



# Collaborative Geological-Engineering Integration for Unconventional Reservoir Development

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# “A Case Study of Capital Expenditure Delivery by Utilizing Local Content Requirement (LCR) in the Energy State-Owned Enterprise (SOE) in Indonesia”



**Wiwit Agustina W**  
Local Content Utilization Management





## Downstream Local Content theme in the Unconventional Reservoir Development forum ?



- ✓ The Unconventional Oil Production is part of Indonesia's plan to **diversify its energy sources**, and it can quickly respond to price changes, which helps manage fuel supply.
- ✓ Therefore, distribution infrastructure of downstream oil and gas sectors must be **flexible and scalable** to handle fluctuating supply and demand.
- ✓ The upstream forum would significantly enhance by the inclusion of downstream perspectives, enabling a more **integrated and strategic dialogue** across the entire energy **value chain**.



Domestic Area of Operation and Distribution



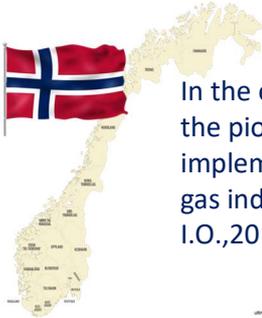
Indonesia spans over 5,000 km east to west and 1,700 km north to south, with a population exceeding 285 million. Therefore, it is **challenging** for securing a stable and sustainable **energy supply** to meet escalating domestic demand.

- The realization of imported crude oil intake in 2024 reached 122.3 million barrels.
- The realization of Fuel imports in 2024 was 182.1 million barrels,
- Liquefied Petroleum Gas (LPG) import realization in 2024 reached 6.9 million Metric Tons (MT)
- Indonesia **relies on imports** to meet, on average, **over 35%** of its national fuel **demands**.

"LCRs aim to **maximize domestic value** addition and **address trade imbalances** by promoting a more equitable exchange of goods and services, ensuring that domestic economies benefit more substantially from international trade and investment.



## THE LOCAL CONTENT REQUIREMENT (LCR)



In the early 1970s, Norway was the pioneer of **LCR** implementation in the oil and gas industry (Semykina, I.O.,2015).

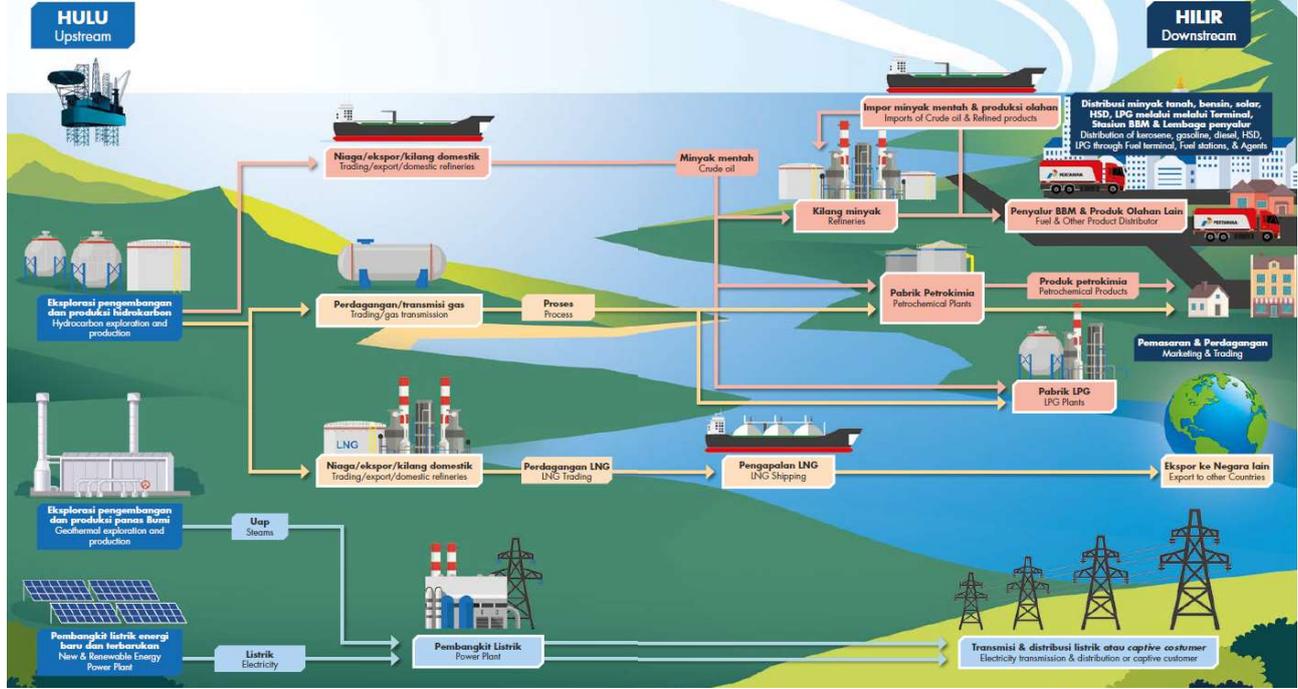
- The Local Content Requirement (**LCR**) is protection mechanism for local manufacturers and employment is governed by some countries.
- Indonesia's LCR are commonly known as Domestic Component Level (TKDN), referring to the proportion of domestically sourced components



