7, Sec. 1.
- Difference from Writ of Continuing Mandamus; temporary environmental protection order is a remedial measure

OTHER INVESTMENT LAWS IN ENERGY RESOURCE DEVELOPMENT

- Presidential Decree (P.D.) 87, as amended, "Oil Exploration and Development Act of 1972" for petroleum service contracts – allows 100% foreign ownership https://www.officialgazette.gov.ph/1972/12/31/presidential-decree-no-87-s-1972/

- PD 972, as amended, introduced the coal service contract system and established the guidelines for coal operations – 60/40 coal operating contracts https://www.officialgazette.gov.ph/1976/07/28/presidential-decree-no-972-s-1976/

- RA 9513 "Renewable Energy Law of 2008" for renewable energy service contracts including geothermal https://www.officialgazette.gov.ph/2008/12/16/republic-act-no-9513/

CONTENTS

MINING INDUSTRY UNDER DUTERTE

- DMO 2016-01, issued on 08 July 2016, mandated the audit of all operating mines and moratorium on new mining projects; The audit strictly covers the environmental, economic, social, legal and technical aspects of the mining operations.
- DAO 2017-10, issued on 27 April 2017, banning the open pit mining method for gold, silver, copper, and complex ores;
- Closure of 28 operating mines and the cancellation of 75 mineral production sharing agreements as they allegedly encroached on watersheds and destroyed marine ecosystems.
- Realignment of Social Development and Management Program Budget raised PHP 402M for COVID-19 response
- The metallic mineral production value ended the year on a positive note with a 1.13% gain from PhP130.74 billion in 2019 to PhP132.21 billion in 2020, a PhP1.47 billion increase.
- Three pending copper developments: Philex's Silangan in Surigao del Norte, Indophil's Tampakan in South Cotabato, and St. Augustine's Kingking in Compostela Valley

RECENT MINING DEVELOPMENTS

- DENR lifted of the moratorium on new mining projects (MPSA) imposed under EO 79 and DENR M.O. 2016-01 by issuing EO 130; consultations for IRR ongoing

https://www.officialgazette.gov.ph/2021/04/14/executive-order-no-130-s-2021/

- DENR is working to lift the ban on open pit mining for as long as mining laws are strictly enforced
- Philippine government resolved the FTAA extension of OceanaGold
- DENR mandates mining contractors to participate in the Philippine Extractive Industries Transparency (PH-EITI)
- DENR required all operating mines to have ISO certifications
- DENR to declare high mineral potential areas as mineral reservations including all existing operating mines

Legal and Regulatory Issues

Local government units outright refusal of consent

- declaration of mining moratoriums, ban of particular technologies like open pit mining and submarine tailings disposal

Environment

- low level of awareness, understanding and attention, afforded to the complex array of policy, regulatory, technical financing and organizational factors affecting mining projects and their wider economic and environmental benefits.

Foreign ownership

- resource nationalism

BAN ON OPEN PIT MINING HAS NO LEGAL BASIS AND SHOULD BE REVERSED

- Open pit mining should NOT be banned in the country. It is an internationally accepted method done in many countries of the world and has been repeatedly proven to be safe for miners, the community and the environment. While the environmental footprint may be visibly large, open pit mines can be successfully rehabilitated and converted into other land uses like agriculture, forestry, and even tourism.

- For shallow ore deposits, such as nickel, iron, coal, and copper, open pit mining is the only economically viable method extraction.

- An open pit mining ban will also have adverse impacts on our energy security, as coal mining is done in the country only through open pit mines.

An open-pit gold-copper mining area in Barangay Didipio, Kasibu in Nueva Vizcaya.—RICHARD BALONGLONG

Clarification on the Definition of Open Pit Mining Method as per DENR Administrative Order No. 2017 and Other Surface Mining Methods
MGB MC 2019-08

http://databaseportal.mgb.gov.ph/mgb-public/api/attachments/download?key=xqGKvdKNr531XkgJUMzH8dkPEEtFtb5Z5lBtFhD8EvhHScFrTqR8uFnXCe4CBUvn

Differentiated from open cast mining, strip mining, and quarrying as per DENR AO 2010-21.

RESOURCE NATIONALISM

- Governments are now looking at different strategies to extract a greater share of the value from mining operations.
- Strategies include increasing taxes and royalties to restricting foreign ownerships.
- Requiring in-country processing or beneficiation prior to export is another form.
- Encouraging in-country processing can also be achieved indirectly by imposing export restrictions and increasing export levies on unrefined ores.
- **Continued resource nationalism from governments makes the countries less attractive for mining investment.**

ENERGY RESOURCES ISSUES

- **Oil -** West Philippine Sea maritime dispute
- **Natural Gas** - Malampaya gas field depletion, no new gas fields discovered, no legal midstream framework, lack of available natural gas infrastructure network
- **Coal** - modest indigenous reserves, ban on open pit mining, expiring coal operating contracts - end of 50 year limit
- **Geothermal** - dropped in world ranking, permitting requirements, grid connectivity, incentives for new technology
- **Nuclear** - no legal and regulatory framework, public acceptability, new technologies

MALAMPAYA DEEPWATER GAS-TO-POWER PROJECT

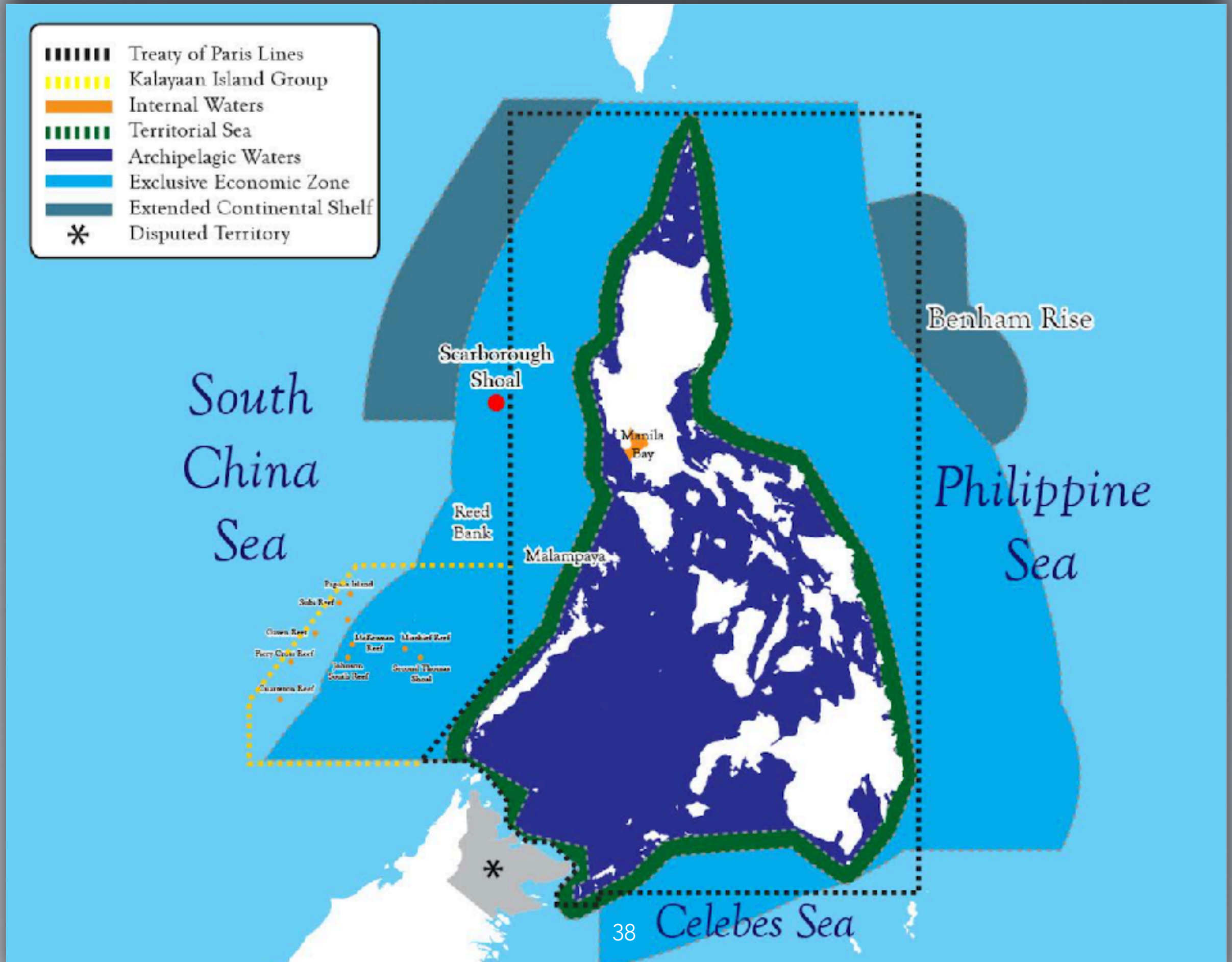
- Employs deepwater technology to draw natural gas that fuels three gas-fired power plants and provides 30% of Luzon's power generation requirements
- Delivers through 6 Gas Sales and Purchase Agreements and fuels 2,700 MW of power stations (baseload plants) and 500+ MW (mid-merit and peaking plants)
- Data from the DOE indicated that given the present production level and continuous decrease in reservoir pressure, drop in supply is expected by 2022.
- SC 38 will expire in 2024 with no certainty in an extension and while it may have enough gas, this may not be sufficient to last beyond five years.

Downstream Natural Gas

Integrated LNG Terminal

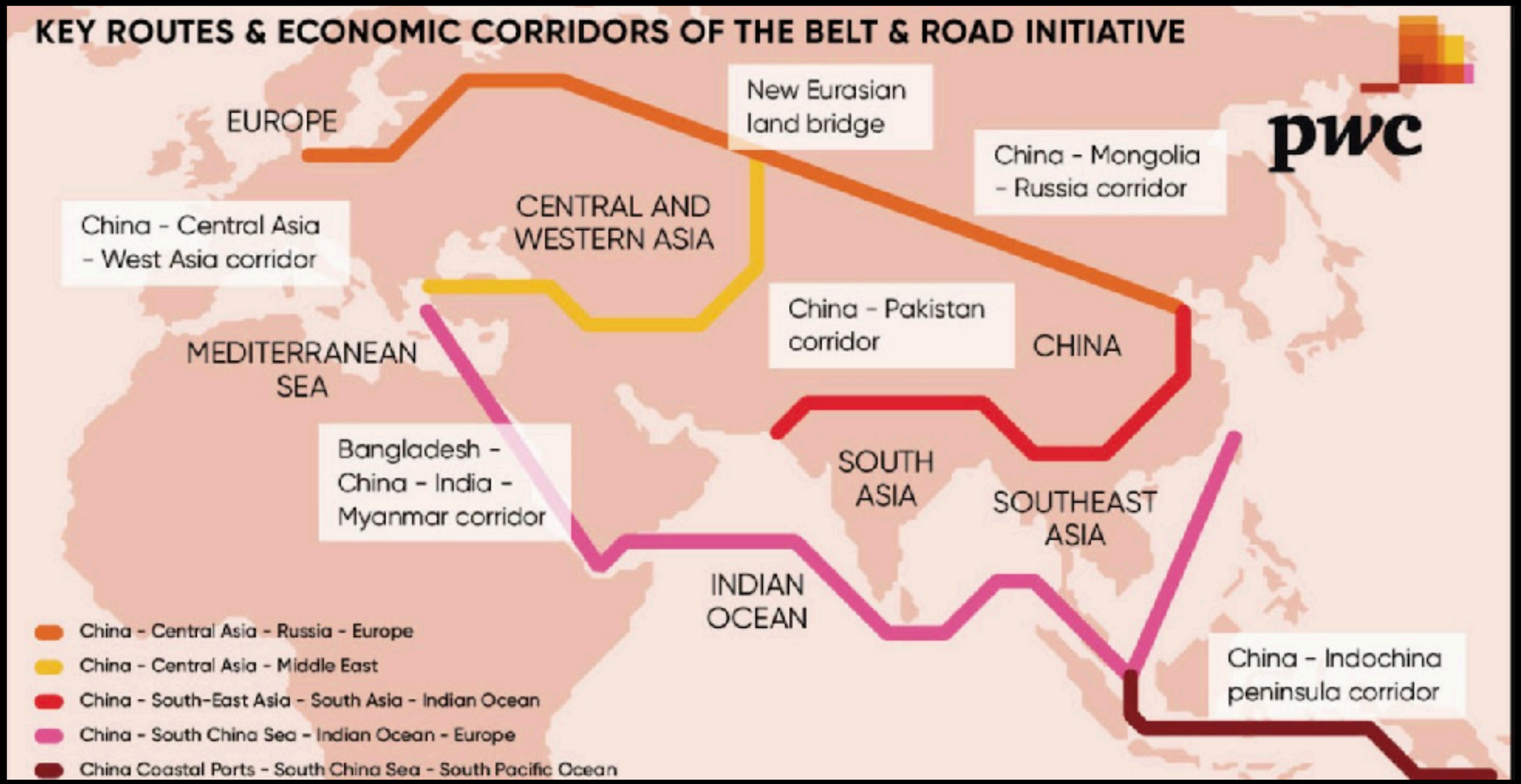
- Safeguard against the anticipated depletion of the Malampaya gas facility in 2024.
- Initial 200-MW power plant, storage facilities, liquefaction and regasification units.
- Output will serve PEZA areas.

