Institute for Energy Economics and Financial Analysis

Briefing Note

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# Solving Indonesia's LPG subsidy challenge requires induction, not swapping fuels

- *Indonesia is heavily dependent on liquefied petroleum gas (LPG) for cooking, and each 3-kilogram (kg) LPG cylinder sold costs the government IDR30,000 in subsidies. In 2025, subsidized 3kg LPG cylinders accounted for 92% of the country's LPG consumption by volume, resulting in subsidies totaling IDR87 trillion.*
- *Replacing imported LPG with domestic compressed natural gas (CNG) or coal-based dimethyl ether (DME) is unlikely to reduce Indonesia's subsidy burden. CNG remains costlier than subsidized LPG under both transportation fuel prices and the specific natural gas price (HGBT) policy, even before accounting for domestic gas opportunity cost.*
- *Coal-based DME remains an economically unviable alternative for Indonesia, with the highest subsidy burden among all substitutes at IDR22,730/kg — approximately 2.3 times more than the LPG subsidy. Fully replacing LPG with DME would require around IDR194 trillion (USD11.8 billion) in annual subsidies.*
- *Electric induction offers Indonesia's most cost-effective alternative to LPG cooking. A one-time investment of IDR105 trillion (USD6 billion) to provide induction packages for eligible households could be recovered through avoided LPG subsidies in around 1.7 years, generating nearly IDR200 trillion (USD11.7 billion) over five years.*

Indonesia is heavily dependent on liquefied petroleum gas (LPG) for cooking. According to the country's Central Statistics Agency (BPS), 89.7% of Indonesian households used LPG as the primary cooking fuel in 2025. This dependence stems from the kerosene-to-LPG conversion program launched in 2007, when the government distributed tens of millions of subsidized 3-kilogram (kg) cylinders to replace kerosene, which was more expensive. The program was highly successful, making LPG the dominant household fuel, supported by a substantial permanent subsidy.

Indonesia consumed 9.24 million tonnes of LPG in 2025, of which more than 80% was imported as a finished product. According to the Ministry of Energy and Mineral Resources (MEMR), these imports require IDR130–140 trillion (USD7.9–8.5 billion) in foreign exchange each year. Approximately 29% of imports came from the Middle East, exposing the supply chain to disruptions in the Strait of Hormuz and the broader Gulf region.

Global LPG prices have risen sharply in 2026 amid the ongoing conflict in the Middle East. In response, Indonesia's Finance Minister has committed an additional IDR100 trillion (USD5.9 billion) in energy subsidies this year, in addition to the IDR381.3 trillion (USD22.5 billion) allocated in September 2025. The earlier allocation already represented nearly 10% of the 2026 state budget.

Budget cuts across all government ministries have been announced to fund the additional LPG subsidy. On 18 April 2026, Pertamina, the Indonesian state-owned oil and natural gas corporation, increased the price of non-subsidized 12kg LPG cylinders by 18.75% (from IDR192,000 to IDR228,000 per cylinder). The increase was attributed to crude oil price spikes, higher international LPG prices, the closure of the Strait of Hormuz, and currency depreciation.

These factors have a similar impact on the cost of 3kg LPG cylinders. However, the subsidized price has remained fixed at IDR12,750 per cylinder or IDR4,250/kg. Consequently, the gap between supply cost and the subsidized price has widened sharply, resulting in a higher subsidy burden.

Heavy household reliance on LPG, volatile import exposure, and a rising fiscal burden have prompted the government to seek alternatives. Two substitutes are under consideration:

1. Replacing the 3kg LPG cylinder with a similar-sized compressed natural gas (CNG) cylinder sourced from domestic gas fields
2. Producing dimethyl ether (DME) by gasifying domestic coal

Both options require significant infrastructure investment and construction times and could ultimately produce fuels that are more expensive than LPG on a delivered-cost basis.

Electric induction cooking offers a lower-cost and more efficient alternative. Unlike CNG and DME, this is a plug-and-play substitute that requires no new fuel supply chain, operates on the existing electricity grid, and converts a recurring fuel subsidy into a one-time stove investment.

This briefing note assesses each option using three criteria:

1. Delivered cost per unit of cooking energy
2. Fiscal outcomes, including the cost of fossil fuel alternatives compared with the potential payback of electrification
3. Comparison of supply chain economics

## The supply chain pricing challenge

While the conflict in the Middle East has underscored the physical supply risks of import dependence, the deeper financial challenge is that the subsidized 3kg LPG cylinder is sold at a price far below its supply cost. Based on the MEMR Regulation No. 28/2008, the government has established a regulated selling price for registered agents (*agen*), distributors appointed by Pertamina, to sell to official retail outlets (*pangkalan*) at IDR12,750 per 3kg LPG cylinder or at a cost of IDR4,250/kg at the wholesale agent handover point.

Despite volatile and rising supply market prices, this regulated handover price has remained fixed since 2007. Meanwhile, the estimated full market-based cost is around IDR42,750 per 3kg LPG cylinder or IDR14,250/kg. The government covers the difference between supply cost and market price through the state budget (APBN), subsidizing each cylinder by IDR30,000 or IDR10,000/kg for Pertamina. In 2025, subsidized 3kg LPG cylinders accounted for 92% of Indonesia's LPG consumption by volume, resulting in subsidies totaling IDR87 trillion (USD5.3 billion).

The gap between the IDR4,250/kg regulated wholesale price and what households ultimately pay widens at the final stages of the supply chain. Pertamina delivers bulk LPG from its depots to filling stations (SPBE), where it is compressed into 3kg cylinders. Registered agents (*agen*) collect filled cylinders and sell them to official retail outlets (*pangkalan*) at the regulated handover price of IDR4,250/kg. The retail outlets (the last stage in the official supply chain) then sell the cylinders to households at the highest retail price (*Harga Eceran Tertinggi* [HET]) set by each regional government — a ceiling that retail outlets cannot exceed. In 2026, this price ranged from IDR18,000 per cylinder in Central and East Java to IDR21,000 per cylinder in Aceh.