- The oil and gas sector in Indonesia, LCR was formally introduced for **upstream operations** in **2013**; then extended to **downstream activities** in **2020** (Ing & Zhang, 2023). The “Indonesia's LCR,” is governed by President Regulation as policy for procurement and investment in the government institutions and state-owned enterprises (SOE).
- Like other countries, **Indonesia's LCR** goal is to empower local manufacturers, minimize reliance on imported goods, employment, and create multiplier effects for economic development.
- Still, some studies found that **LCR set up an insignificant** impact on economic growth (Esteves, Coyne, & Moreno, 2013)

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# THE LOCAL CONTENT MECHANISM FROM UPSTREAM TO DOWNSTREAM



Source:  
Pertamina  
Annual Report  
2024



# The SOE & The Regulator of Indonesia's LCR



Ministry of Energy and Mineral Resources (MEMR) of the Republic of Indonesia (ESDM)

- MEMR Regulation No.15 of 2013



The Energy State-Owned Enterprise (SOE)



The Ministry of Industry  
The Republic of Indonesia



P3DN

- Presidential Regulation No. 46 of 2025 (**Perpres 46 of 2025**)
- Minister of Industry (MOI) Regulation No 35 of 2025 (**MOI No. 35 of 2025**)



## THE CASE STUDY

Utilizing Indonesia's LCR as project management strategy in the energy state-owned enterprise (SOE)

### The LCR Business Process



The aim of this study is to point out:

1. How does "Indonesia's LCR-TKDN" policy became **one of the key factors** to support **project delivery success**
2. **The commodity roadmap** at the planning stage **improve** the flexibility and feasibility of the LCR commitment level.

#### PLANNING

01

The planning stage involves identifying the local content (TKDN) components within the scope of goods and services required for the project

#### PROCUREMENT

02

Procurement is an essential stage for selecting partners committed to fulfilling local content requirements in goods and services

#### MONITORING

03

Monitoring phase is intended to uphold the commitment to local content compliance throughout the duration of project implementation.

#### VERIFICATION

04

Contract verification is a key step in evaluating the fulfillment of local content commitments in goods and services



## HOW DOES IT WORKS?



How does The LCR conformity could help the Capex performance?



The **CEO** key performance index (KPI):

- ✓ Capital Expenditure (capex) – Investment **Realization** Performance
- ✓ **The LCR commitment** conformity



- ✓ **Strong investment realization** ensures that infrastructure projects have the resources needed at the right time, directly supporting timely delivery and quality outcomes.
- ✓ **Monitoring** Capex performance helps identify bottlenecks early, allowing corrective actions to keep projects on track.
- ✓ **Integration of LCR targets** into Capex planning strengthens compliance and supports national/local development goals.

Domestic products are **goods and services**, including design and engineering, which are produced or worked on by companies that invest and produce in Indonesia, using all **or part of the workforce of Indonesian citizens**, and the process uses raw materials or components that are wholly or partly sourced domestically (MOI No.35 of 2025)

Utilizing Indonesia's LCR as project management strategy in the Energy SOE



## PROJECT MANAGEMENT STRATEGIES



**Timely execution** of downstream infrastructure projects is **critical** to ensuring operational efficiency, cost-effectiveness, and market competitiveness in the oil and gas sector.