WEST PHILIPPINE SEA DISPUTE ARBITRAL RULING


Treaty of Paris Lines
Kalayaan Island Group
Internal Waters
Territorial Sea
Archipelagic Waters
Exclusive Economic Zone
Extended Continental Shelf
Disputed Territory
South China Sea
Philippine Sea
Celebes Sea
Benham Rise
Scarborough Shoal
Manila Bay
Reed Bank
Malampaya

CHINA'S NINE-DASH LINES

China's Belt and Road Initiative



PERMANENT COURT OF ARBITRATION RULING

- China's Claim to historic rights under the Nine-Dash Lines is contrary to UNCLOS and cannot be the basis of any maritime entitlements (territorial sea, exclusive economic zone, extended continental shelf)
- All historic rights in the EEZ were extinguished upon the effectivity of UNCLOS
- China violated the exclusive right of the Philippines to its EEZ by interfering with the petroleum activities of Filipino vessels within the EEZ
- **However, China does not recognize the ruling.**

What is the PMRC ?

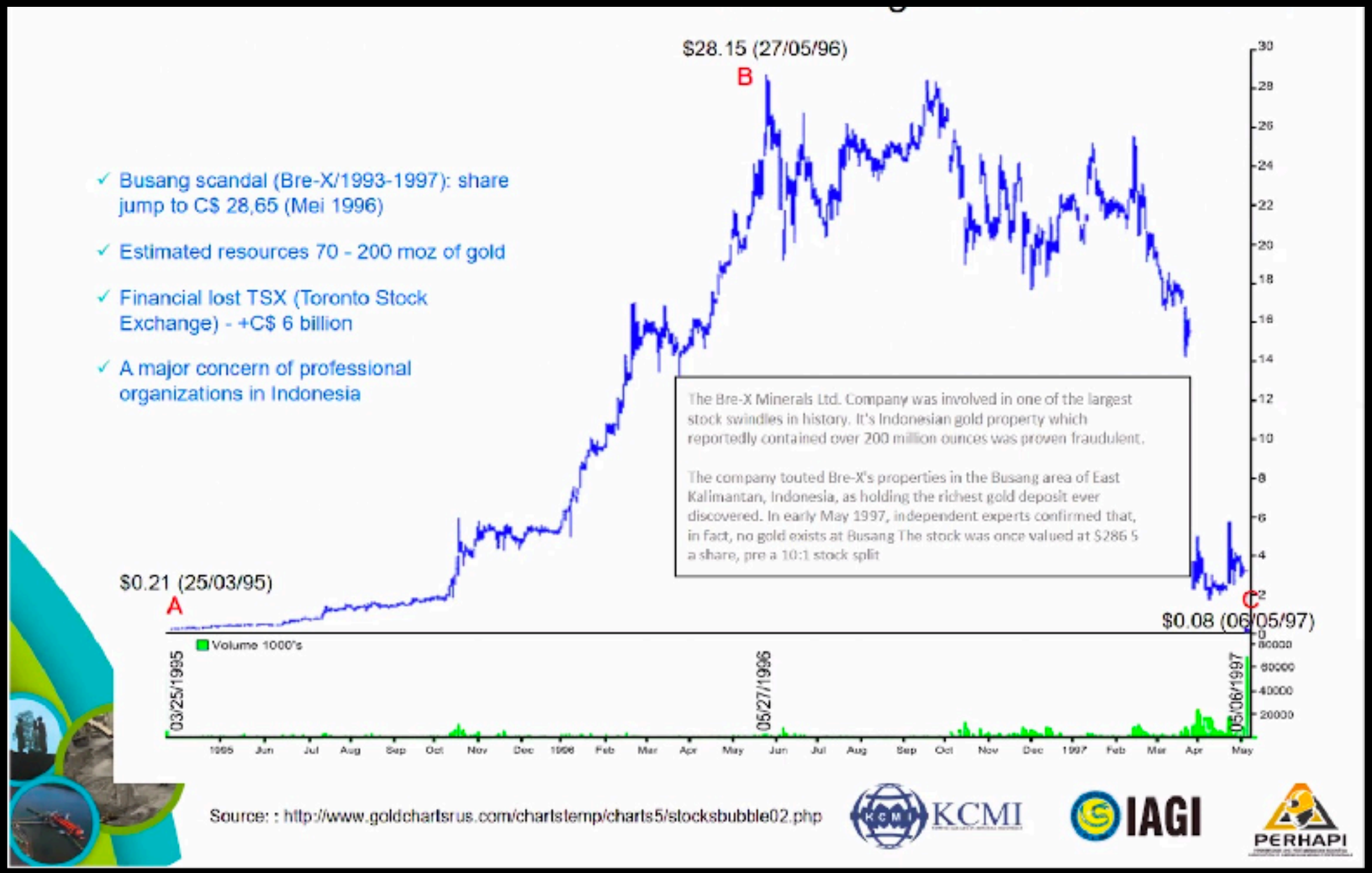
The Philippine Mineral Reporting Code (PMRC) sets out the minimum standards, recommendations and guidelines for Public Reporting in the Philippines of Exploration Results, Mineral Resources and Ore Reserves

- required for all listed mining and mineral exploration companies in PSE or when applying for listing with the PSE
- to protect investors in mineral exploration and mining
- to protect the capital markets from fraudulent practices
- to promote a common understanding in reporting mineral assets
- DENR AO No. 2010-09 - Providing for the Classification and Reporting Standards of Exploration Results, Mineral Resources and Ore Reserves

Bre-X's Busang Mining Fraud of 1997

"Single Event" that fast tracked mineral reporting standards

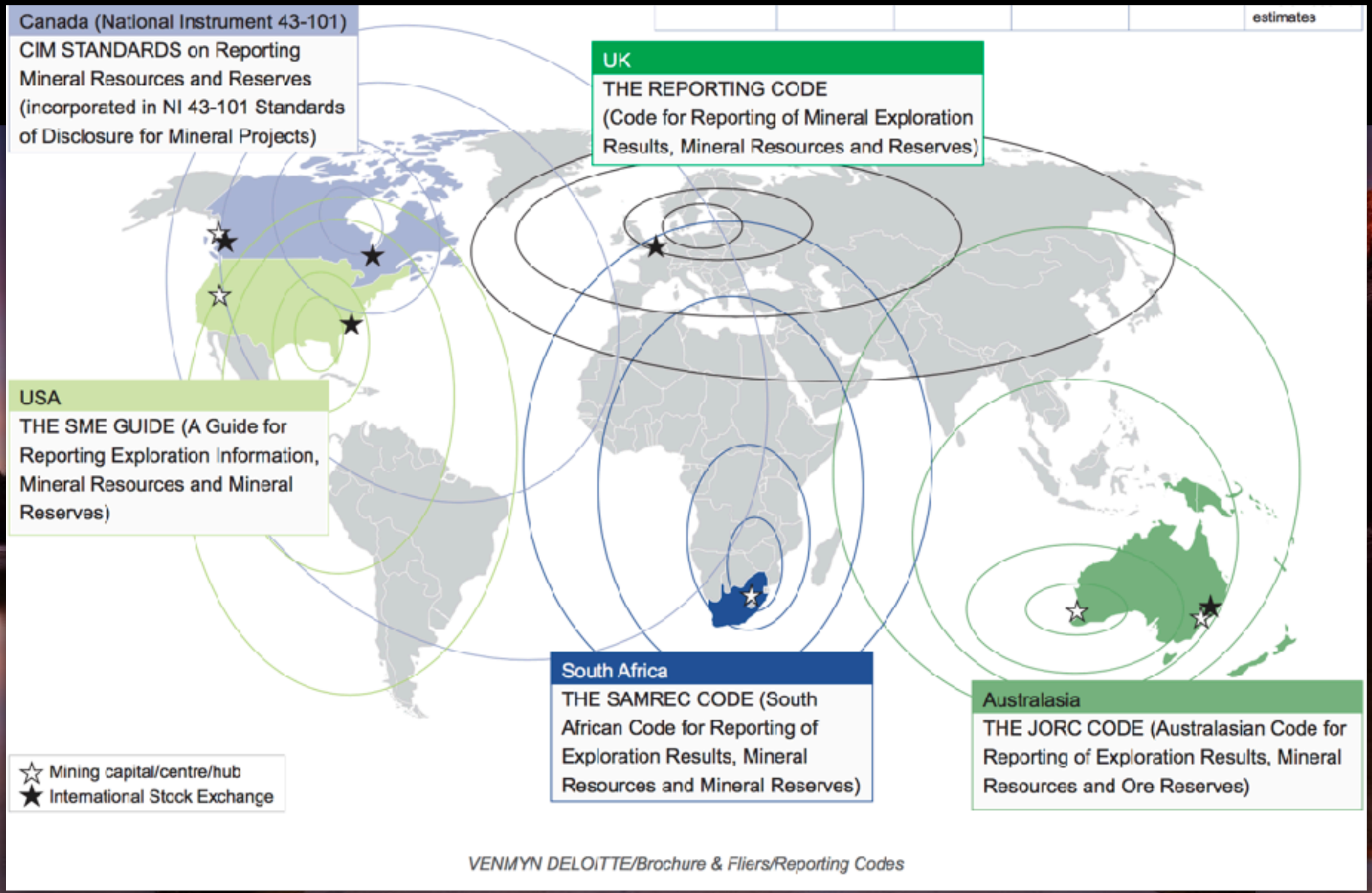
- ✓ Busang scandal (Bre-X/1993-1997): share jump to C$ 28,65 (Mei 1996)
- ✓ Estimated resources 70 - 200 moz of gold
- ✓ Financial lost TSX (Toronto Stock Exchange) - +C$ 6 billion
- ✓ A major concern of professional organizations in Indonesia