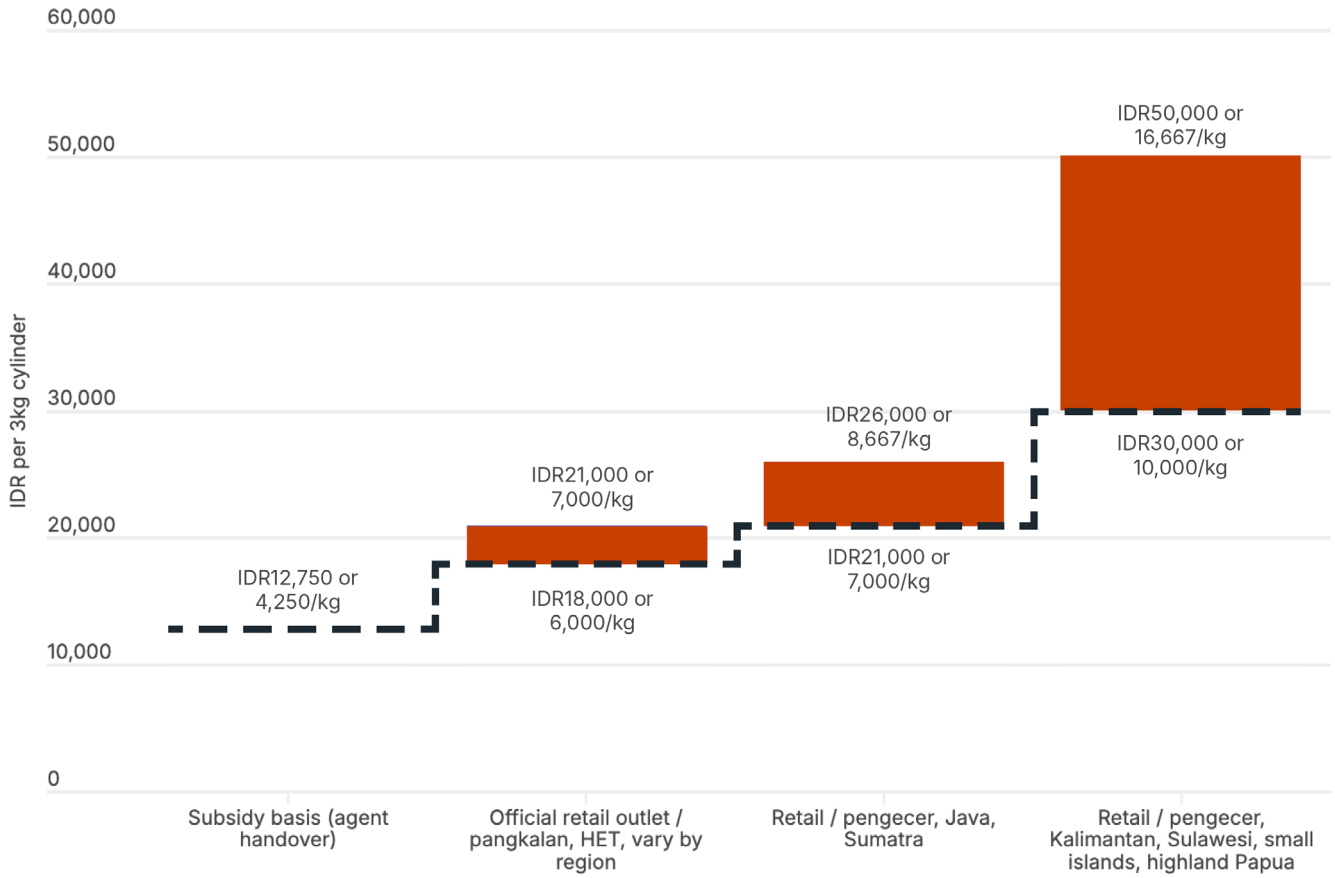
Informal retailers (*pengecer*) — not bound by the HET — resell cylinders at higher prices to cover transportation and distribution costs incurred in easing access for consumers. For example, these cylinders are sold at prices between IDR21,000 and IDR26,000 per cylinder in Java and Sumatra, while in less accessible regions, such as Highland Papua, the price can reach IDR50,000 per cylinder, or about IDR16,667/kg. Consequently, while the regulated handover price is IDR4,250/kg, many households still pay well above that level.

### Table 1: Roles along the LPG supply chain

| Party | Description | Role | Price / what it charges |
|---|---|---|---|
| **Filling station (*SPBE/ SPPBE*)** | Licensed private facility operating at Pertamina standards, receives bulk LPG from a Pertamina depot, and packages it into 3kg cylinders | Bottling point, between the bulk depot and the agent | Sells filled cylinders to agents at the Pertamina price |
| **Agent (*agen/penyalur*)** | Registered distributor appointed by Pertamina that collects filled cylinders by truck | Buys from the SPBE; supplies the official retailers | Regulated handover price, IDR4,250/kg or IDR12,750 per cylinder |
| **Official retail (*pangkalan/ sub-penyalur*)** | Registered retail outlet, the last official point in the supply chain | Buys from agents; sells to household | Regional HET, IDR18,000 to IDR21,000 per cylinder |
| **Informal reseller (*pengecer*)** | Unregistered kiosk reselling cylinders closer to households | Outside the official supply chain | Not bound by the HET; prices are higher for distribution costs & scarcity |

*Source: IEEFA analysis.*

**Figure 1: Subsidized 3kg LPG cylinder price build-up**




*Source: IEEFA analysis. Subsidy basis: Perpres 104/2007, Perpres 70/2021 & Permen ESDM 28/2008.*

