



# MONITORING MATERIALS AND INVENTORY

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# Presentation

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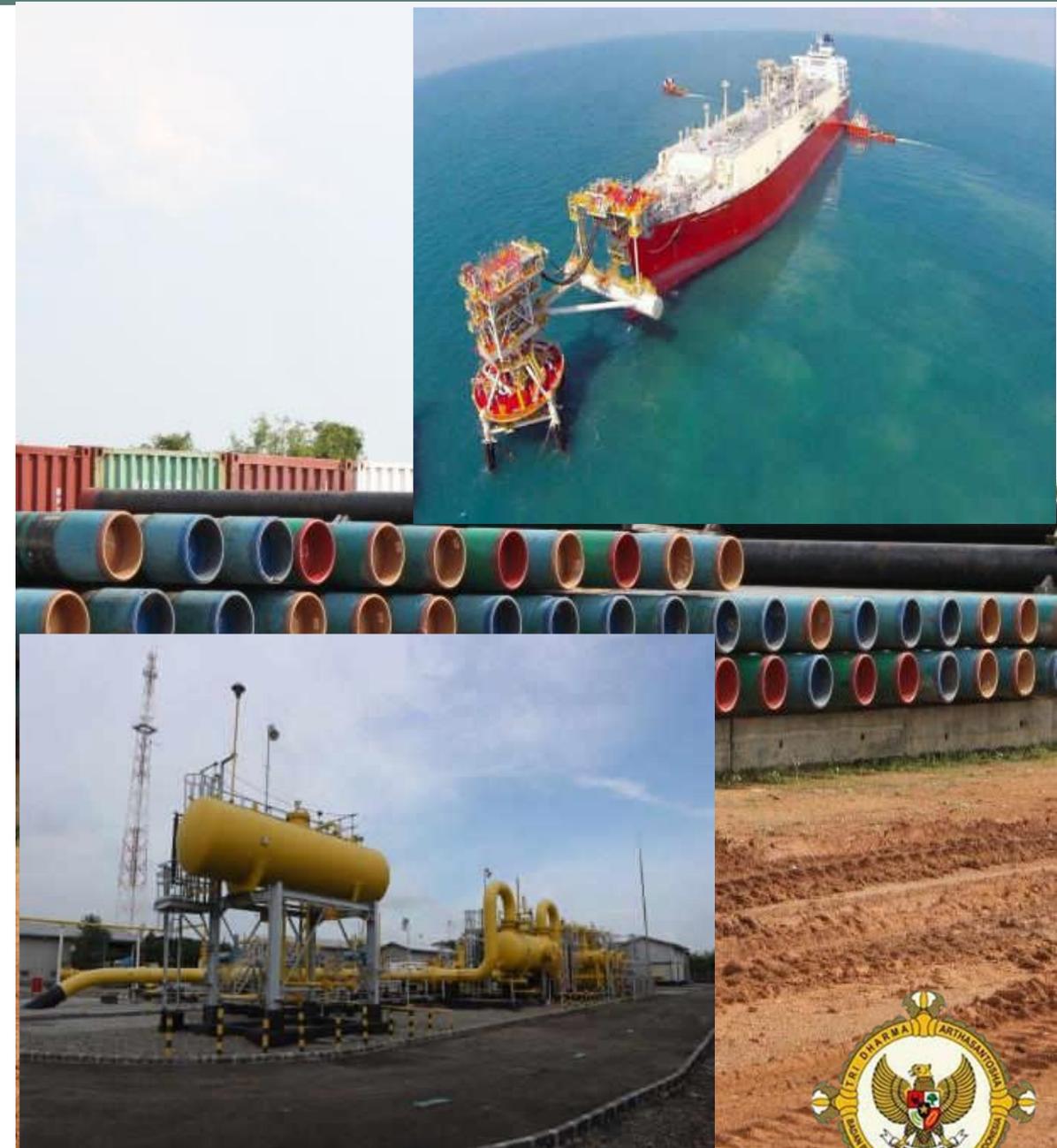
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**DISCUSSION**



# 1. BACKGROUND

- ❑ Extractive industries can generate sustainable development
  
- ❑ Fiscal Regime Extractive Industries
  - Contractual
  - Concession
  
- ❑ Natural Resource Accounting
  - Historical perspective of Resource Accounting
  - The UN officially adopts System for Integrated Economic and Environmental Accounting (SEEA)