Source: : http://www.goldchartsrus.com/chartstemp/charts5/stocksbubble02.php

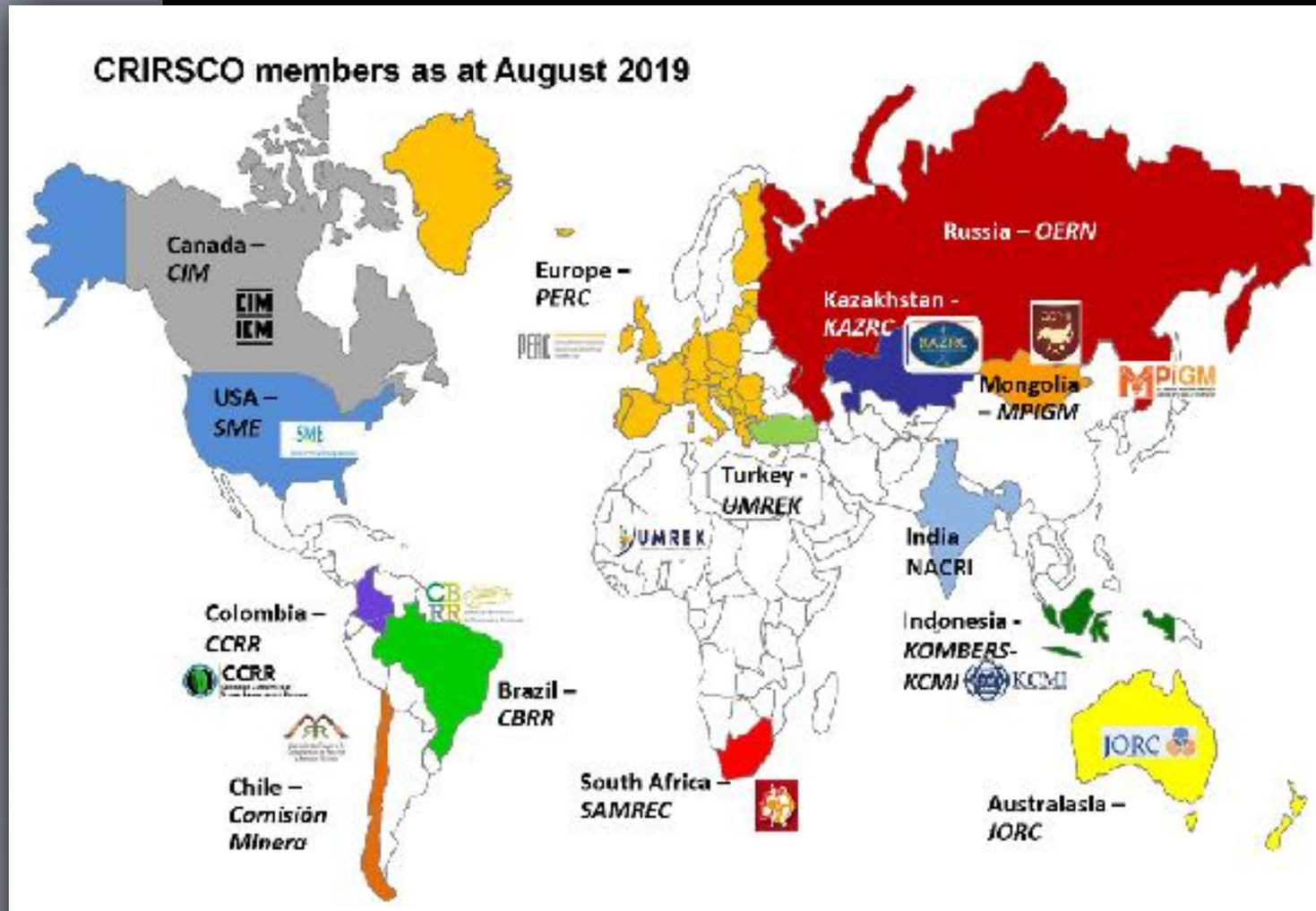
KCMI IAGI PERHAPI

REPORTING CODES



14 Members
CRIRSCO “Family of Codes”

Australasia - JORC
Canada - CIM
South Africa - SAMREC
USA - SME
Europe - PERC
Chile - CM
Brazil - CBRR
Russia - NAEN
Kazakhstan - KZCRA
Mongolia - MPIGM
Indonesia - KCMI
Turkey - UMREC
Colombia - CCRR
India - NACRI
PHL is waiting approval of its application



Committee for Mineral Reserves International Reporting Standards

CRIRSCO

Task Force of International Council for Mining & Metals (ICMM)

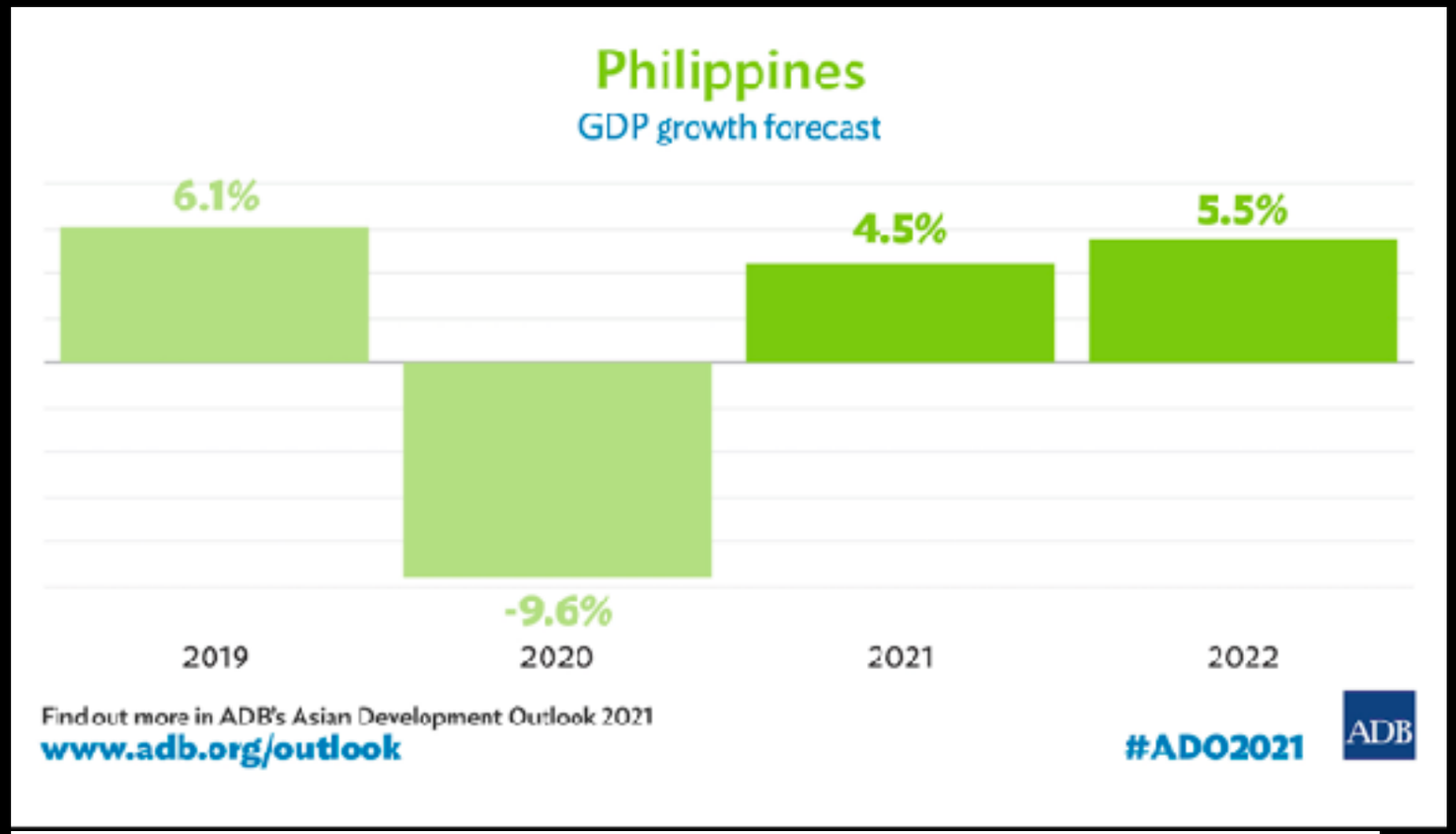
What does the PMRC do ?

- Sets out minimum standards for public reporting in the Philippines of Exploration Results, Mineral Resources and Ore Reserves, as may be required as a listed company in PSE or when applying for listing with the PSE
- Applicable to all solid minerals, including industrial minerals and coal. Provides a mandatory system for classification of tonnage/grade estimates according to geological confidence, technical, economic & other considerations ("Modifying Factors")
- Requires public reports to be based on work undertaken by Competent Person(s)
- Provides extensive guidelines in the preparation of PMRC compliant reports
- Governing Principles: **Transparency, Materiality, & Competence**
- PMRC Technical Reporting by Competent Persons

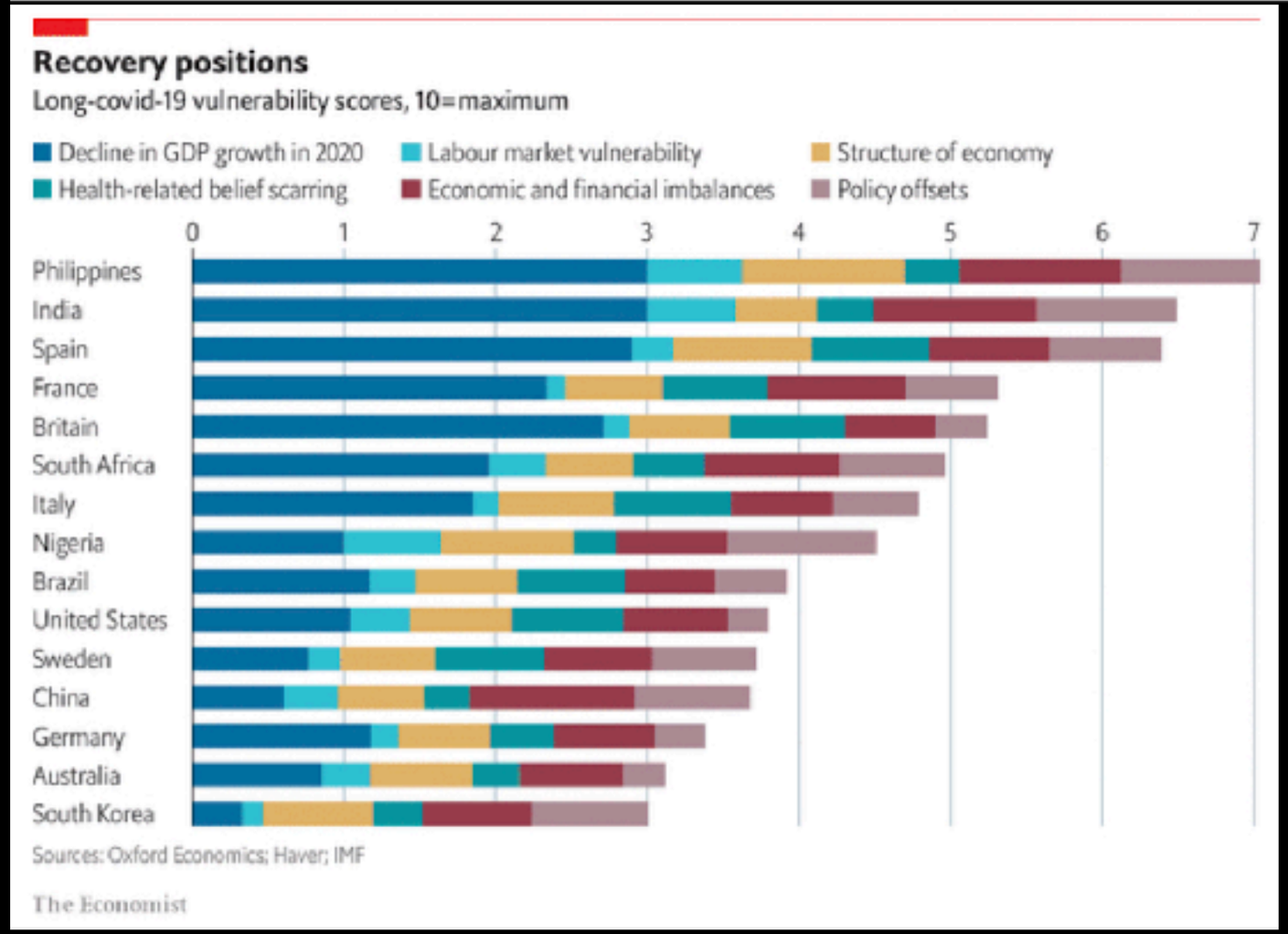
Exploration Results	**Geologists**
Mineral Resources	**Geologists**
Ore Reserves	**Mining Engineers**
Metallurgy	**Metallurgical Engineers**

What the PMRC does not do?