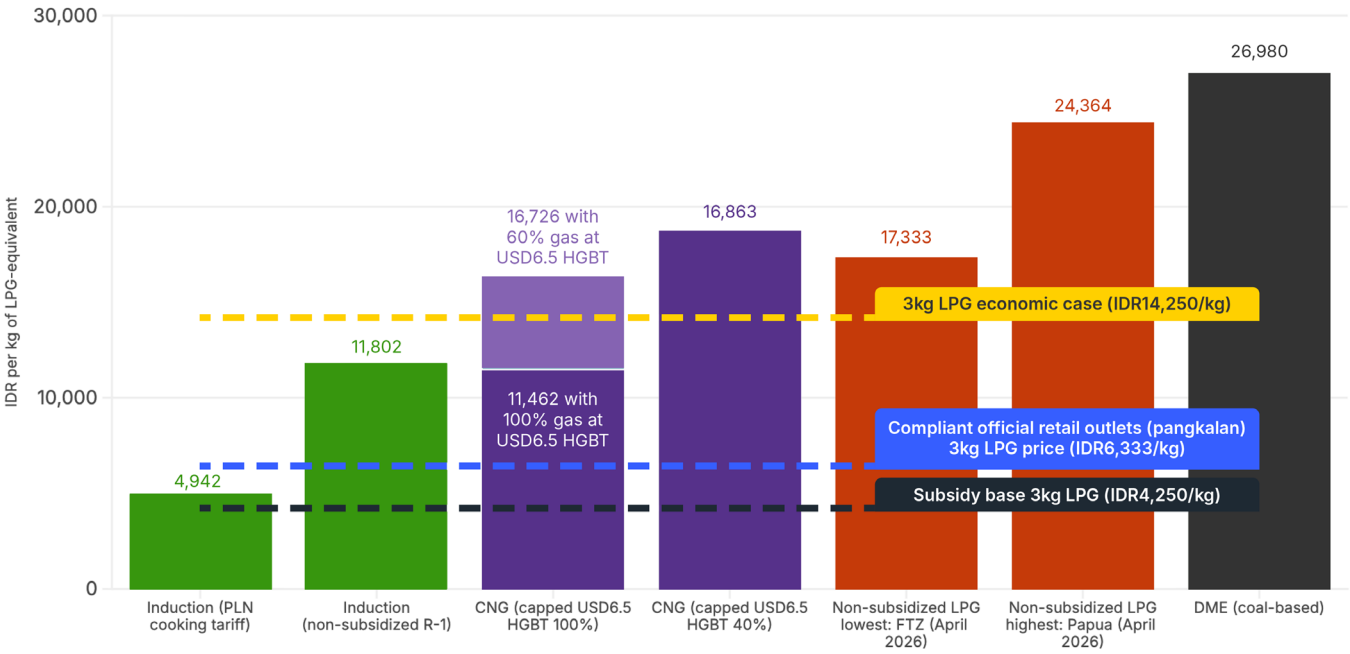
*Note: HET = Highest retail price; Perpres = Presidential Decree; Permen = Ministerial Regulation; ESDM = Ministry of Energy and Mineral Resources (MEMR).*

## Replacing LPG with costly CNG and DME is unlikely to lower subsidies

Replacing imported LPG with domestic fuel alternatives, such as CNG or coal-derived DME, is unlikely to reduce subsidies or the price build-up. Both these alternatives are expensive and would require large-scale investment in new infrastructure for production, packaging, and delivery. Unless substitute fuels can lower the delivered cost of cooking energy and reform household support, Indonesia may end up shifting subsidies from one fuel to another.

Figure 2 compares each option based on the subsidized price (IDR4,250/kg) and the typical retail price of IDR19,000 per 3kg LPG cylinder (IDR6,333/kg). CNG, LPG, and DME are far more expensive than electric induction cooktops, which have a regulated tariff closest to the subsidized price.

**Figure 2: Delivered cost of cooking energy in Indonesia by fuel option, 2026**




*Source: IEEFA analysis.*

*Note: LPG = Liquefied Petroleum Gas; CNG = Compressed Natural Gas; HGBT = Specific Natural Gas Price; FTZ = Free Trade Zone; DME = dimethyl ether.*

## 1. CNG: Cost-saving faces significant challenges

The government states that CNG could be 30–40% cheaper than LPG. However, four factors suggest otherwise.

First, experts caution that shifting from LPG to CNG would require billions of dollars of investment in production plants and distribution under a strict safety regime. CNG has to be compressed at a pressure of 200–250 bars, compared to 5–10 bars for LPG. This requires additional pressure-reduction equipment, heavier steel cylinders or more expensive composite materials, greater risks during transportation and handling, and conversion kits for existing LPG stoves. A 3kg CNG cylinder would need storage containers approximately three times larger than a 3kg LPG cylinder.

Based on the government's current design, a 3kg CNG cylinder would use Type 4 carbon-fiber composite construction, with each unit costing an estimated IDR3.4–6.8 million (around USD200–400) for a 30-liter (L) unit. Amortized over a 15-year lifespan with four refills per month, this adds around IDR3,167/kg of LPG-equivalent to the cylinder cost alone. The full CNG infrastructure chain — including equipment for compression, loading, trucking, delivery, and offloading — is estimated at USD3.85 per million British thermal units (MMBtu) according to a 2015 World Bank study. This figure is consistent with the United States (US) Department of Energy estimates for CNG fueling station costs. Applied to a system built around millions of small 3kg cylinders, the actual infrastructure cost is likely to be higher. Adjusting the 2015 World Bank figure for inflation and converted to LPG-equivalent terms, IDR3,555/kg could be added to CNG production costs. However, these benchmarks are based on industrial and transport-scale CNG operations and not household use. Therefore, even before considering the gas itself, the combined costs of the cylinder and infrastructure add at least IDR6,721/kg of LPG-equivalent.