The following strategic approaches are recommended for effective project management:

- 1) Integrated Project Planning
- 2) Critical Path Method
- 3) Robust Risk Management
- 4) Lean Construction Principles
- 5) Digital Project Controls
- 6) Stakeholder Engagement & Communication



### 7) Local Content Integration\*

\*) Critical value of Utilizing Indonesia's LCR as project management strategy:

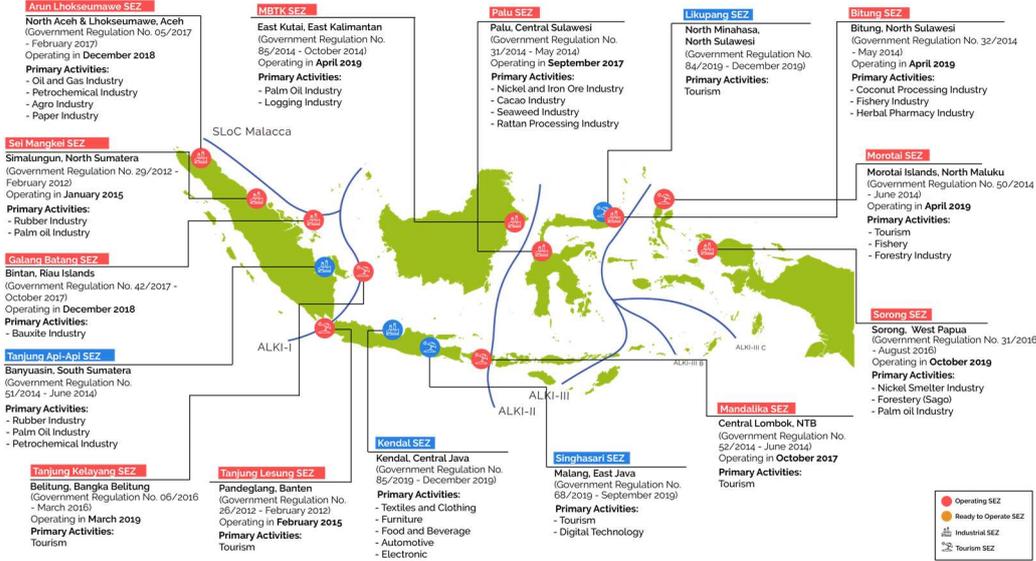
- ✓ **Improved project Logistics** and Supply Chain Efficiency
- ✓ Local sourcing **shortens lead times** and enhances responsiveness to project needs.
- ✓ Local industry development ensures **access to skilled labor** without relocation.
- ✓ **Reduces delays** due to part shortages or long procurement cycles.
- ✓ Optimized LCRs not only improve project delivery but also **stimulate local economies**, creating jobs and fostering innovation.



Utilizing Indonesia's LCR as project management strategy in the Energy SOE



# Industrial Estate Development Area in Indonesia



Indonesia's LCR provides flexibility by allowing the import of goods and services when the domestic market:

- (1) Cannot produce the required goods;
- (2) Cannot meet the specified technical standards;
- (3) Cannot fulfill the project's quantitative demand



Source:  
<https://kek.go.id/en/>

The **LCR identification & procurement** are **key drivers** in fulfilling LCR commitments and ensuring successful project execution. It is critical to strategically identify local capabilities (material & services) and aligning procurement practices with Domestic Component Level (TKDN) targets.



## Local Content Integration



### REGULATION

#### Minister of Industry Regulation No 35 of 2025 (MOI No. 35/2025)

Refer to “**MOI No. 35/2025 Article 4**”

“The calculation of the Domestic Component Level (TKDN) for goods is conducted based on key production factors, comprising:

- a. Direct materials, assigned a weight of 75% (seventy-five percent);
- b. Direct labour, assigned a weight of 10% (ten percent); and
- c. Indirect factory overhead, assigned a weight of 15% (fifteen percent)

Digital platform to update the list of manufacturers approved for supplying goods and services for the organization



Digital tools for local content calculation, tracking & reporting



- ✓ New LCR Regulation is an incentive for localization; it plays a strategic role in supporting **Foreign Direct Investment (FDI)** in Indonesia.
- ✓ **MOI No. 35/2025** offers **automatic TKDN credits—up to 25%—for foreign companies that build factories and hire local workers**; extra credits (up to 20%) are available for involving local talent in R&D and innovation activities.
- ✓ Indonesia’s new Local Content Requirement (LCR) regulation **encourages global companies** to move their manufacturing to Indonesia by offering benefits for using local materials and workers.