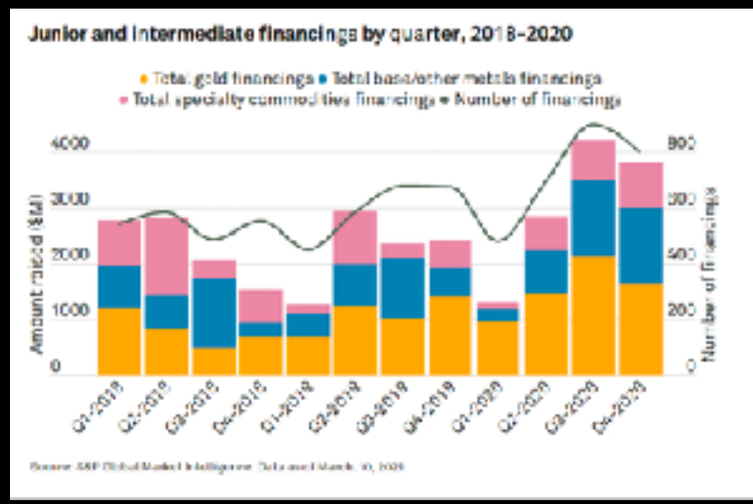
- It does not impair the practice of Geology, Mining and Metallurgy in the Philippines
- It does not compel geologists, mining engineers and metallurgists with relevant experience to become CPs
- It does not regulate the procedures used by CPs to estimate and classify Mineral Resources and Ore Reserves
- It does not regulate Companies' internal classification or reporting systems
- It does not deal with breaches of the Code

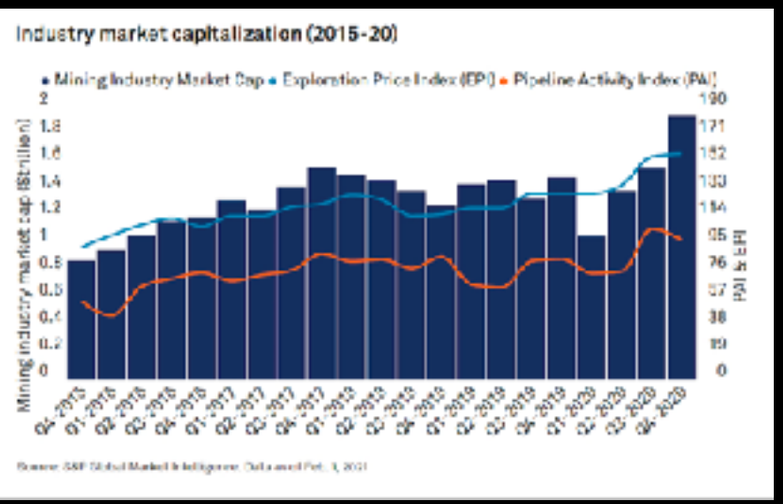


Philippine economy recovering in 2021 with stronger growth in 2022

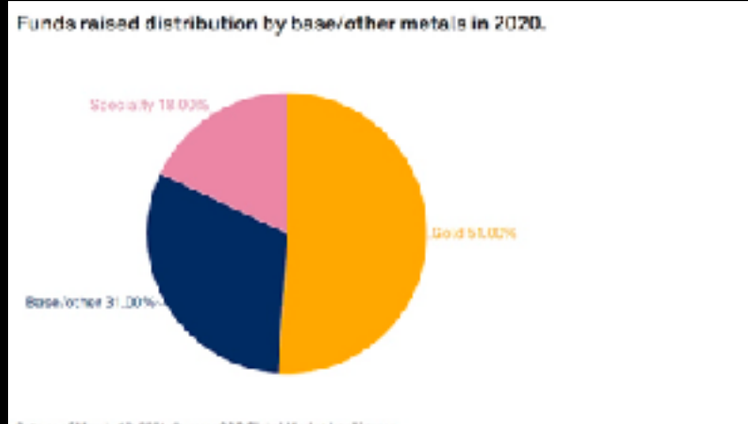


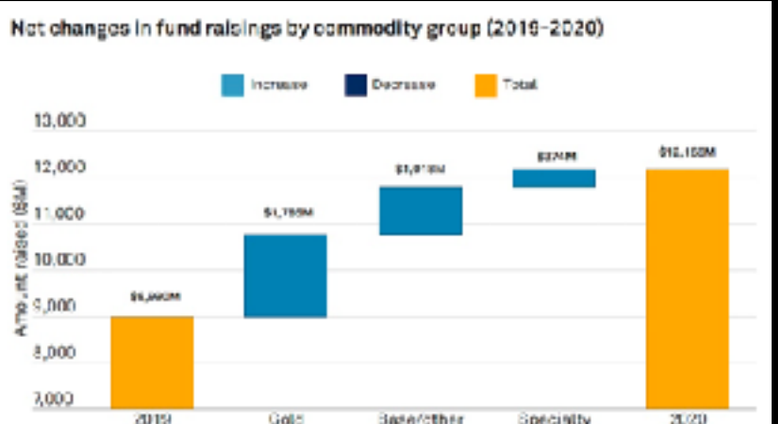
But 2021 recovery hampered by the pandemic



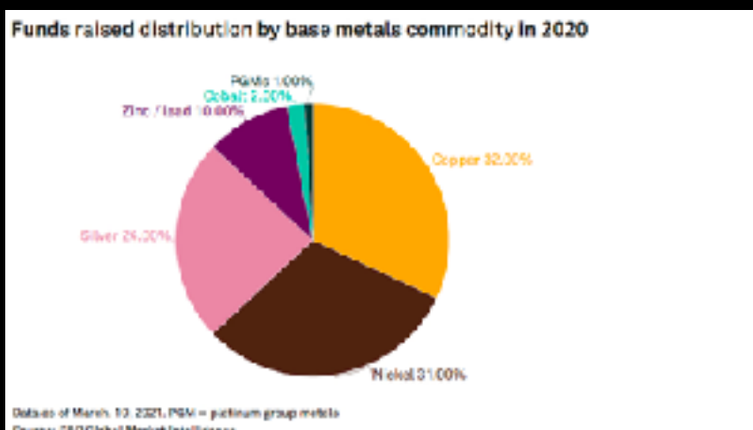


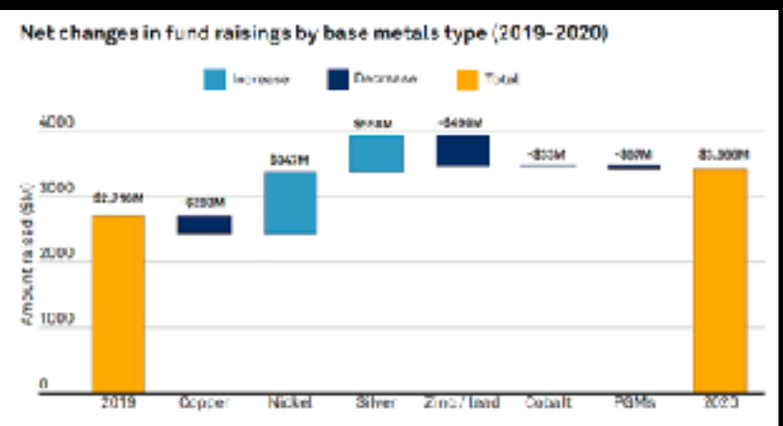
Mining financing and mining industry capitalization hit record high in 2020



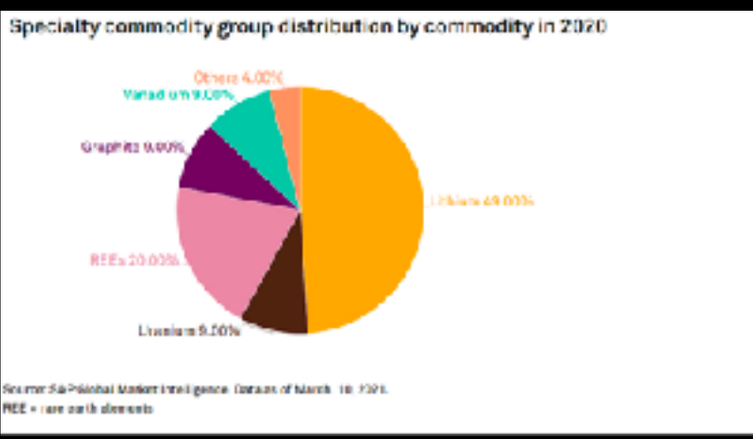


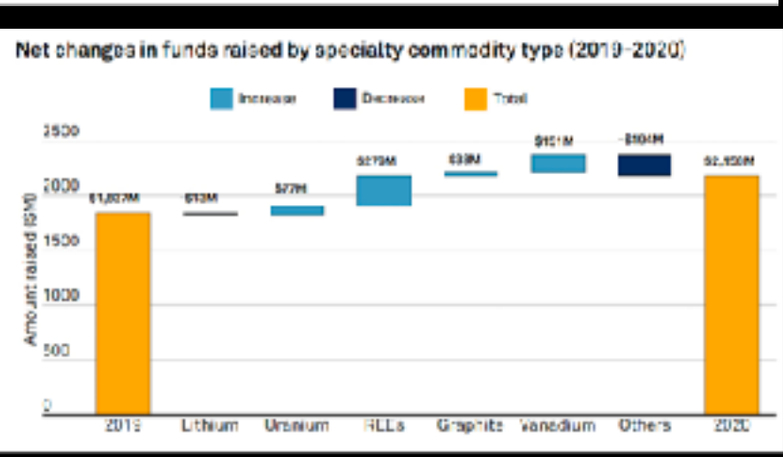
More than half of funds raised in 2020 supported gold exploration & development





Base/other metals lifted by strong nickel and silver markets





Lithium accounted for nearly half of special commodity fundraising in 2020

CONTENTS

Debunking the myths in the mining industry

- Mining is environmentally destructive
- Local communities do not benefit from mining
- Mining is a sunset industry
- There will be no more jobs in the mining industry
- Mining industry is an exclusive employer

Mining is environmentally destructive

- Mining is not “green” or environmentally friendly.

Fact: Have any of the people who believe this ever reviewed the regulations and licensing requirements for a mine to operate? That’s not to mention the ongoing checks, reports and submissions to a variety of government departments. Obviously there are always companies that could have done a better job from an environmental perspective in the past, but in the Philippines, operations are governed by regulations and legislation – and most companies not only comply, but are very keen to do the right thing by the environment.

LEGAL REQUIREMENTS UNDER THE MINING ACT AND ITS IRR

- Technical and financial qualifications to engage in large-scale mining in the Philippines;
- The area being applied for is open and available for mining activities and is not located within any of the areas where mining is prohibited;
- An approved ECC, showing that the impacts of mining in the area can be mitigated and/or remediated through proper environmental protection measures;
- An approved Project Feasibility Study, showing that the mine has enough ore reserves to operate profitability, and can give government a fair share in revenues.
- The endorsement/approval of the local government units (Province, Municipality/City, and Barangays) that will be impacted by the proposed mining activity;
- The endorsement/approval of the indigenous peoples, if the area being applied for is within their ancestral domains.
- Requirements under EO 79 IRR - https://mgb.gov.ph/images/stories/DAO_2012-07.pdf

OTHER LAWS RELATED TO RESOURCES DEVELOPMENT

- Ecological Solid Waste Management Act https://www.officialgazette.gov.ph/2001/01/26/republic-act-no-9003-s-2001/
- Toxic Substances and Hazardous and Nuclear Wastes Control Act https://www.officialgazette.gov.ph/1990/10/26/republic-act-no-6969/
- Clean Air Act https://emb.gov.ph/wp-content/uploads/2015/09/RA-8749.pdf
- Clean Water Act https://emb.gov.ph/wp-content/uploads/2015/09/RA-9275.pdf
- 1976 Philippine Water Code defines the extent of the rights and obligations of water users https://www.officialgazette.gov.ph/1976/12/31/presidential-decree-no-1067-s-1976/
- 1998 Philippine Fisheries Code provides for the sustainable development of fishery and aquatic resources https://www.officialgazette.gov.ph/1998/02/25/republic-act-no-8550/
- Pollution Control Law http://r12.emb.gov.ph/wp-content/uploads/2016/04/presidential-decree-no984.pdf
- National Environmental User's Fee of 2002 https://mgb.gov.ph/images/stories/DAO_2002-16.pdf
- Palawan Council for Sustainable Development http://extwprlegs1.fao.org/docs/html/phi19797.htm
- Incentives granted by the Board of Investments (BOI) pursuant to Executive Order No. 226, otherwise known as the Omnibus Investments Code of 1987 https://boi.gov.ph/wp-content/uploads/2018/02/EO-226-omnibus-investments-code.pdf

LAND CONVERSION CERTIFICATE

- Required if a project structure such as road or building falls on agricultural or public land outside of the MPSA/FTAA area.
- Filed with the CENRO
- Filing fee of PHP1,000 and inspection fee of PHP10,000

OTHER DENR PERMITS AND FEES

- TREE CUTTING PERMIT - Cutting of trees within road right of way, mining area, building site. Fee is PHP 300.00 per tree cut
- WASTEWATER DISCHARGE PERMIT
- PERMIT TO OPERATE Air Pollution Device for the generators
- HAZARDOUS WASTE GENERATOR ID together with inspection clearance of its hazardous waste storage
- MINE WASTES AND TAILINGS FEE – may be increased to PHP 0.10 per MT of mine wastes and PHP 0.15 per MT of tailings

OTHER PERMITS

- Business Permit from Mayor's Office – based on capitalization
- Building Permit from Mayor's Office
- Application for Alien's Local Employment from the Department of Labor and Employment and Bureau of Immigration – for foreigners
- Permit to Install Communication Equipment for installation of radio communication from the Department of Information, Communications Technology

Mining is environmentally destructive

- Nearly all of the Philippines is covered with applications and titles for mining.

Fact: Mineral titles only apply to 2.42% of the Philippine total land area, a figure that has remained steady for more a long period of time because of the mining application moratorium. Only a tiny proportion is actually disturbed by exploration activities and eventually ends up as an operating mine. However, it should be emphasized that said area is still subject to the mandatory relinquishment by contractors provided by law.

Only 2.42% of the Philippine total land area
is covered by mining tenements!