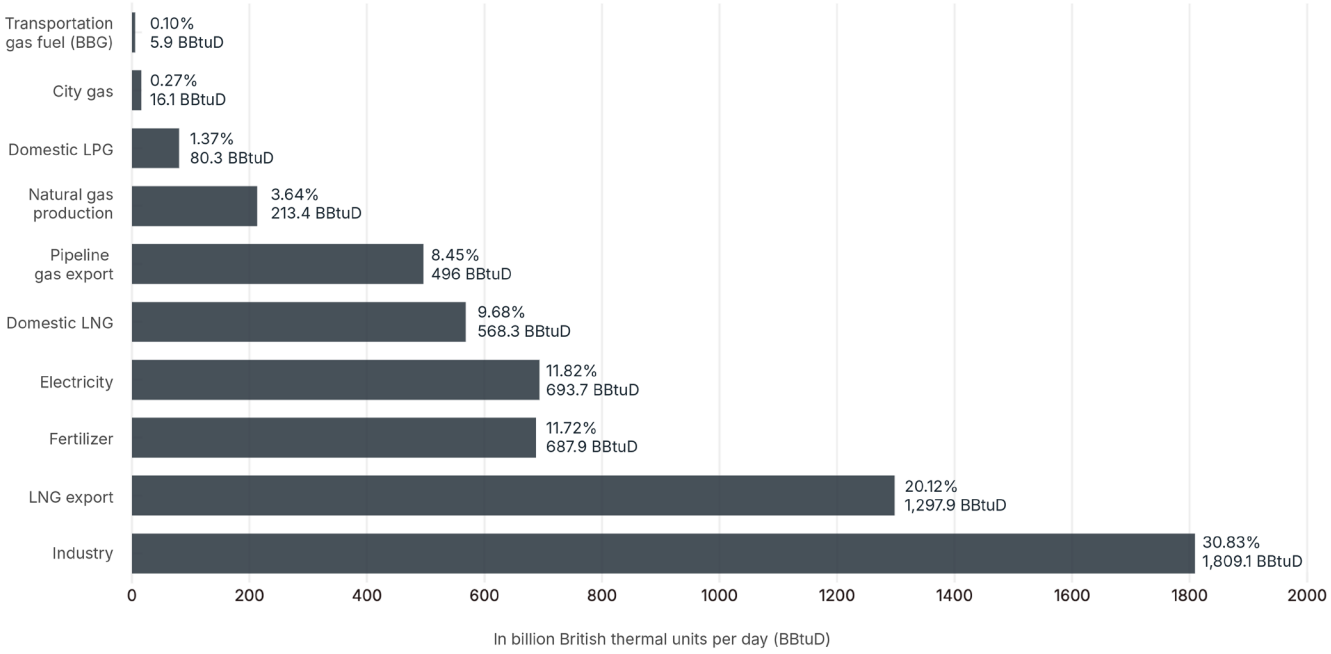
Second, an empirical reference for CNG use already exists in the Indonesian market, indicating that it is less economically competitive. Pertamina sells CNG for transportation at a government-set retail price of IDR4,500 per Premium Gasoline Liter Equivalent (*Liter Setara Premium* [LSP]), unchanged since May 2022. Converted to LPG-equivalent terms, this amounts to approximately IDR6,062/kg. This price applies to vehicles refueling at CNG fueling stations (SPBG) using their own fuel tank, avoiding the costs of returnable cylinders and last-mile distribution that a 3kg household CNG cylinder would require. Even at this fixed price — which has not kept pace with rising gas costs — CNG for transportation fuel (BBG) remains 43% more expensive than subsidized LPG at IDR4,250/kg. Adding the costs of cylinder distribution and last-mile delivery for households would likely widen this gap.

Indonesia has maintained a regulated CNG retail price for vehicles for four years, yet it has not proven cheaper than subsidized LPG, and adoption has remained limited. Transport CNG is the country's smallest single use of gas, accounting for just 0.10% of total utilization, or 5.9 billion British thermal units per day (BBtuD) (Figure 3). Expanding CNG for household cooking would require a substantial increase from a very low base, while competing with sectors that already claim the same gas supply.

Third, even under the most favorable scenario using the regulated Specific Natural Gas Price (*Harga Gas Bumi Tertentu* [HGBT]) of USD6.50/MMBtu — currently reserved to strengthen industrial competitiveness — to supply the household sector, the delivered cost of CNG would be around IDR11,462/kg of LPG-equivalent. Compared with the IDR14,250/kg economic cost of LPG, this represents a 19.6% saving, not 30–40%. In practice, domestically produced gas under the HGBT regime is not always available where demand centers are located due to prioritized competing uses. This means that, in many cases, industrial and household CNG bottlers must rely on regasified liquefied natural gas (LNG) at prevailing spot prices, with the addition of regasification and import duties. The delivered cost of LNG-derived gas could increase to about IDR23,500/kg of LPG-equivalent at the 2026 year-to-date average exchange rate of IDR17,100 per USD — almost 65% higher than the LPG supply cost currently paid by the state.

The government's projected savings of 30–40% would only be achieved if natural gas were supplied to households at prices well below the regulated industrial gas ceiling. Rather than reducing the LPG subsidy, this would effectively replace it with an upstream gas subsidy that would also require state funding. This is significant because industry is the largest domestic gas consumer, accounting for 30.83% of utilization, or 1,809.1 BBtuD (Figure 3), while volumes under the HGBT are already constrained. Extending similarly regulated prices to millions of households would place cooking in direct competition with the country's largest existing source of gas demand, rather than utilizing any surplus.

**Figure 3: Indonesian gas allocation by sector, 2023**




*Source: Table 1.7 - Buku Statistik Migas 2023. Director General of Oil and Gas (Ditjen Migas) - Ministry of Energy and Mineral Resources. IEEFA analysis.*

Fourth, Indonesia has a limited gas supply. In July 2025, the government's upstream oil and gas supervising body, SKK Migas, confirmed that domestic production was declining at around 4% annually, with 69% of existing output already allocated to the domestic market. The remaining production capacity is largely committed to long-term LNG export contracts. Meanwhile, Indonesia's national electricity utility, PT Perusahaan Listrik Negara's (PLN) LNG demand is rising sharply. PLN Energi Primer Indonesia (PLN EPI), the subsidiary responsible for procuring primary energy fuels (gas, coal, and LNG) for power generation, purchased 90 LNG cargoes in 2025 and forecasts 104 cargoes in 2026, with reserves standing at just 12 days as of April 2026.

A nationwide household CNG program would therefore involve an opportunity cost. Every unit of gas allocated to subsidized cooking would be unavailable for power generation, industrial use, or other higher-value domestic demand. Figure 3 shows that in 2023, LNG and pipeline exports together account for around 31% of gas utilization, or 1,753.9 BBtuD, while industry, power generation, and fertilizer production consume most of the remainder. Domestic LPG feedstock, city gas, and transport CNG — the categories closest to household cooking — together account for less than 2% of total gas utilization. There is unlikely to be any surplus gas supply available to support a national cooking program; any new allocation would require displacing an existing user or increasing LNG imports.