## LCR Conformity improved The Investment Realization Performance



### as a Component of Investment Project Evaluation



Verified Domestic Component Level (TKDN) can **only be conducted** after the investment **project is completed**. Therefore, a **higher number of completed projects** with verified TKDN reflects a preeminence of investment realization, which directly contributes to achieving the KPI for Capex performance.

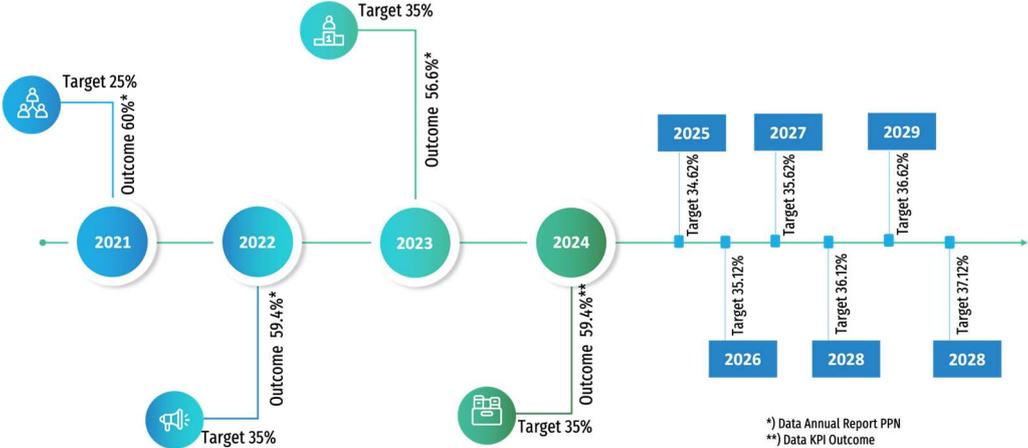


**39 KPI Projects**



# The LCR Roadmap

Before implementing the commodity roadmap in 2025, the company only used the aggregate roadmap to determine minimum Domestic Component Level (TKDN) targets. This approach applied a generalized view across all business units, without considering the specific needs, capabilities, or procurement histories of individual sub-holdings





## The Commodity Roadmap Benefits



The commodity roadmap started implementing in 2025 at the LCR planning stage in the SOE to improve the flexibility and feasibility of the LCR commitment level. Each sub-holding in the SOE has a different commodity roadmap; refer to their business process and procurement historical data.





## The Commodity Roadmap Benefits



COMMODITY	TKDN (%)
Labor Supply Services	50%
Installation Services	45%
Inspection, Certification, Calibration, and Verification	40%
Piping and Pipeline Maintenance Services	40%
Consulting Services	40%
Shipping / Handling & Transport Services	40%
Tank Construction Services	35%
Electrical Maintenance Services	35%
Water Civil Maintenance Services	35%
Tank Maintenance Services	35%
Water Civil Construction Services	30%
Strategic Consulting Services	30%
Civil Construction Services	20%
Civil Maintenance Services	20%
Electrical, Instrumentation, Mechanical, Piping Construction	15%
Instrument and Mechanical Maintenance Services	15%
Other Goods and Services	15%



- ✓ The commodity roadmap is set during the planning stage to assess:
  - 1. Feasibility** of sourcing locally
  - 2. Capacity and capability** of local manufacturers
- ✓ Helps avoid pitfalls such as unrealistic LCR targets or supply chain bottlenecks.
- ✓ Early mapping of key commodities helps project teams identify local sourcing opportunities, foresee supply chain issues, and refine procurement strategies.



## conclusion

### 1. Structured LCR Policy in The SOE

Using Indonesia's LCR as a **project management strategy** improves logistics and supply chain efficiency, reduces delays, supports local industry and labour, and **boosts both project delivery and economic growth.**

### 2. The New LCR Regulation Impact

Indonesia's new LCR regulation **incentivizes localization** by promoting the use of domestic resources, strengthening supply chains, and lowering operational risks. It reflects strong government support for sustainable industrial growth and enhances **the country's appeal for long-term foreign investment.**

### 3. Commodity Roadmap Benefits

Setting a commodity roadmap early helps **assess local sourcing feasibility** and **supplier capabilities**, while **preventing unrealistic LCR targets** and supply chain issues



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- The LCUM Team of Pertamina Patra Niaga



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**THANK YOU!**