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

MINES AND GEOSCIENCES BUREAU

MINERALS INDUSTRY AT A GLANCE

Philippine Total Land Area

30 Million has.

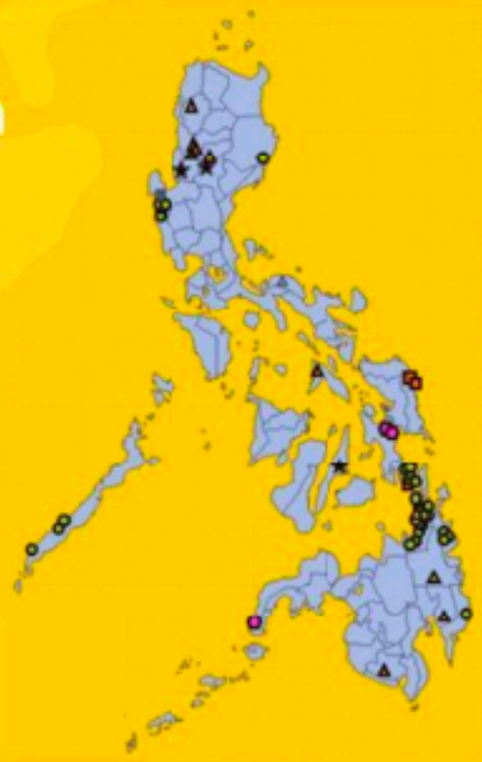
High Mineral Potential

9 Million has.

727,372.1818 has.

or ONLY 2.42%

of the Philippine total land area
is covered by mining tenements
as of May 31, 2020



OPERATING MINES AND QUARRIES 2020

50 metallic mines
54 non-metallic mines
5 processing plants
3,389 LGU Issued Permits

Mining is environmentally destructive

- Mining can be done anywhere. Nowhere is sacred. Nowhere is safe.

Fact: Mining operations cannot happen in areas identified under the law. Every project is subject to a detailed assessment under the Environmental Impact Statement System under PD 1586 and if they don’t meet the strict criteria set out to minimize any impacts on the environment then they are not approved.

Areas for Mining under the Mining Act of 1995

Areas Open to Mining Operations

- all mineral resources in public or private lands, including timber or forestlands as defined in existing laws

Areas Closed to Mining Operations

a. In military and other government reservations, except upon prior written clearance by the government agency concerned;

b. Near or under public or private buildings, cemeteries, archeological and historic sites, bridges, highways, waterways, railroads, reservoirs, dams or other infrastructure projects, public or private works including plantations or valuable crops, except upon written consent of the government agency or private entity concerned;

c. In areas covered by valid and existing mining rights;

d. In areas expressly prohibited by law;

e. In areas covered by small-scale miners as defined by law unless with prior consent of the small-scale miners

f. Old growth or virgin forests, proclaimed watershed forest reserves, wilderness areas, mangrove forests, mossy forests, national parks provincial/municipal forests, parks, greenbelts, game refuge and bird sanctuaries as defined by law and in areas expressly prohibited under the National Integrated Protected Areas System (NIPAS) under Republic Act No. 7586, Department Administrative Order No. 25, series of 1992 and other laws.

EXECUTIVE ORDER NO.79

Areas closed to mining applications – In addition to the areas declared Mining Act and NIPAS Act, the EO disallows applications for mineral contracts, in:

- prime agricultural lands, in addition to lands covered by the Comprehensive Agrarian Reform Law of 1988, including plantations and areas devoted to valuable crops;

- strategic agriculture and fisheries development zones, fish refuge and sanctuaries declared as such by the Secretary of the Department of Agriculture;

- tourism development areas as identified in the National Tourism Development Plan; and

- other critical areas, island ecosystems, and impact areas of mining as determined by current and existing mapping technologies, that the DENR may identify pursuant to existing laws, rules, and regulations, such as but not limited to the NIPAS Act.

Mining is environmentally destructive

- Water supplies is placed at risk by mining activities.

Fact: Impacts on water are a central element of the assessment of mining projects by the government. All mining proposals are required to prepare detailed water studies that are independently assessed by government agencies and scientists. Mineral exploration drilling involves the same or very similar techniques to water bore drilling. All drilling requires government licenses, which include specific requirements to protect aquifers.

NATIONAL WATER RESOURCES BOARD PERMIT UNDER PD 1067

- Authorizes water extraction from surface and groundwater sources
- Application should define the projected annual consumption and source/s of water and competing uses
- Application fee is PhP 7,200 per permit / well / surface extraction point
- Annual water charges is PhP5,000 plus a fee ranging from P12.30 to P30.55/liter/second

Mining is environmentally destructive

- Land is useless when mining is finished.

Fact: Before any mine is started a rehabilitation plan must be submitted and approved by the government. All disturbance must be rehabilitated and environmental funds created and lodged to ensure all rehabilitation is completed to specified standards.

UNDER THE MINING ACT, COMPANIES ARE REQUIRED TO FUND/DEPOSIT TO THE FOLLOWING ENVIRONMENTAL PROTECTION MEASURES:

- Environmental Protection and Enhancement Program
- Annual Environmental Protection and Enhancement Program
- Contingent Liability and Rehabilitation Fund
- Monitoring Trust Fund
- Rehabilitation Cash Fund
- Environmental Trust Fund
- Mine Waste and Tailings Fees Reserve Fund
- Final Mine Rehabilitation and Decommissioning Fund

Local communities do not benefit from mining

- Mining companies don’t pay enough taxes.

Fact:

Mining industry contributed ₱102.3 billion to the GDP in 2020.
Contributed about ₱25.52 billion from national and local taxes, fees and royalties.
Mining and quarrying activities generated 184,000 jobs and around ₱25.71 billion was committed for SDMP.
Metallic mineral production at ₱132.69 billion.
Total value of minerals, mineral products, and non-metallic mineral manufacture exported was at US$5.2 billion.

Local communities do not benefit from mining

- Land owners have no rights.

Fact: Mining companies can’t compulsorily acquire property (there are no provisions in any legislation that allow for this). Land owners can refuse mining on the surface of their land where it contains agricultural land or other significant improvements. Land owners can negotiate the terms of exploration on their land. Their land cannot be accessed for exploration before an agreement between explorers and landholders is reached. This also applies to ancestral land and domains of indigenous peoples.

Royalties

Free and Prior Consent of Indigenous Peoples/IndigenousCultural Communities (IPs/ICC) for Mining Operations within Ancestral Domains

- **not less than 1% of the value of the gross output** of minerals sold in favor of IPs/ICCs if mining operations are conducted within ancestral lands/domains

Small-scale Miners

- over areas covered by small-scale miners, the contractor shall pay royalties to the concerned small-scale miners upon utilization of the minerals **depending on the agreement with small-scale miners**

Landowners/mining tenement owners

- Mining operations within private property are **subject to negotiations** between the landowner/tenement holders and the mining companies

Local communities do not benefit from mining

- Mining companies don't care about their social impact.

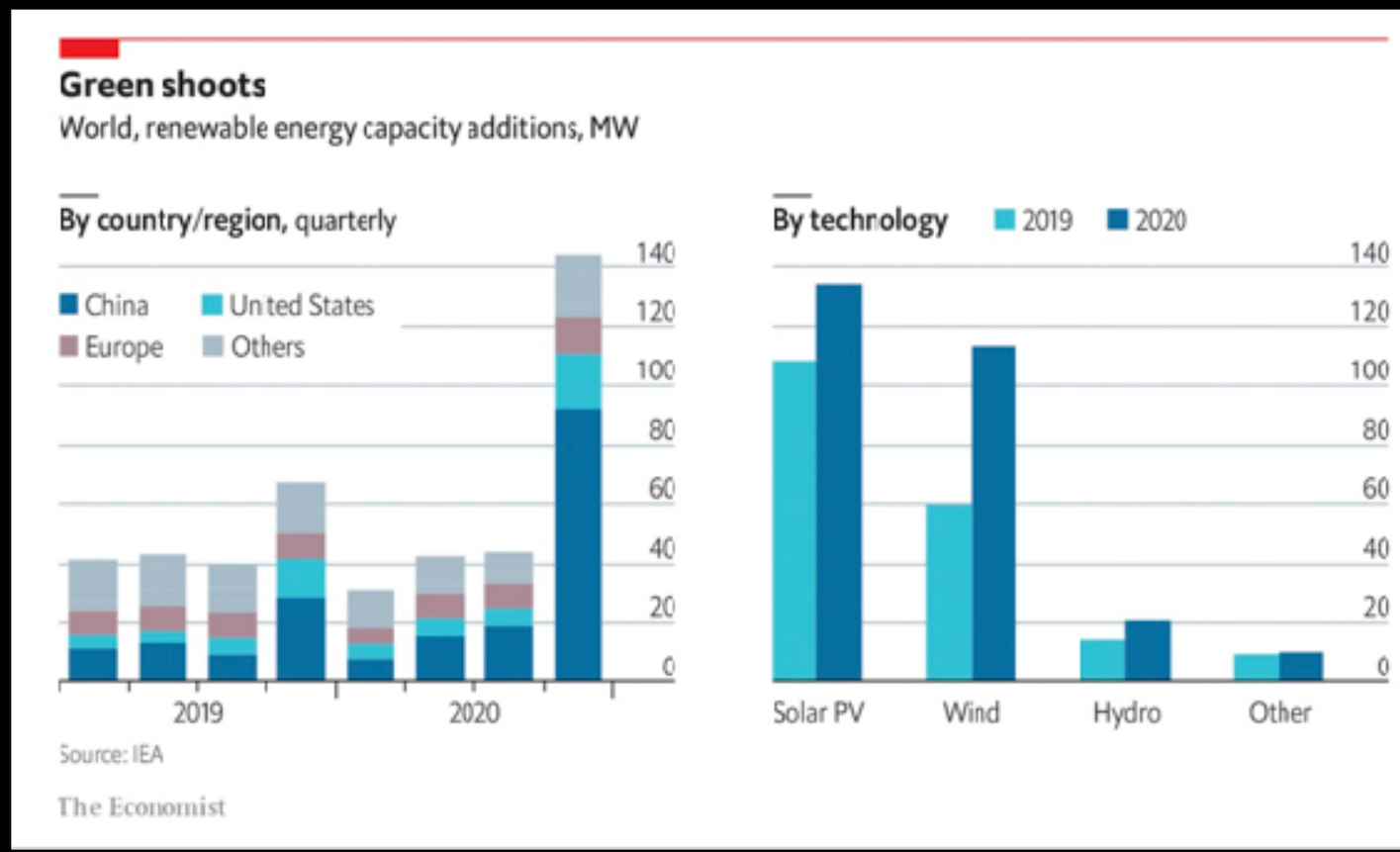
Fact: The last 10 years have been a time of social revolution and seen the rise of a 'social license to operate' for all businesses. There is now an expectation on mining companies to demonstrate social responsibility in a whole range of ways, beyond just providing employment and paying taxes. It is expected that local and indigenous communities, most impacted by mining activities, derive direct and sustainable benefits from their mineral wealth. Positive social outcomes from mining include increased employment for local people, support for local businesses, training and educational initiatives for local communities, and co-creation and collaboration on community development projects.