# MINERALS AND INVENTORY

Mineral reserves and resources are the most significant source of value for mining entities

Resource and reserve definitions are normally established by professional bodies of engineers and geologists

Deposits of minerals are often located deep beneath the earth's surface and are often irregular in shape, making them difficult to measure

Estimating them is therefore a matter of considerable technical difficulty and uncertainty

Inventories of mine product include:

- run-of-mine ore;
- work in progress (crushed ore, ore in-circuit)
- finished goods (concentrate, metal)

Usually measured at cost, where cost does not exceed net realisable value

Measurement challenges

The cost of inventory consists of:

- all costs of purchase;
- costs of conversion; and
- other costs incurred in bringing the inventories to their present location and condition.

## 2. CASE AND CHALLENGE

1989 Repeto (WRI)' wasting Assets was A milestone in NRA, especially in Indonesia

Inconsistency of policy implementation: licensing issues and overlapping land



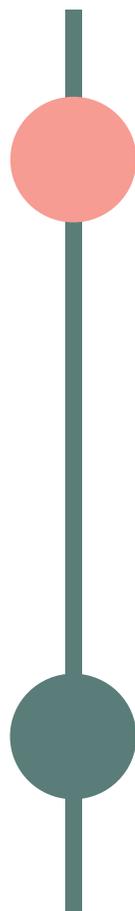
Churchill case, 2006



Masela Block, 2010/2016



Overlaps license



- Transforming natural wealth into assets that can support sustainable development
- The absence of government accounting standards
- Ensure stability and credibility of policy implementation
- Allocating fund and implementing financial balance between the central and regional governments



### 3. RELATED PARTIES

Ministry of Energy and Mineral Resources

Ministry of Finance

Ministry of Environment and Forestry

Coordinating Ministry for Maritime Affairs and Investment

Coordinating Ministry for Economic Affairs

Oil and Gas Downstream Regulatory Agency

Special Taskforce for Upstream Oil and Gas Business Activities

Extractive Sector Enterprises

BPS - Statistics Indonesia

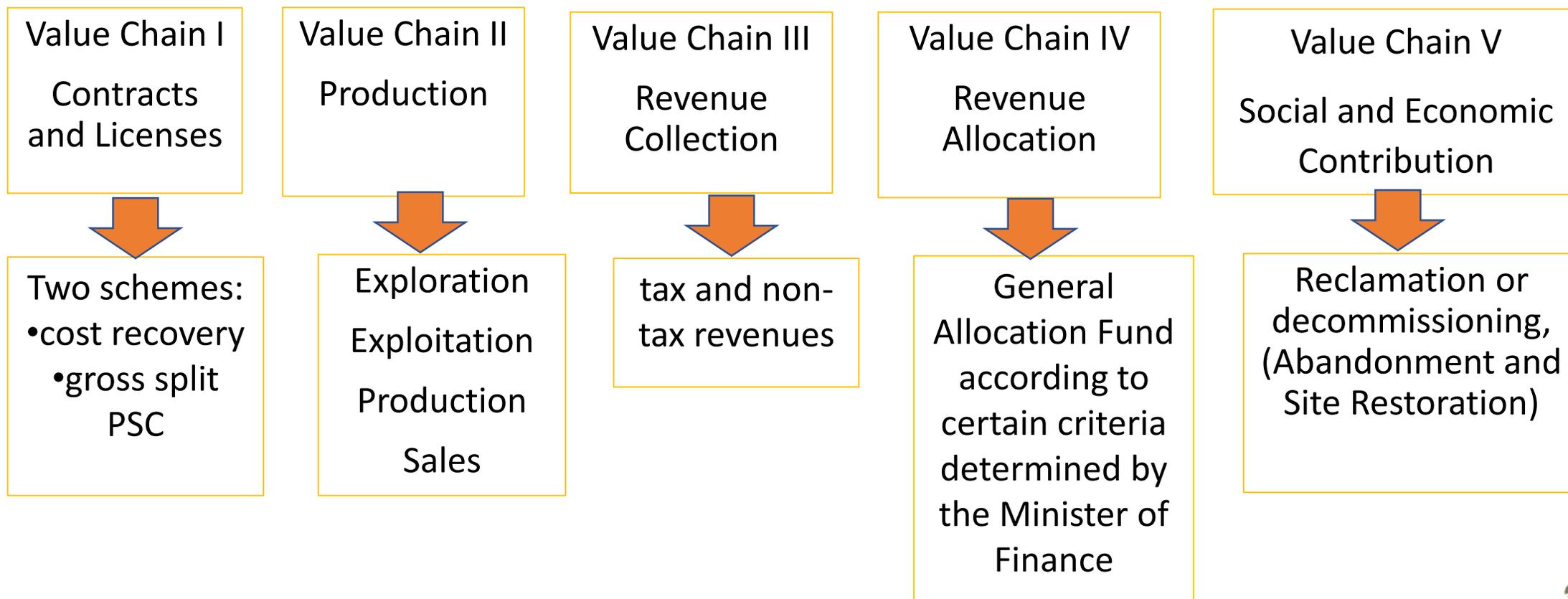
Auditors and other (Internal and eksternal auditor, Corruption Eradication Commission)