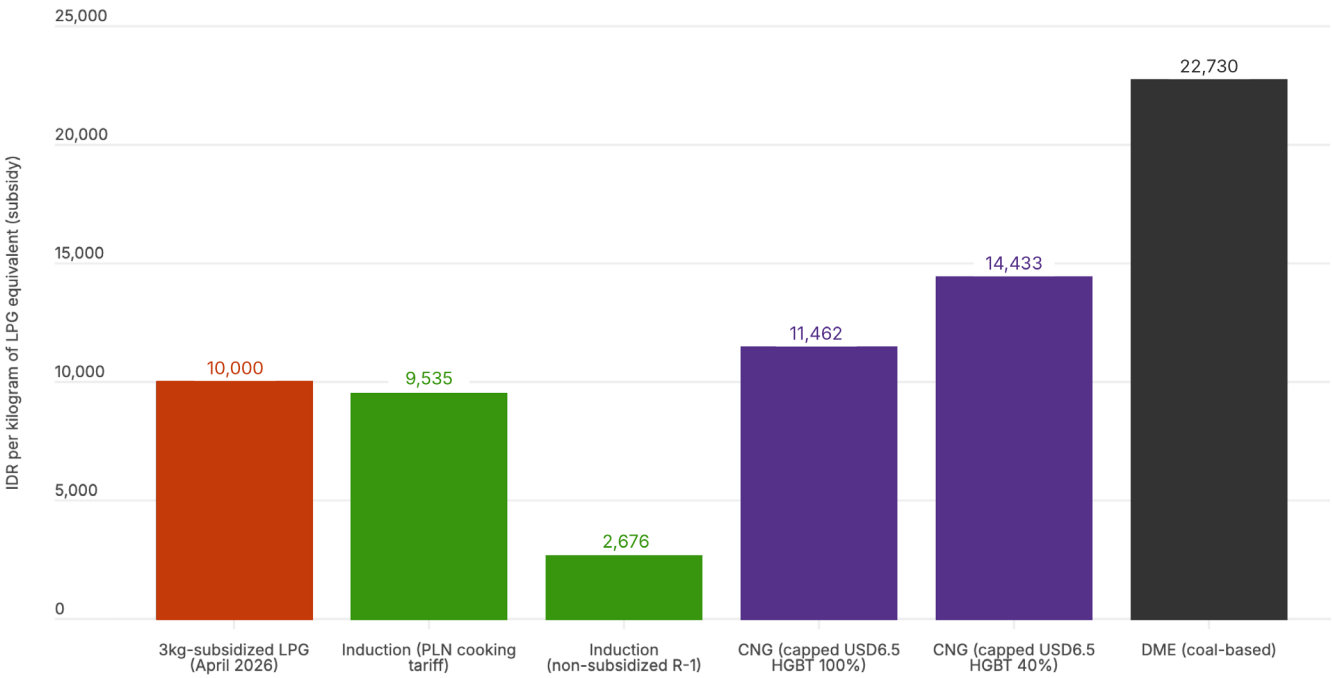
## 2. DME: Unfavorable economics persist

The Institute for Energy Economics and Financial Analysis (IEEFA) analyzed the economics of DME production in 2020 and 2025, reaching the same conclusion both times: DME production is not cost-effective and would require ongoing subsidy support. The 2020 analysis estimated that the Tanjung Enim coal gasification project would incur annual losses of USD377 million. The 2025 research found that a 1.4 million tonne DME plant would require USD2.6 billion in capital, in addition to USD520 million in opportunity costs over 10 years, while displacing only 15% of LPG imports and delivering energy at a 42% higher cost than LPG. Reflecting these

unfavorable economics, Shanxi Lanhua, a listed Chinese coal and chemical company that produces DME, urea, and caprolactam (CPL), shut down its DME plant in 2023.

Air Products, a US-based industrial gas company, withdrew from Indonesia's flagship DME project in 2025, the second foreign investor to exit after Chinese investors pulled out. The government is now pursuing six DME projects across Sumatra and Kalimantan under a Danantara-led financing structure, with PT Bukit Asam Tbk (PTBA), Indonesia's state-owned coal mining enterprise, still finalizing feasibility studies as of early 2026. However, the underlying economics remain unchanged. The only difference would be that potential losses would likely shift from foreign investors to domestic entities under the Danantara structure, and ultimately to the state.

**Figure 4: Subsidy required per kg of LPG-equivalent at the IDR4,250/kg standard**




*Source: IEEFA analysis.*

Figure 4 shows the subsidy burden each energy alternative would impose. DME carries the largest per-kg subsidy requirement at IDR22,730/kg — approximately 2.3 times the IDR10,000/kg LPG subsidy. Scaled to Indonesia's 2025 LPG consumption of 9.24 million tonnes, a full DME replacement would require around IDR194 trillion (USD11.8 billion) in annual subsidies, which is more than double the IDR87 trillion (USD5.3 billion) spent on 3kg LPG subsidies in 2025. For context, the total government payment to PLN in subsidies and compensation in 2025 was IDR200 trillion (USD12.1 billion). Replacing LPG with DME would create a single new subsidy line item almost as large as the entire 2025 electricity support bill — and Indonesia would continue to subsidize electricity.

## 3. Induction cooktops: One-time cost with recurring savings

Electric induction cooking is the only option that does not rely on imported fuel or a constrained domestic gas supply. It uses electricity generated on the Java-Bali grid, where capacity is in surplus. Unlike CNG or DME, induction requires no new fuel supply chain. Each household that switches from LPG to induction could immediately reduce the state's subsidy burden, without the need for new infrastructure or cylinder procurement.

A pilot program launched by PLN in 2022 in Surakarta and Denpasar provided participating households with a free induction stove, cookware, and a dedicated kitchen circuit without changing the connected load. PLN estimated the package cost at approximately IDR1.8–2.5 million per household, including IDR1.2 million for the induction stove, IDR500,000 for cookware, and IDR800,000 for the dedicated kitchen circuit and miniature circuit breaker (MCB) installation. The fixed cost of the dedicated kitchen circuit is a one-time investment for each household, comparable to the pressure-reduction valve in a CNG system. A separate assessment by the MEMR Research and Development Agency (Balitbang) calculated higher capital expenditure (capex) at around IDR5.572 million per household, reflecting more conservative installation and electrical upgrade costs.