Mining is a sunset industry

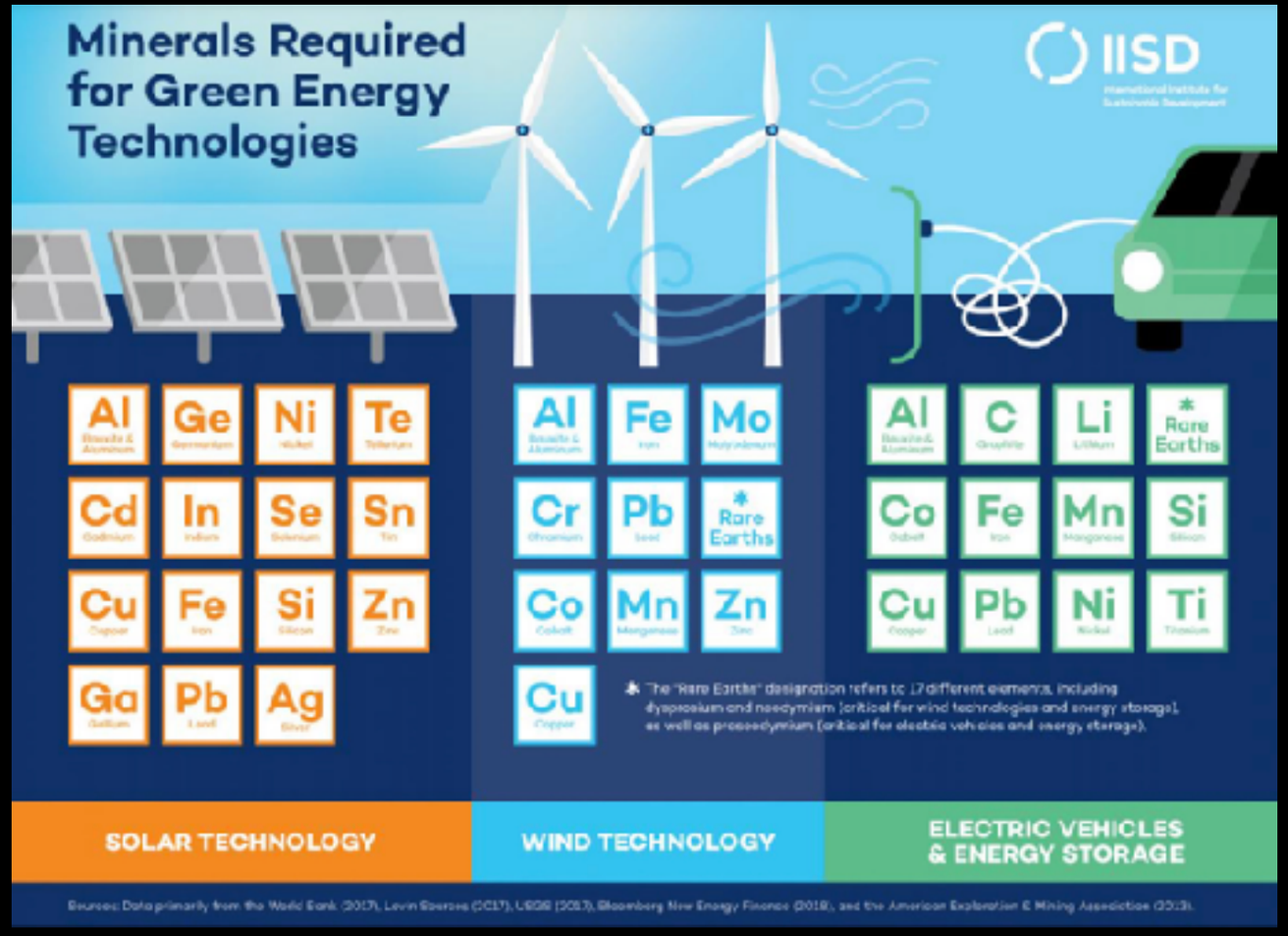
- Renewable energy means the end of mining.

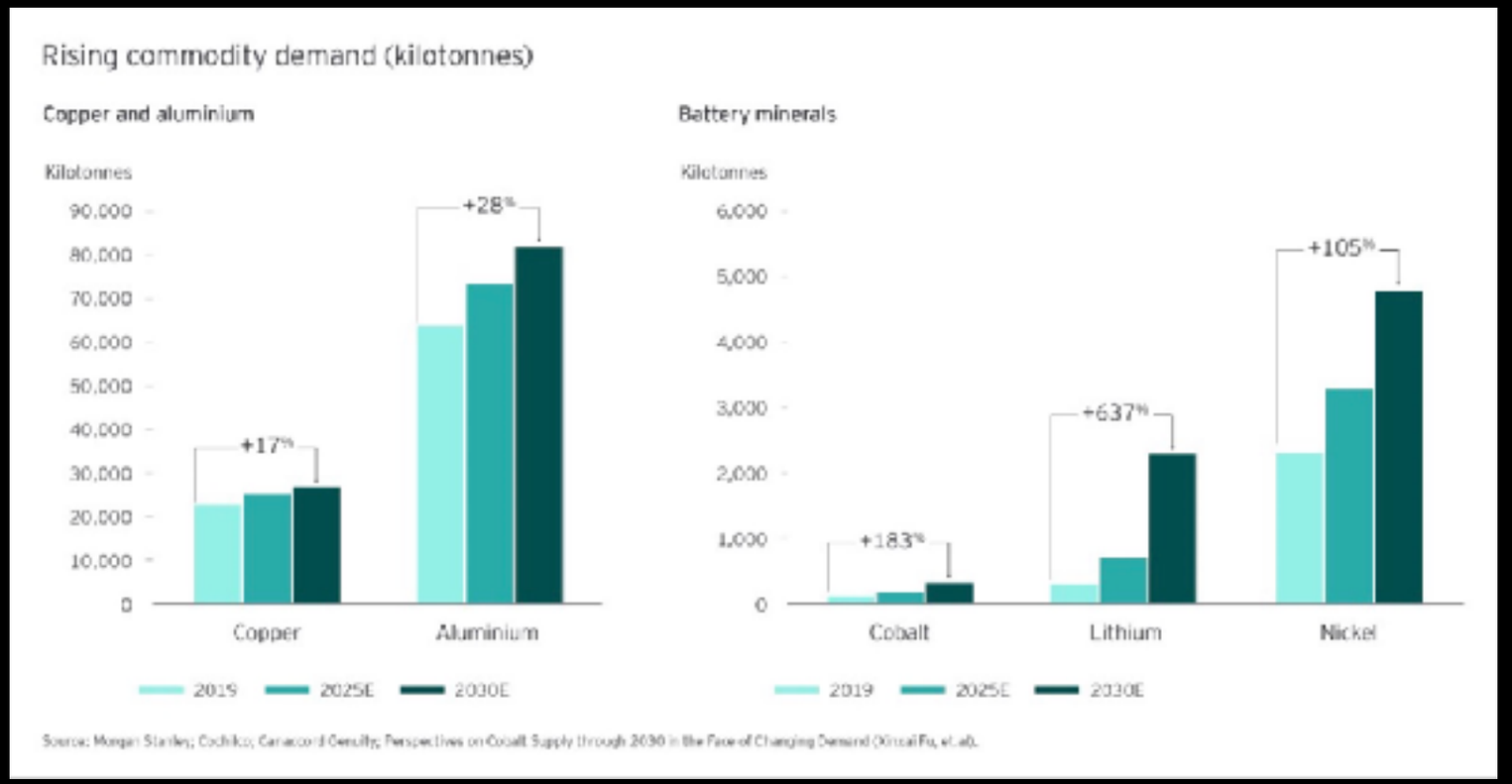
Fact: The transition to renewable energy production and the need to reduce greenhouse gas emissions is effecting the introduction of new clean coal mines, but other areas of mining are set to reap substantial benefits. The move to renewable energy sources presents opportunities for mining and the production of minerals used in the technologies associated with clean energy production.

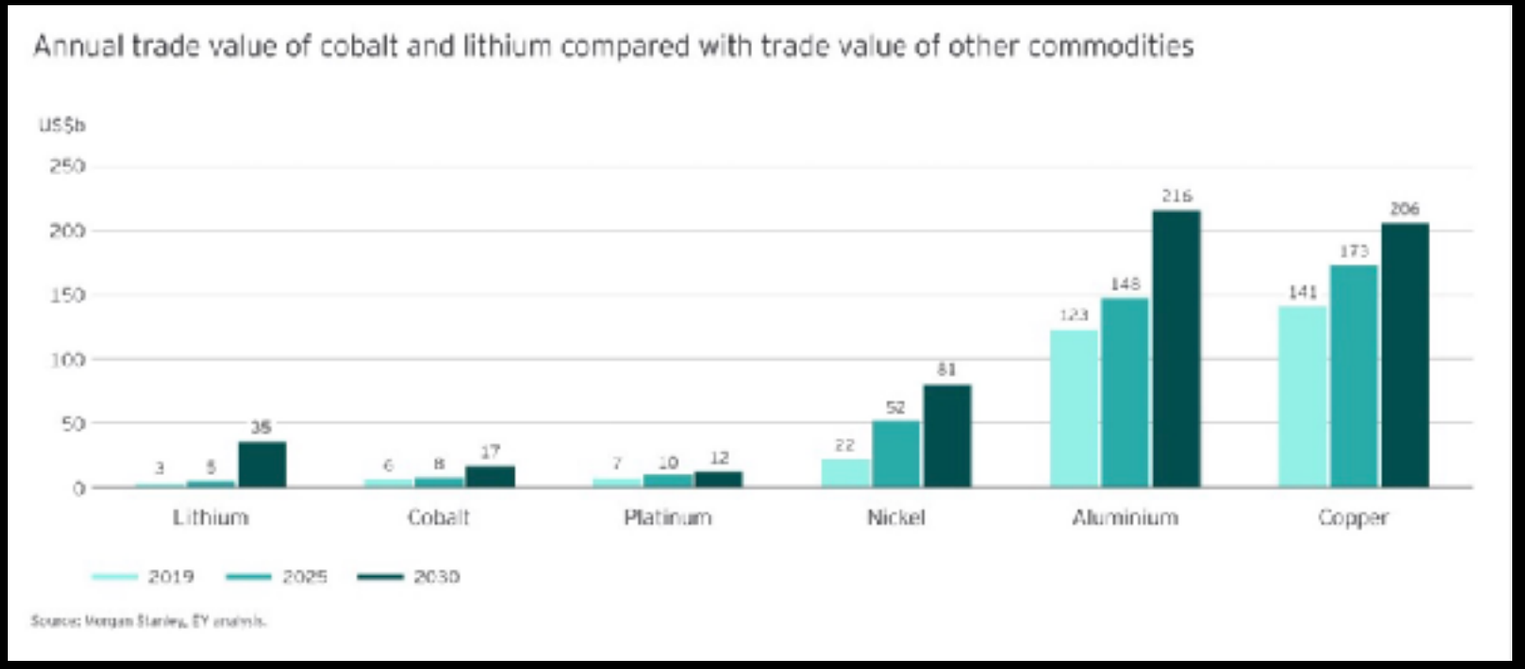
21st Conference of the Parties to the
UN 1992 Framework Convention of Climate Change
“Paris Agreement”



Over 3 billion tons of minerals and metals will be needed to deploy wind, solar and geothermal power, as well as energy storage, required for achieving a below 2°C future in accordance with Paris Agreement/COP21.







Production of minerals, such as nickel, lithium and cobalt, could increase by nearly 500% by 2050, to meet the growing demand for clean energy technologies.

Mining is a sunset industry

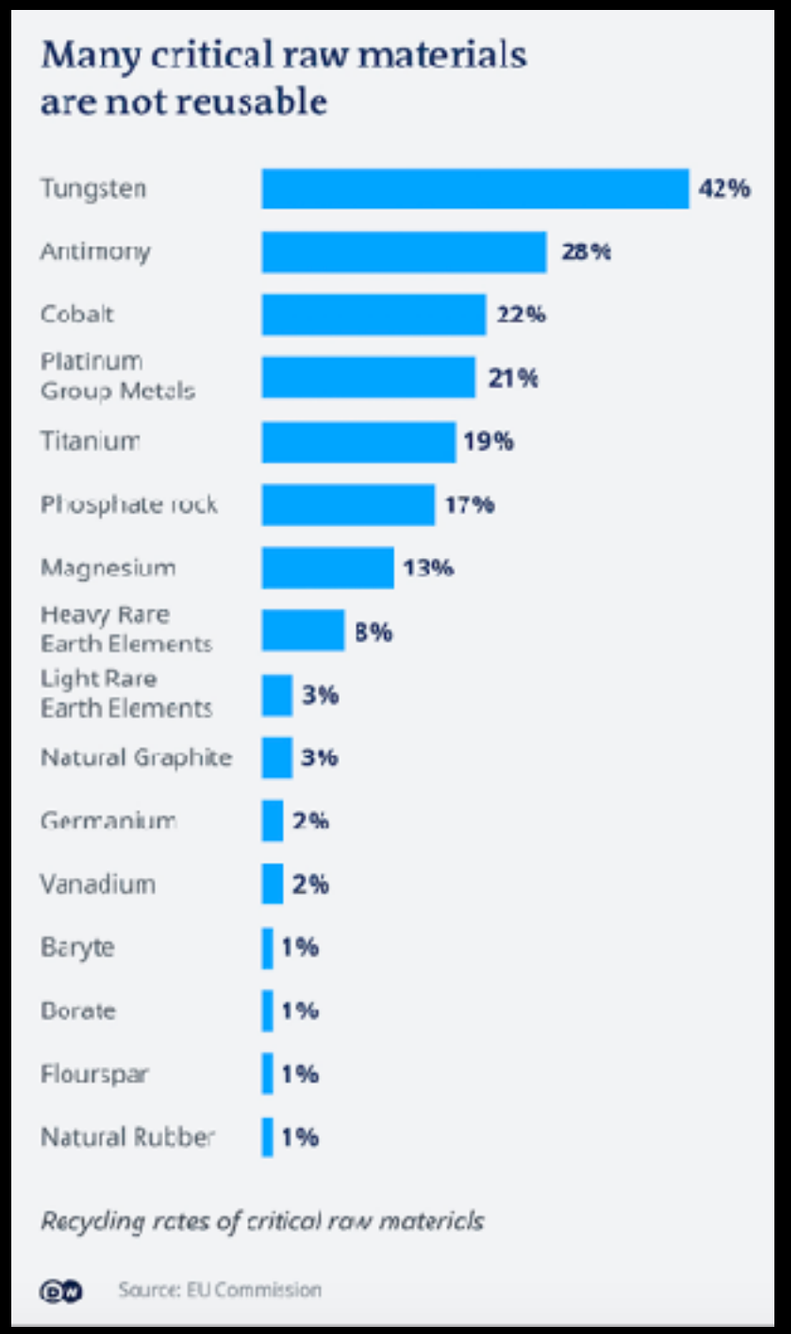
- Mining doesn't help the sustainability of the planet.