Provincial Government

Local Government



## EXTRACTIVE INDUSTRIES REGULATIONS BASED ON VALUE CHAIN



## 4. WHAT GOVERNMENT DID

### ISSUE NEW REGULATIONS

- Provides flexibility in the fiscal system by giving contractors the freedom to choose between gross split and cost recovery PSCs: Reg of Minister of EMR 12/2020
- Changes in mining business license: Law 3/2020
- Government Regulation 46/2017: environmental economic instruments, Includes mineral and energy asset accounts

### PROVIDES SEVERAL APPLICATIONS AND REPORTS TO SUPPORT TRANSPARENCY

**SISNERLING**  
(Integrated System of Environmental-Economic Accounts of Indonesia)

**MOMI**  
(Minerba One Map Indonesia)

**MODI**  
(Minerba One Data Indonesia)  
➤ Dashboard MODI

**SIMBARA**  
(Inter-Ministry/Agency Mineral and Coal Information System)

**EITI Extractive Industries Transparency Initiative report**





- MODI showcases “summary data” of mineral and coal mining activities
- The data is updated regularly
- Companies and regional governments can access and update data independently





The EITI (Extractive Industries Transparency Initiative) Internasional Standard Covers

## 5. WHAT ENTERPRISE DID

Review on one of extractive sector SOE: nickel and bauxite inventory

### STOCK MANAGEMENT

- SOP: Mining operation, Stock opname, Export arrangement (ore), Finishing product, Purification Process.
- WI: excavator boulder and bucket load calibration, Mining rites logging, Mine progress measurement, Stock measurement, Mining recovery calculation, Preparation and monitoring of Nickel Ore for nickel ore export, Preparation and delivery of Nickel Ore for Feni mill feed.