Cooking on this dedicated circuit was billed at a special tariff of IDR4,550/kg of LPG-equivalent, marginally above the subsidized price of IDR4,250/kg but below the price households currently pay for LPG at official retailers. Under a dedicated PLN cooking tariff of IDR634 per kilowatt-hour (kWh) for low-income households, the estimated subsidy cost would be IDR9,535/kg, a smaller subsidy than for LPG's IDR10,000/kg. Figure 4 shows that induction is the only alternative below the current LPG benchmark.

In comparison, for the non-subsidized category I (R-1) households, the estimated subsidy cost would be IDR2,676/kg. However, this is not a separate policy measure; it reflects the existing gap between PLN's supply cost and the tariff paid by non-subsidized households. An R-1 household that switches to induction could lower its cooking energy costs to this level without any additional government funding. This analysis is supported by the survey results of 100 pilot households, which found monthly cooking cost savings of up to IDR35,703 compared with unsubsidized LPG.

As of April 2026, Pertamina's official non-subsidized 5kg and 12kg LPG prices imply a delivered agent-level price of approximately IDR17,333–24,364/kg, depending on cylinder size and region. By comparison, induction costs about IDR11,800/kg of LPG-equivalent at standard residential electricity rates, making it competitive with non-subsidized LPG even without a special tariff.

Table 2 compares monthly cooking costs of each alternative for a typical household consuming four 3kg LPG cylinders per month (144kg annually).

**Table 2: Monthly cooking costs for subsidized and non-subsidized LPG and induction options**

| Option | Monthly cost to household | Monthly cost to state | Notes |
|---|---|---|---|
| **Subsidized 3kg LPG cylinder**<br><br>IDR4,250/kg regulated basis | IDR76,000 to IDR180,000 | ~IDR120,000 | **High fiscal cost**<br><br>Household pays IDR6,333/kg to IDR15,000/kg depending on channel and region |
| **Non-subsidized LPG**<br><br>Official retailers: IDR17,333-24,364/kg<br><br>Informal resellers: IDR20,000-28,000/kg | ~IDR228,000 to IDR336,000 | None | **No subsidy**<br><br>Paid entirely by household; used as the market-price benchmark |
| **Induction — PLN cooking tariff**<br><br>IDR4,550/kg LPG-equivalent | ~IDR54,600 | ~IDR114,000<br><br>+ IDR1.8-2.5M one-time for cooktop | **Lowest monthly cost**<br><br>Requires dedicated low-income cooking tariff and upfront package cost |
| **Induction — Standard R-1 tariff**<br><br>IDR11,800/kg LPG-equivalent | ~IDR142,000 | Existing R-1 under recovery only (compensated) | **Cheaper than unsubsidized LPG**<br><br>No new policy required; lower than non-subsidized LPG by ~38% without any additional government support |

*Source: IEEFA analysis; Pertamina Patra Niaga. Non-subsidized LPG cylinder price (last updated 18 April 2026); PLN. Electricity Tariff: Katadata. Quote from PLN General Manager.*

Extending the analysis to the national level increases the scale of the impact without changing the overall conclusion. According to Pertamina, as of July 2025, 57 million recipients had enrolled in their digital system and purchased subsidized 3kg LPG cylinders. Based on MEMR's 2025 performance report, households account for 87.4% of total recipients, or about 49.8 million households. Applying an illustrative means-tested 85% eligibility rate — consistent with the government's intention to target LPG subsidies to economically vulnerable households using the Integrated Social Welfare Data (DTKS) and Targeting Data for the Acceleration of Extreme Poverty Eradication (P3KE) systems — would result in approximately 42 million households qualifying for an induction conversion package.

Using PLN's published 2022 pilot cost of IDR2.5 million per household, the total one-time capex would reach approximately IDR105 trillion (USD6 billion). Based on MEMR Balitbang's higher estimate of IDR5.572 million per household, the capex could increase to around IDR234 trillion (USD13.7 billion).

The elimination of recurring subsidies could offset these one-time investments. Based on a subsidy gap of IDR10,000/kg (IDR14,250/kg economic cost less the IDR4,250/kg subsidized price) and average household consumption (144kg/year), the government could avoid approximately IDR61 trillion (USD3.5 billion) annually across the 42 million eligible households.

At this rate, the one-time investment could be recovered through avoided subsidies in 1.7 years at the mid-range package cost and 3.9 years under the higher estimate (Figure 5).