Fact: Thanks to the growth in popularity of electric vehicles (EV) and renewable energy, there is a rising demand for batteries to power EVs and/or used to store energy. These batteries are made with a significant amount of nickel, copper, lithium and cobalt. Making and storing energy in this way will reduce the reliance on and use of fossil fuels, resulting in sustainable power generation for a cleaner planet.

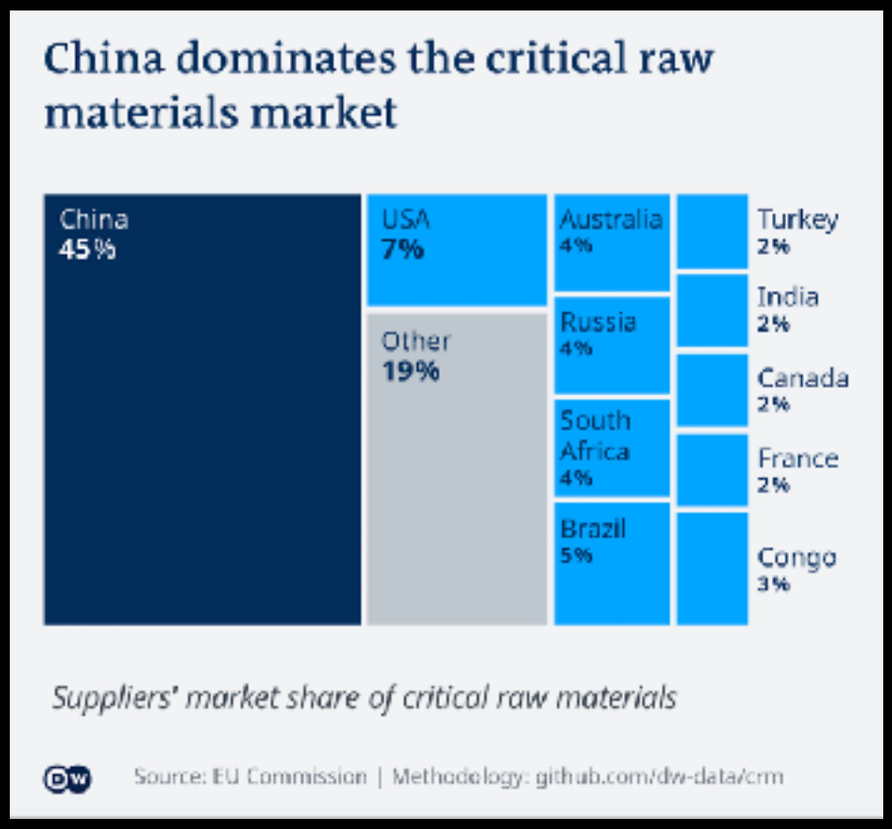
NEW ECONOMY MINERALS

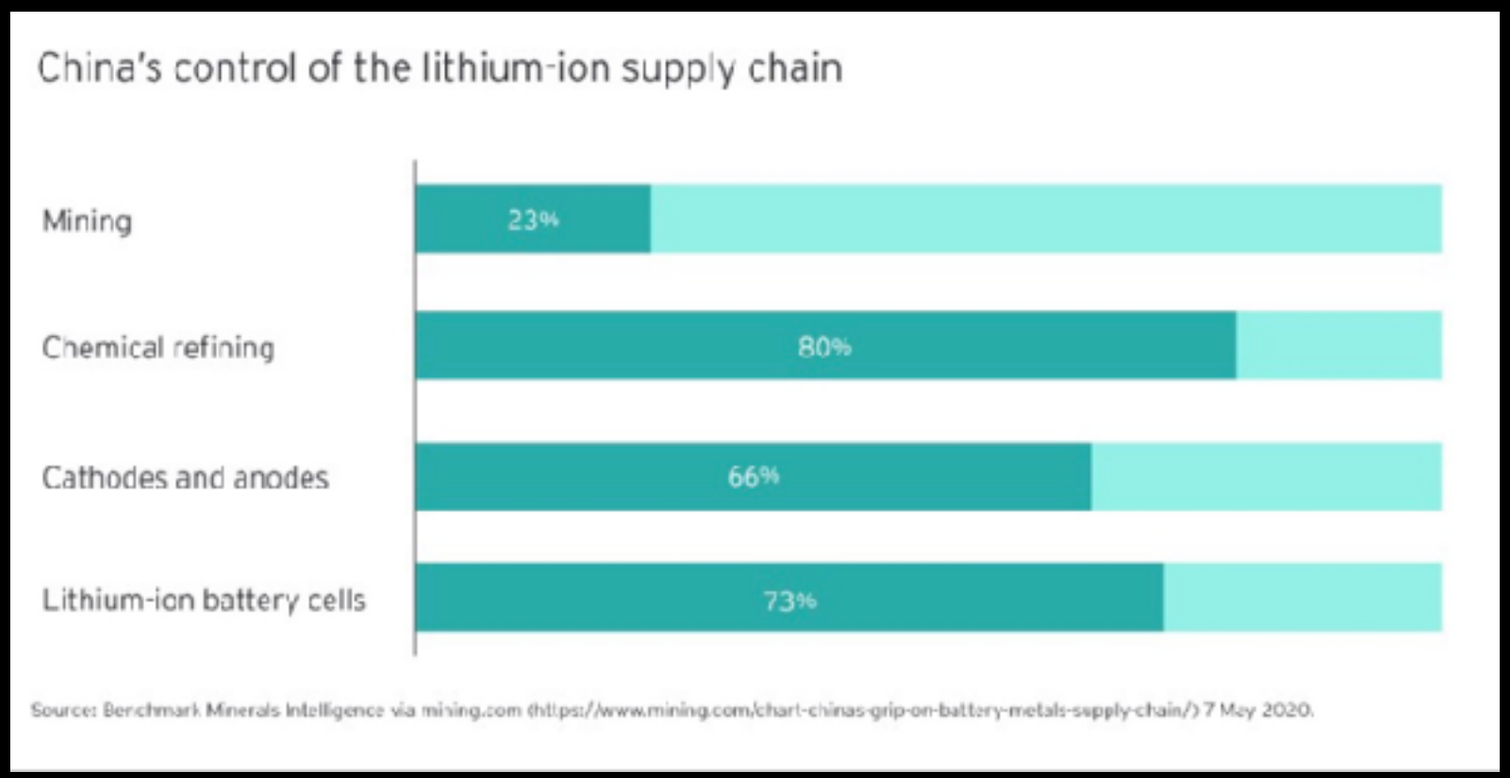
- Digital technologies have resulted in a change in commodity demand for critical minerals such as cobalt, lithium and copper. These minerals are required to manufacture energy conversion and storage equipment needed to supply the renewable energy industry.
- The rise of electric vehicles and the production of an ever-growing variety of high tech and green technologies, from batteries, smart phones and laptops to advanced defense systems have also boosted demand and competition for new world commodities.

The Need for Critical Raw Materials is Skyrocketing



China’s Mines Rule the Market of Critical Raw Materials





Mine Energy Loads and Sources

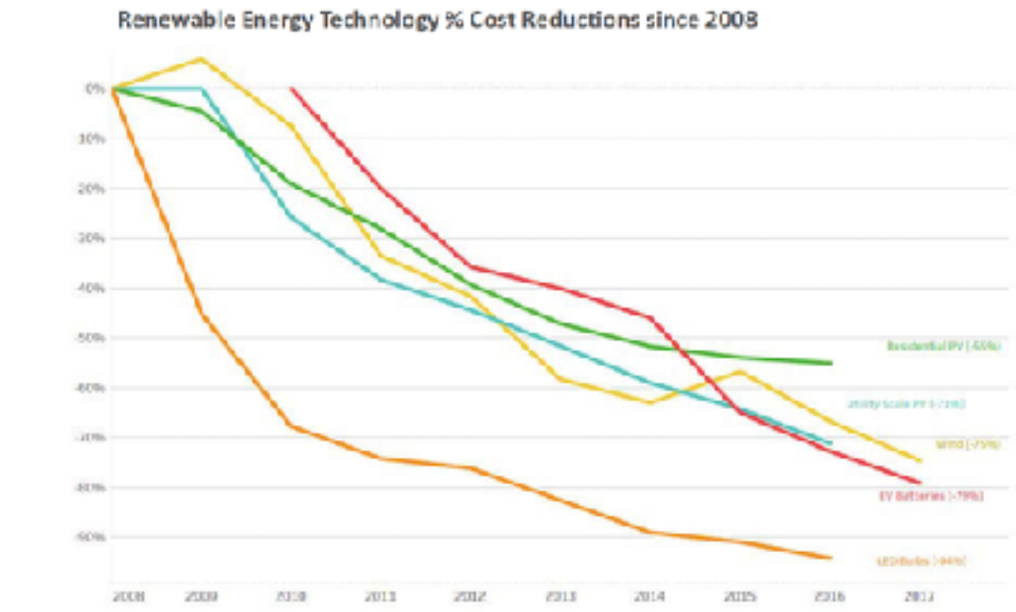
Mining process	Activities and Equipment	Fuel Source
Exploration, Extraction and Auxiliary Operations	Ventilation: HVAC	• Electricity • Natural Gas
	Drilling: Loader trucks, diamond drills, rotary drills, percussion drills, drill boom jumbos	• Electricity • Diesel • Compressed Air
	Dewatering: Pumps	• Electricity
	Digging: Hydraulic shovels, cable shovels, continuous miners, longwall mining machines, drag lines, front-end loaders	• Electricity • Diesel
	Power supply: Generators	• Fossil Fuel
Material Handling	Discrete transportation systems: Haul trucks, service trucks, bulldozers, pickup trucks, bulk trucks, load-haul dumps, shuttle cars, hoists	• Diesel • Electricity
	Continuous transportation systems: Conveyor belts, pumps, pipelines	• Electricity
Beneficiation and Processing	Comminution	• Electricity
	Crushing: Crushers	
	Grinding: Mills	
	Separations: Physical: Floating, centrifuge; and Chemical: Electrowinning	• Electricity • Fossil Fuels
	Drying, Firing, Smelting: Oven/Furnace	• Fossil Fuels
	Refining e.g. Electrolytic refining, fire refining	• Electricity • Fossil Fuels

Mining is energy-intensive starting with exploration up to processing. Most of that energy is derived from fossil fuels.

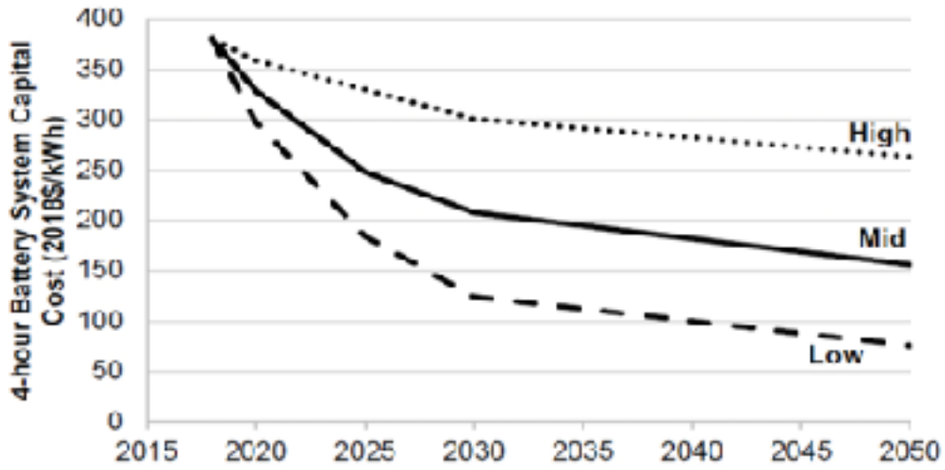
Every mine operation has different requirements, but in general and across sites, electricity comprises the largest energy demand.

Renewables is becoming a mainstream energy source.