### LEAKAGE PREVENTION

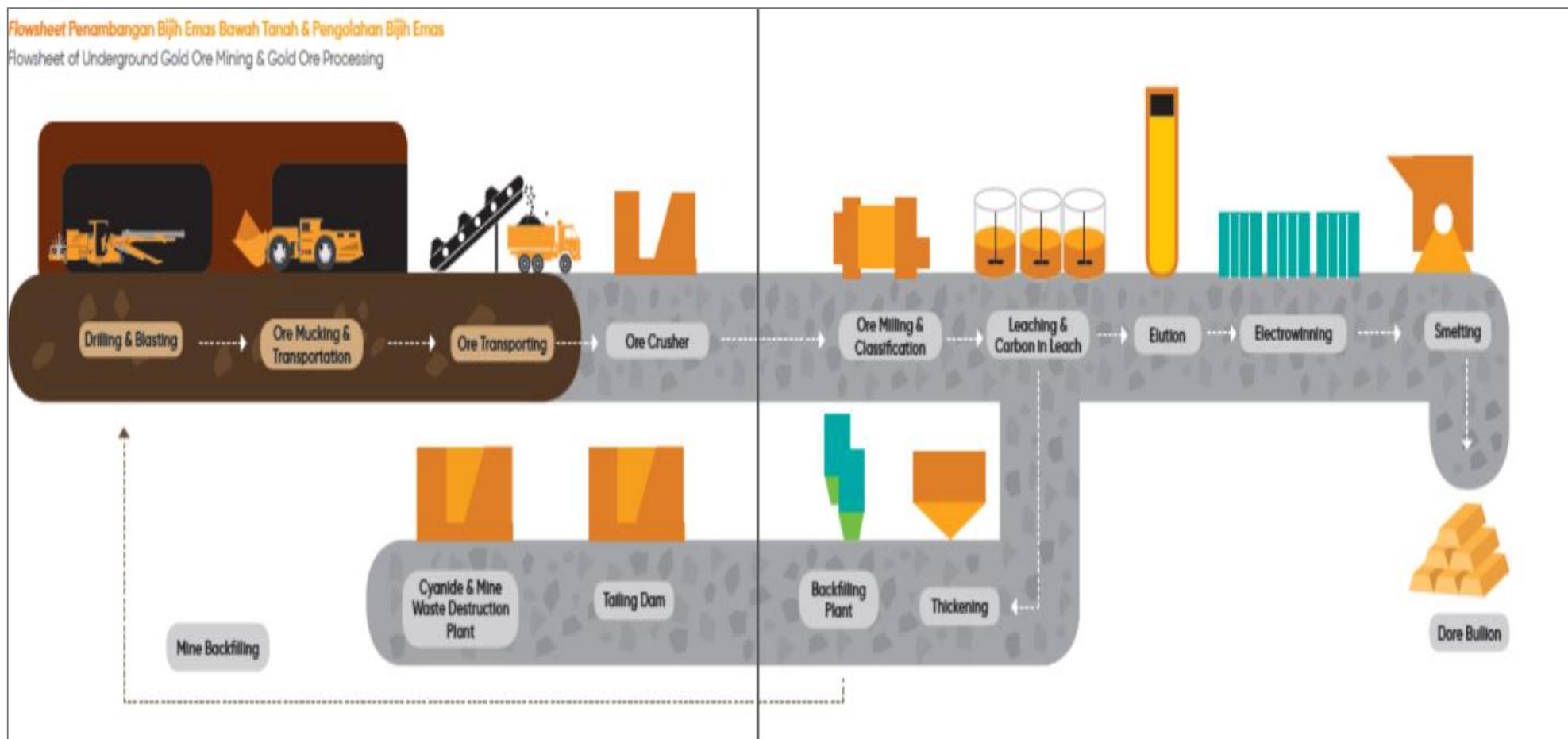
- Calibration of excavator boulder and bouquet loads, Mining rites logging, Mine progress measurement, Stock measurement, Mining recovery calculation, SOP Mining Operation, Ore Stock opname