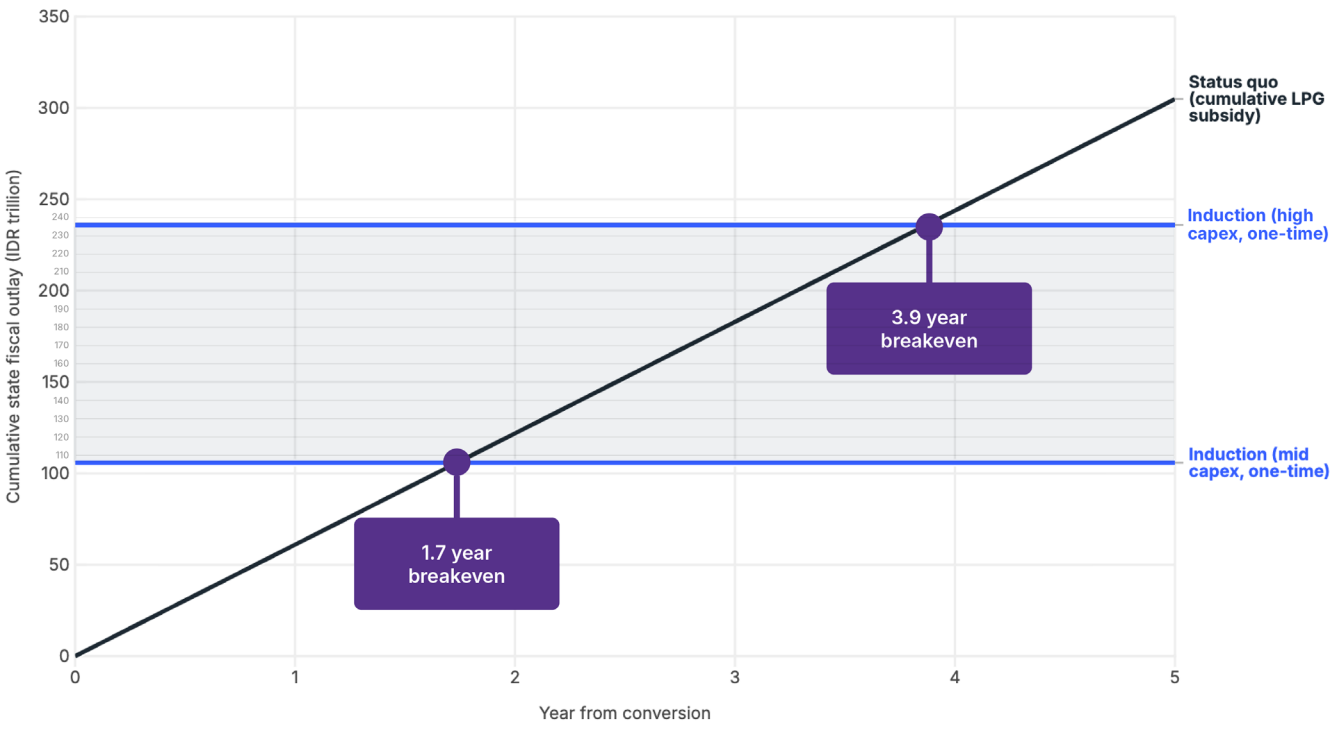
Over five years, the cumulative net fiscal savings could reach approximately IDR200 trillion (USD11.7 billion) under the mid-capex scenario and IDR69 trillion (USD4 billion) under the high-capex scenario.

However, PLN's induction cooking pilot was discontinued before it could be scaled up after concerns were raised about the fiscal implications of a nationwide deployment during the COVID-19 pandemic. Officials estimated that expanding the program would require IDR5 trillion (USD292 million) annually for induction stove distribution, household electrical upgrades, and cooking tariff support.

By comparison, the LPG subsidy reached IDR87 trillion (USD5.3 billion) in 2025. Based on the estimated cumulative savings of IDR69–200 trillion (USD4–11.7 billion) over five years, the annual implementation cost of IDR5 trillion could be more than offset by lower subsidy support.

Compared with CNG and DME, induction cooking offers a more structurally efficient and cost-effective pathway for reducing subsidy support than either gas-based alternative.