Costs for RE Technologies are Falling



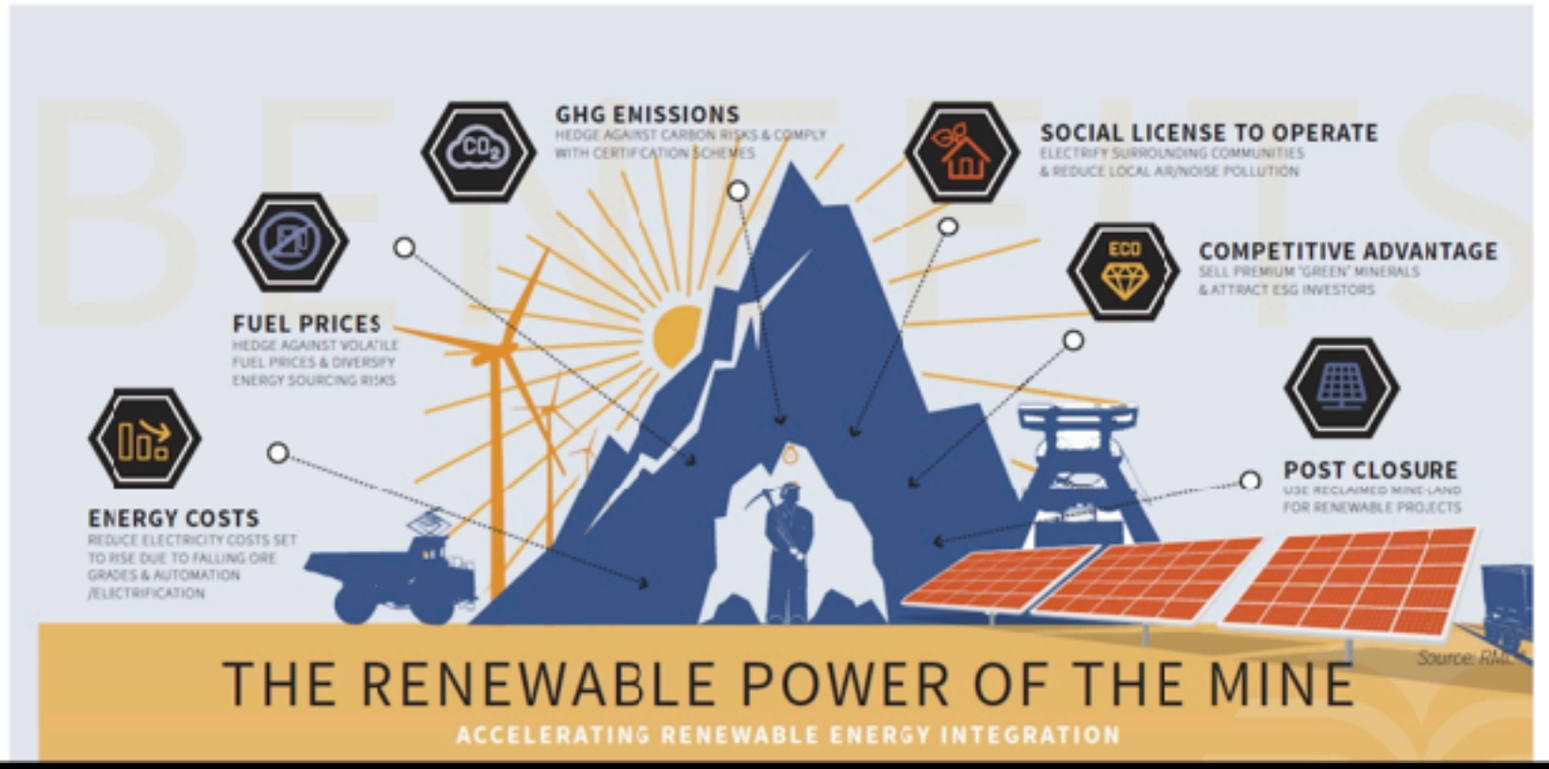
Projected Battery Storage Cost Declines



Source: NREL, 2019. *Cost Projections for Utility-Scale Battery Storage*

Cost of producing renewable energy has fallen dramatically

Drivers of Renewable Energy in Mining



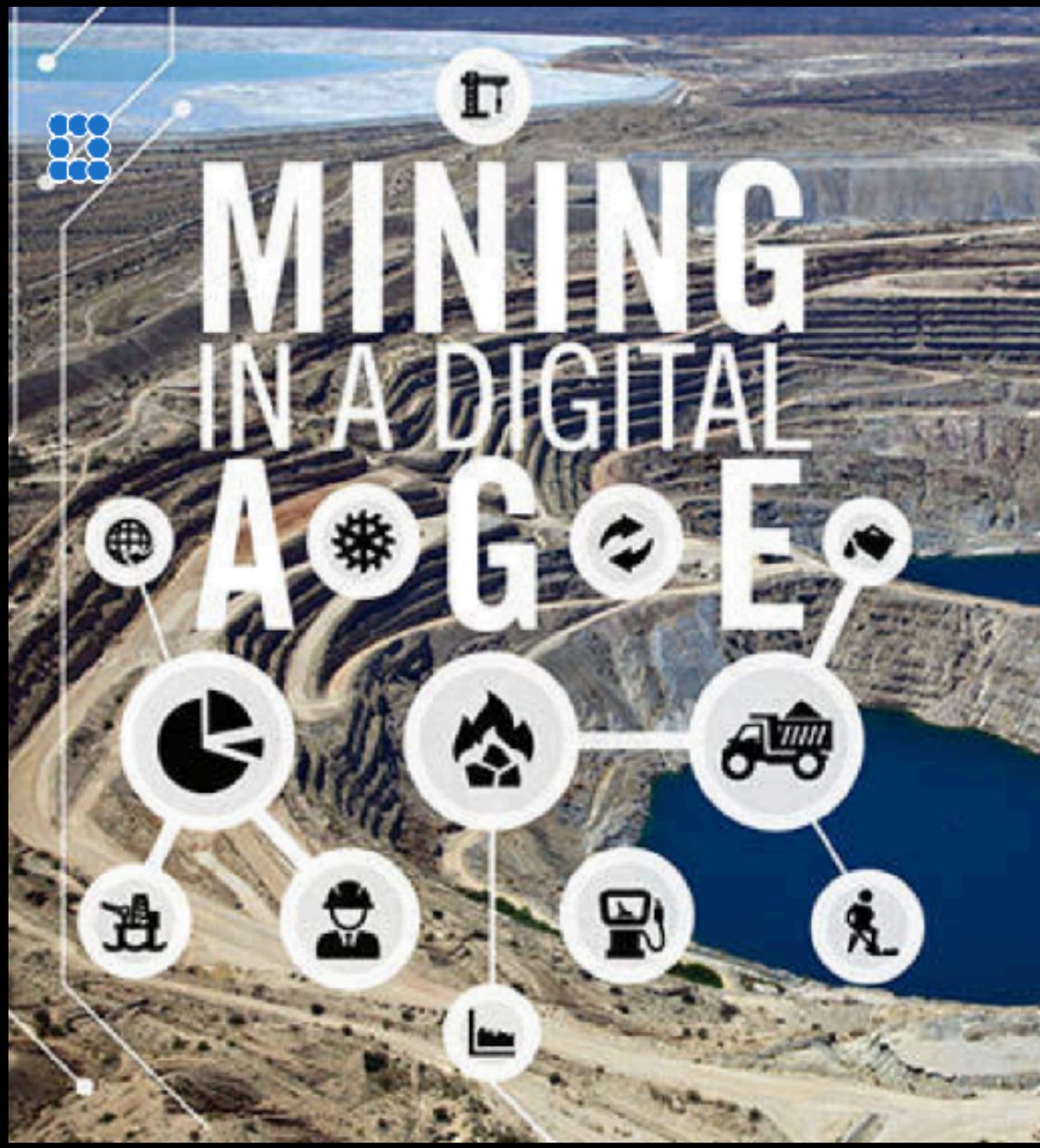
There will be no more jobs in the mining industry

- The mining boom is over; mining jobs are scarce and unstable.

Fact: Job vacancies have recently been increasing as more companies invest in exploration, develop projects and expand existing mining operations. There remains behind a lucrative and vibrant industry which continues to be productive for many years. This productivity and the use of technology that amplifies efficiencies is seeing some exciting times in the mining industry. **Mining is alive and well. There are plenty of opportunities ahead!**

NEW DIGITAL TECHNOLOGY

- **Mobile access in the mine site**. Mobile technology connectivity between workers and management facilitates communication in the mines, which is vital in ensuring a safe and productive working environment.
- **Data-driven decisions**. Mining companies are revolutionizing how they collect data in the field with the help of the Internet of Things (IoT), which are smart data solutions that help management to relay important data such as water pressure, temperature, concentration of gases and other information.
- **Cloud technology** allows management and employees to quickly access and alter essential information, wherever and whenever needed.
- **Robotics** allow more autonomous vehicles and machinery to make operations smoother resulting in better safety, greater efficiency and cheaper running costs. In engineering industries which require hard labour intensive tasks, robots will be able to take over and do things faster and more efficiently than humans ever could.



NEW MINERS

- With the advent of digital technology and rising demand for new world commodities, the business of mineral exploration, development and production will not be conducted solely by traditional mining houses and junior companies.
- Technology companies may become direct or indirect investors as a way of shoring up and securing supply. With scarce new world commodities supply like cobalt and lithium and other rare earth minerals, cash-rich technology companies will venture into mining to ensure that they can continue to produce their products.
- Using blockchain technology, new technology entrants can engage in mining without owning any mines or distribution infrastructures in the same way that Uber does with no cars and Airbnb, with no real estate listings.

There will be no more jobs in the mining industry

- Technology is replacing jobs.

Fact: Automation and remote-control operations are becoming prevalent throughout the mining industry especially in developed countries. As with any industry, changes in technology require a shift in the type of people being employed. New technologies are changing the face of mining and creating opportunities for graduates. Far from replacing jobs, the technology shift is reshaping the mining industry and requires intelligent, innovative geologists and engineers to help mining take advantages of these changes. **MORE NEW & HIGH-PAYING JOBS FOR TECHIES!**

NEW WORKFORCE

- While automation and data analytics technologies may increase efficiency, these will require a workforce that is skilled in data science, analytics, predictive modeling and mechatronics.
- Current workforce will also need retraining as knowledge resources and will be required to possess a new set of skills needed to operate new machinery and technology, or work along-side and support automated systems.
- Universities and data science companies that develop innovations could gain an edge in exploration.
- Mining companies will employ more PhD-level data scientists with geology and mining engineering background.

ROLE OF GEOSCIENCE IN RENEWABLES

- Decarbonization will involve geoscience at every level from straightforward low carbon generation (e.g. geothermal), to energy storage to counteract renewables intermittency (e.g. compressed air energy storage, heat storage), to emissions abatement of fossil fuel generation and industry (e.g. carbon capture and storage).
- Siting of renewable energy projects from hydro electric power or storage to wind farms, both onshore and offshore, is based fundamentally on conditions created by geology.
- New resources required to manufacture the energy conversion equipment needed to supply renewable energy on a global scale will place new demands for resources which already is beginning to constrain and shape the commercial solutions.

Mining industry is an exclusive employer

- Mining is just for geologists and engineering types.

Fact: Mining is a business like any other. It needs everything from accountants, lawyers, administration staff, contract officers, payroll, human resources, safety, health and wellness roles to roles in information technology, robotics and automation, data processing, analytics, financial modeling, corporate communications and many other areas! Technology, innovation, and above all great people, are the backbone of the industry.
THERE ARE JOBS IN MINING FOR NON-TECHNICAL PEOPLE!

Mining industry is an exclusive employer

- Only men succeed in mining.

Fact: While the mining industry still has a long way to go to achieve full gender equity, encouraging progress has been made. In some mines, a good percentage of the workforce is female and some are in senior or management positions. The industry actively supports improvements to the industry's gender ratio by finding innovative ways to attract and retain more females into mining e.g. offering paid parental leave, options to work flexibly and a focus on learning and development to maximize opportunity. **MINING INDUSTRY DOES NOT DISCRIMINATE!**

CONTENTS

Conclusion

"The future belongs to knowledge-based societies."

- Mining industry will continue to remain relevant in this era of digitization and sustainability.
- **Demand for new world commodities** is going to increase as they become central to the production of an ever-growing variety of high tech and green technologies.
- **Ethical Sourcing of Minerals**
- In the age of digital technology and renewables, **tech companies will invest in if not dominate the resources industry**.
- Redesigned traditional occupations in **geoscience and mining engineering will continue to have a role** to play in the age of digital technology and renewables.
- Can the Philippine mining industry adapt to the "new world economy"?