### INTERNAL CONTROL DESIGN

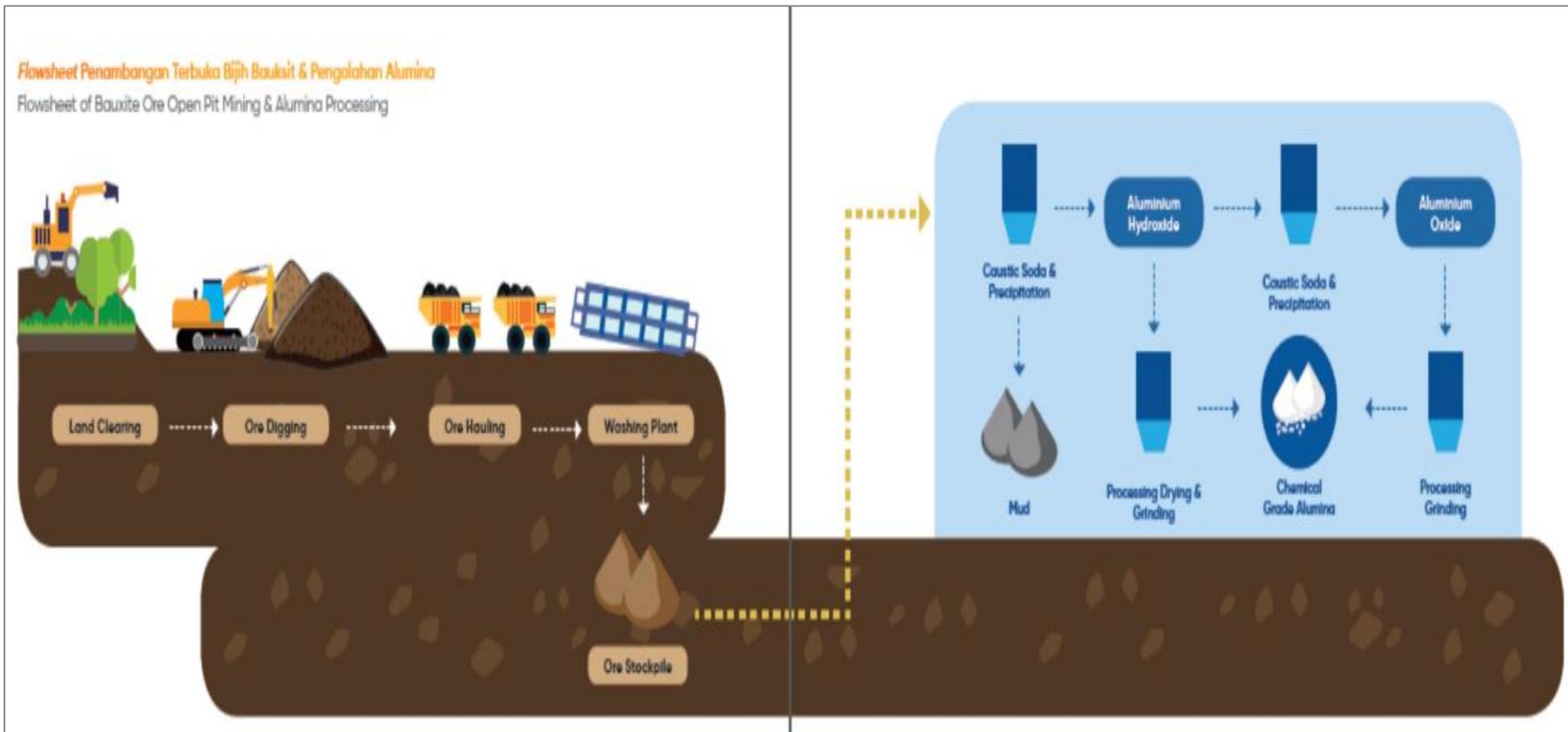
- Arrangement of mineral piles/Quarry pile arrangement, Preparation and monitoring of Nickel Ore for nickel ore export, Factory stock yard stock maintenance