**Figure 5: One-time induction capex vs cumulative LPG subsidy avoided over five years**

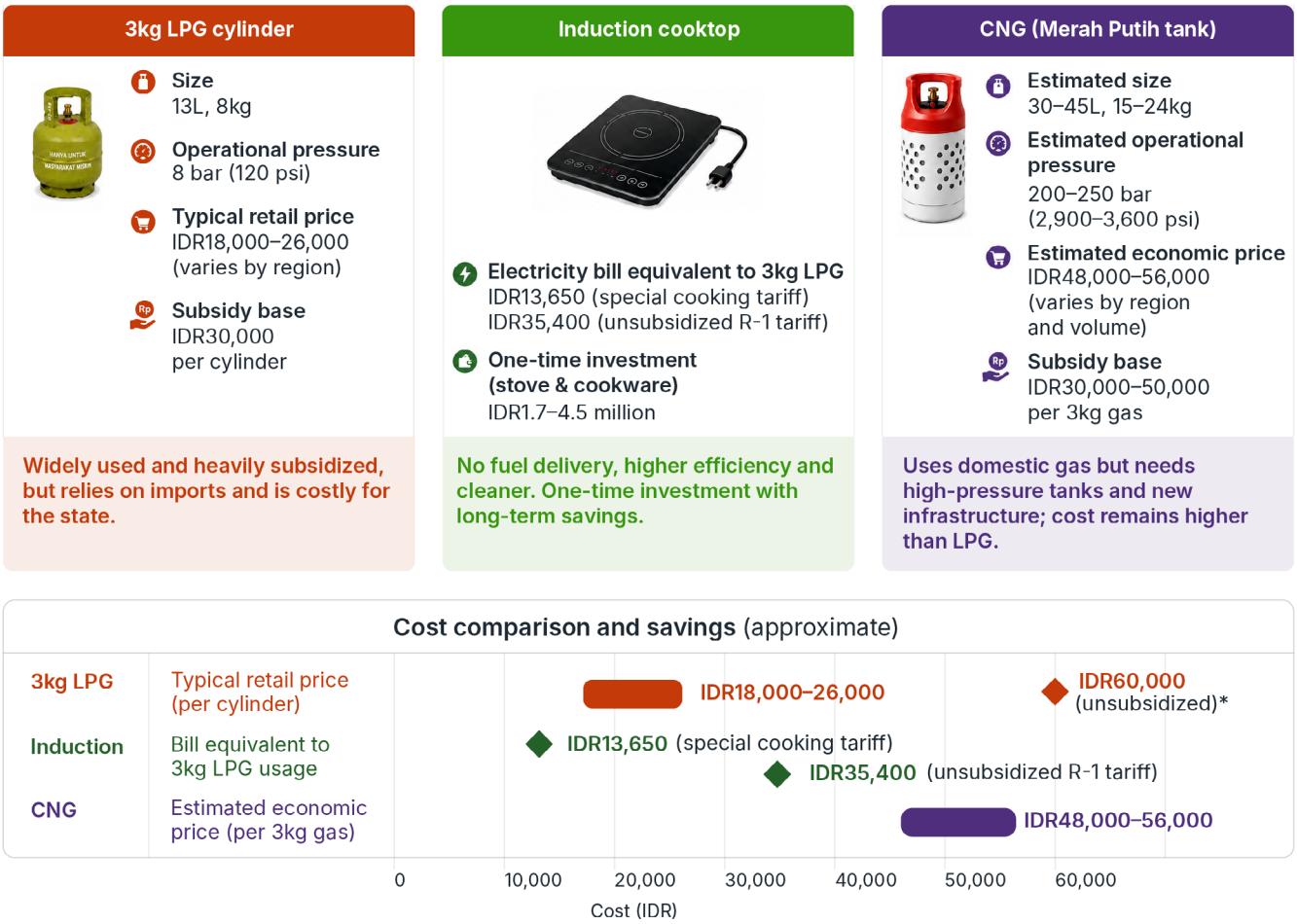



*Source: IEEFA analysis.*

In the 2027 draft state budget, the MEMR proposed IDR815.56 billion (USD47.7 million) for a new electric stove program to reduce LPG import dependence, signaling that induction is moving from pilot to budgeted policy. Based on an induction package cost of IDR2.5 million, the proposed amount could electrify around 326,000 households and avoid approximately IDR470 billion in annual LPG subsidies.

This does not suggest that LPG has no role in Indonesia's energy system. It will likely remain necessary for roadside food vendors, small restaurants, mobile cooking businesses, and households in remote or weak-grid areas where induction is not yet a viable alternative. The critical policy question is not whether LPG should be phased out entirely, but whether the state should continue subsidizing household LPG consumption at its current scale.

**Figure 6: Household cooking options in Indonesia**




*Source: IEEFA analysis.*

*Note: *Unsubsidized LPG price is sourced from the official Pertamina Patra Niaga agent price for the 5.5kg LPG cylinder, converted to a 3kg-equivalent price by multiplying the per-kilogram unit price by 3. Actual prices vary by region.*

## Recommendations for subsidy reform

A successful cooking fuel transition requires subsidies to follow eligible households rather than a specific fuel. The government currently subsidizes a 3kg LPG cylinder at a base price of IDR4,250/kg, yet households ultimately pay between IDR6,333/kg and IDR15,000/kg, depending on distribution costs.

In May 2026, the National Energy Council (*Dewan Energi Nasional* [DEN]) confirmed plans to shift the 3kg LPG subsidy from a commodity-based to a household-based model, using data from the Integrated Social Welfare (DTKS) and Targeting for the Acceleration of Extreme Poverty Eradication (P3KE). This would provide a practical transition to a means-tested induction stove support program, as the infrastructure required already exists, including electronic identity cards (e-KTP), Prosperous Family Card (KKS)-linked bank accounts, and MyPertamina cylinder records.

For this transition to succeed, three measures should be implemented:

1. The electricity cooking tariff piloted by PLN in 2022 should be formalized through a Ministerial Regulation issued by the MEMR or, preferably, through a Presidential Regulation. The tariff should be calibrated to ensure that eligible households do not pay more for electricity than they do for LPG.
2. The subsidy should shift from the cylinder to the eligible household. Decoupling support from the cylinder would reduce leakage by disallowing ineligible households and businesses from benefiting from subsidies.
3. Induction stoves and dedicated circuits should be provided as a one-time public investment, supported by clear targets, consultation with Indonesia's House of Representatives (DPR), and a public outreach campaign to build awareness of the benefits and long-term value of induction cooking.

Subsidy reform and induction stove deployment should proceed in parallel because they rely on the same delivery system. Both require a verified list of eligible households, a mechanism for identification, and a means of delivering support directly, regardless of whether the support comes through electricity tariffs or through gas. Once established, the same framework can be used to target LPG subsidies in areas without reliable power.

## Conclusion

Heavy reliance on imported LPG exposes Indonesia to energy security risks and a substantial subsidy burden. However, simply replacing LPG with CNG or DME would not resolve the underlying subsidy issue. The fiscal burden results from selling cooking energy below cost through a distribution system in which intermediaries capture subsidy benefits, while many households pay more than the official subsidized price.

CNG may have a role in selected market segments, but it has yet to demonstrate the projected 30–40% cost savings after accounting for compression, cylinders, safety systems, logistics, and conversion expenses. Pertamina's transportation gas price (BBG) — the only operational CNG retail price in Indonesia — is already 43% higher than subsidized LPG on an LPG-equivalent basis, even before household cylinder costs are included. Additionally, the ultra-high pressures required to store and distribute CNG raise long-term public safety concerns.

DME faces an even greater economic challenge. Previously, IEEFA analysis found that DME would cost more per unit of energy than LPG. Consequently, both potential substitutes (CNG and DME) could require substantial long-term financial support, comparable to or exceeding current subsidies. A full DME transition could result in an annual subsidy burden of approximately IDR194 trillion — almost equivalent to the IDR200 trillion (USD12.1 billion) the government provided PLN in electricity subsidies and compensation in 2025.

Electric induction cooking offers a structurally different approach, replacing recurring fuel subsidies with a one-time public investment per household, provided cooking tariffs and direct household support are transparently funded. Since induction cooking runs on domestically supplied electricity, its economic benefits increase as Indonesia's power grid decarbonizes.

The remaining fiscal gap can be addressed through a dedicated cooking tariff and direct subsidy payments to verified households. Induction cooking can be deployed immediately, with incremental benefits accruing as each additional household switches from LPG. Since households already have access to electricity, just the induction stovetop needs to be provided.

Using PLN's published 2022 package cost of IDR2.5 million per household, scaled across the approximately 42 million eligible households consuming the national average of 144kg of LPG per year, the one-time national investment is about IDR105 trillion (USD6 billion). Based on the mid-range package cost, this investment could be recovered through avoided LPG subsidies in around 1.7 years. Over five years, cumulative net fiscal savings could reach nearly IDR200 trillion (USD11.7 billion).

Much of the required infrastructure is already in place. Rather than selecting a replacement fuel first and calculating the costs later, Indonesia should prioritize reforming energy subsidy delivery so that support reaches verified households directly. Alternative fuels should be evaluated against delivered energy cost, fiscal payback, and import reduction per rupiah spent. Assessed against these criteria, electric induction cooking offers the strongest economic case, outperforming both CNG and DME in terms of cost, savings, and long-term energy security.

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