### INTERNAL AUDIT

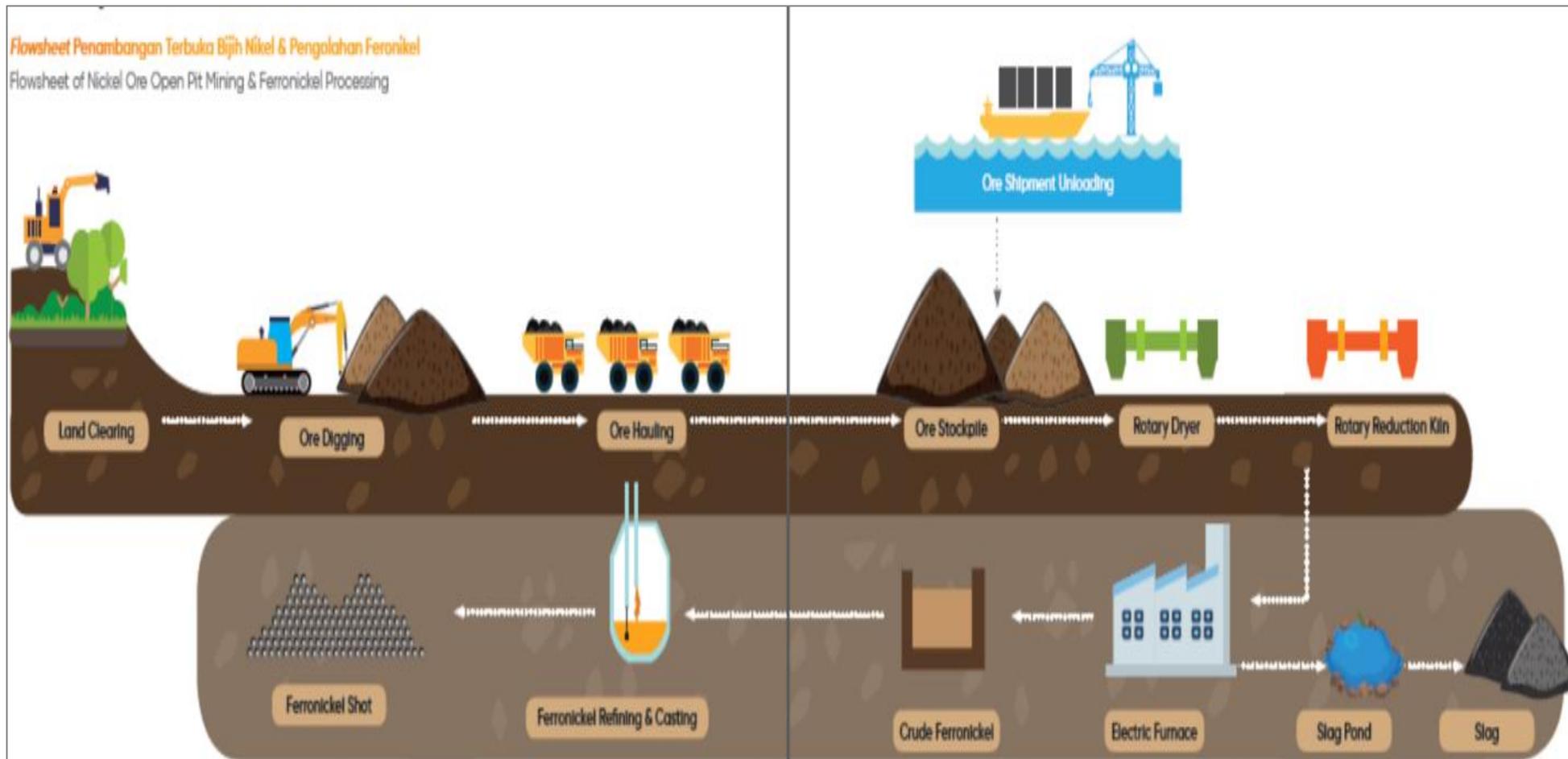
## Examples Mineral Sector SOEs' Activity



Flowsheet of Underground Gold Ore Mining & Gold Ore Processing



**Flowsheet of Bauxite Ore Open Pit Mining & Alumina Processing**



**Flowsheet of Nickel Ore Open Pit Mining & Ferronickel Processing**

# Examples of Inventory Reported by SOE

## SOE 1 Product inventories

- Gold and silver
- Alumina
- Nickel Ore
- Feronickel
- Bauxite Ore
- Other precious metals
- Coal
- Raw materials
- Spare parts and supplies
- Work-in-process



## SOE 2

### Tin

- Work in Process
- Finished Goods (Tin Metal)
- Raw Material (Tin Ore)
- Finished Goods (Tin Solder)

### Tin Chemical

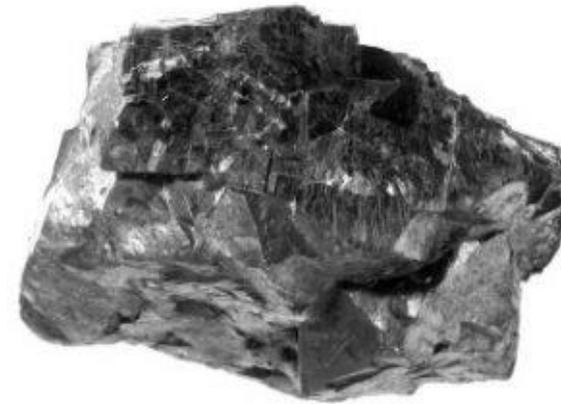
### Coal

### Nickel

### Goods in Transit

### Warehouse Inventories

### Provision for impairment of inventories



# Cost of carrying out inventories

- all costs of purchase/production;
- costs of conversion; and
- other costs incurred in bringing the inventories to their present location and condition

Costs of conversion include costs that directly relate to production and an allocation of fixed and variable production overheads.

## Examples of typical contractual terms of trade include

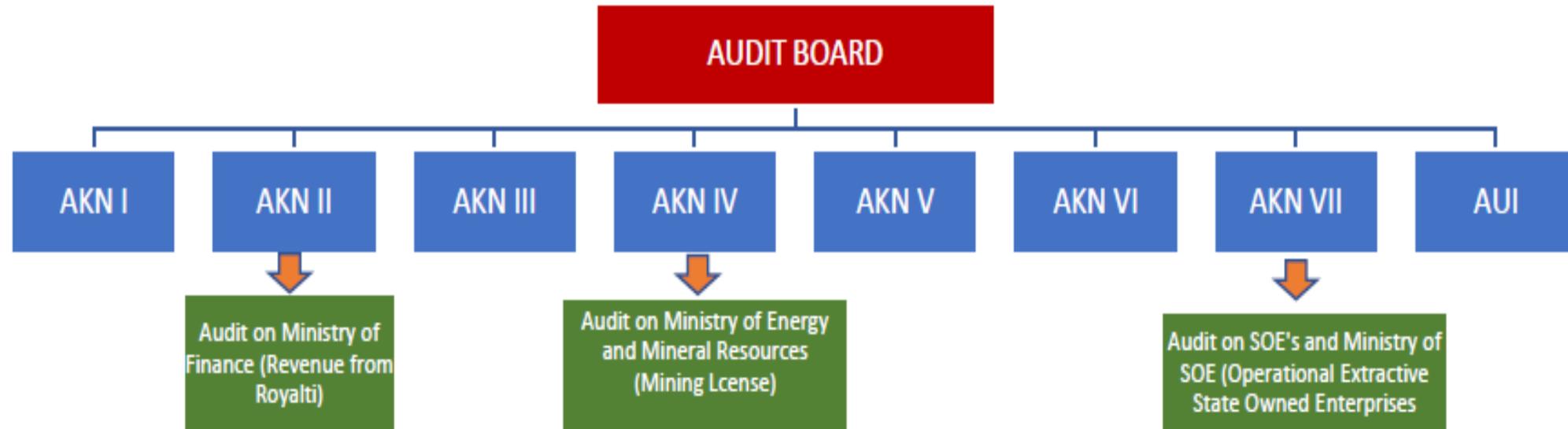
- Free On Board (“FOB”) contracts stipulate that the purchaser assumes the risk of loss, and therefore the insurance risk, upon delivery of the product to an independent carrier
- Cost Insurance Freight (“CIF”) arrangements the producer retains risk of loss until the product has been delivered to a specific location and title passes



The following table highlights some of the key costs incurred in the production of inventory:

Description of costs	Include in inventory	Do not include in inventory
Production materials and services (such as explosives, fuel, power, consumables, catalysts and production drilling costs)	■	
Direct labour costs, including related payroll additives (such as pensions)	■	
Mining contractors	■	
Normal amounts of materials wastage	■	
Costs of transporting materials to different locations	■	
Supervisor salaries and related payroll additives	■	
Other indirect labour at the mine site and related processing facilities, including related payroll additives	■	
Indirect materials	■	
Maintenance costs associated with running the mine and related processing facilities	■	
Depreciation of mine property acquisition costs and capitalised development costs (including any amounts transferred from exploration and evaluation expenditure)	■	
Depreciation of mining and production equipment and related facilities	■	
Directly attributable waste removal costs (except to the extent that they are capitalised to deferred stripping)	■	
Amounts transferred from deferred stripping as the stripping asset is depreciated	■	
Storage and handling costs for raw materials, components, other supplies and work in progress that are not a necessary stage of the production process		■
Product research to develop new uses for copper		■
Around mine exploration (except to the extent that exploration costs are capitalised)		■
Royalties (if based on sales not production)		■
Abnormal amounts of wasted materials or labour or other abnormal inefficiencies (such as strike action)		■
Selling costs		■
Distribution costs		■
Storage costs of finished product, including insurance		■
General management and administration costs		■

## 6. WHAT SAI DID



### AUDIT BRANCH AT SAI INDONESIA (BPK)

## AKN II

### INTOSAI MANDATE:

#### INTOSAI-P 12 concerning the Values and Benefits – making a difference to the lives of citizens

- audit institutions have a role to strengthen accountability, transparency, and integrity of the Government and public sector entities.
- is relevant to the SDGs set by the UN with one of the goals being to develop effective, accountable, and transparent institutions at every level.

### THE REVIEW ON THE IMPLEMENTATION OF FISCAL TRANSPARENCY

- carried out in conjunction with the examination of the Central Government Financial Reports
- includes four main pillars: (1) Fiscal Reporting, (2) Fiscal Forecasting and Budgeting, (3) Fiscal Risk Analysis and Management, and (4) Resource Revenue Management
- to improve the quality of the results, will conduct a review of the Central Government Performance Report (LKjPP) and the Natural Resources Balance prepared by the Government (2022)

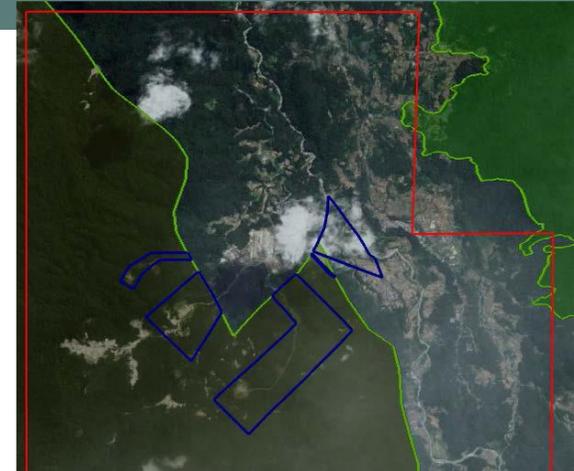


# RESULT

Resource Rights Legal Framework	<i>Basic</i>
Resource Rights Allocation	<i>Good</i>
Disclosure of Ownership of Source Rights	<i>Basic</i>
Fiscal Regime for Natural Resources	<i>Advanced</i>
Resource Revenue Administration	<i>Basic</i>
Estimated Resource Revenue	<i>Basic</i>
Budget Integration Source Revenue	<i>Basic</i>
Natural Resources Fund	<i>N/A</i>
Source Revenue Reporting and Audit	<i>Basic</i>
Reporting by Resource Company	<i>Not Met</i>
SOE Resources	<i>Good</i>
Operational, Social and Environmental Reporting	<i>Basic</i>

## AKN IV

### Audit with a Specific Purpose on the Management of Non-Tax State Revenue of Natural Resources and Minerals and Coal Licensing



- Ministry of Energy and Mineral Resources, Ministry of Environment and Forestry, Related Agencies in DKI Jakarta Province, South Kalimantan, And North Sulawesi
- Utilization of Geographic Information System
- Key findings:
  - There are companies not complied with the provisions on the use of forest areas
  - Disturbed area in forest not yet supported by Borrow-to-use Forest Area Permit
  - Electronic System for Non-Tax State Revenue Hasn't Functioned Sufficiently
  - Not have permits in the mining business area
  - Underpayment of Royalties and Fines



## AKN VII

# Audit with a Specific Purpose (Compliance)

- **Extractive (Mineral and Coal) Sector SOEs :**  
coal, nickel, bauxite, tin, gold, silver  
Audit on revenue, expenditure, and investment
- **Extractive (Oil and Gas) Sector SOEs :**  
Audit on revenue, expenditure, and investment  
Fuel Subsidy
- **Oil and Gas Contractors (KKKS)**  
Audit on project implementation and supply chain  
Audit on cost recovery



## Problem need attention

- Government has not received an additional share of the state for the excess cost recovery charges
- Weaknesses in inventory management or finished goods/warehouse goods (excess stock, unsold goods, inappropriate stock taking, inventory purchases not paying attention to stock availability, safety stock and insurance parts have not been determined)  
Lead to inefficiency on operating expenses (such as storage, maintenance)
- Miscalculated transportation distance (FOB) increases selling costs
- Losses during the refining process



## WHAT NEXT

- Conducting comprehensive audit related
- Things that are Continually Done/developed
  - Regulatory Improvements
  - Increase synergy and collaboration
  - Facilitate access to digitizing data/services
    - ✓ SIMBARA (Mineral and Coal Information System Inter Ministries/Institutions),
    - ✓ SOT (Integrated Online System) Oil and Gas,
    - ✓ SIT (Integrated Information System) Oil and Gas



# THANK YOU



# GET IN TOUCH



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**LET'S HAVE A BREAK**

