



Running Out of Options: Six Questions for PLN

Can The Ministry Of Finance Find An Exit Plan?

Executive Summary

The COVID-19 pandemic has not done the Indonesian power sector any favours. Demand has crashed, prospects for tariff relief are poor, and the coal sector is pushing hard for relief at state power company PT Perusahaan Listrik Negara's (PLN's) expense. For PLN's leadership team and the financial stewards at the Ministry of Finance (MOF), PLN's increasingly troubled financials raise questions that neither arm of the bureaucracy are well positioned to answer in public.

Financial and power sector analysts normally perform an annual health check on PLN following the release of the Electricity Supply Business Plan (RUPTL), but this year's RUPTL has been delayed. To get things started, PLN released a planning document in September that provides insight into current post-COVID thinking about the outlook for PLN's financials. IEEFA has used this data and other disclosures to update our PLN model in advance of the release of the RUPTL.

Based on our newly revised forecast for PLN's financial performance from 2020 through 2022, investors and development partners will need to stress test the new RUPTL based on the following risks to PLN's future:

**Investors and
development partners
will need to stress test
the new RUPTL
against the risks**

1. **Downside Demand Risks:** An average of PLN's new scenarios projects a demand decline of 6.0% in 2020 before seeing a rebound of 4.7% in 2021. This compares with PLN's pre-COVID outlook which called for 4.5% unit sales growth in 2020 and the same 4.7% in 2021. In the new scenarios for the 2021-2029 period, however, PLN's planners have maintained average annual growth at 5.2%, in line with their pre-COVID projections, despite much higher risks to economic growth and structural changes in the sector
2. **Is There a Limit to MOF Subsidies?** Based on IEEFA's estimates, subsidies and compensation to cover higher independent power project (IPP) payments will rise by 31.5% in 2020 to IDR 97.3 trillion (USD 6.5 billion). In the absence of tariff increases, over the next two years, the price tag will almost double to IDR 170.2 trillion (USD 11.4) as new IPPs come on-line.

3. **The Tariff Model is Broken:** PLN's reliance on IPPs with fixed capacity payments have robbed the utility of any ability to manage its operating cost profile. This will put the MOF on the front-line as PLN's guarantor in light of the gap that has now opened up between current tariff norms and those that would be required to meet a traditional cost recovery model referenced by lenders. Our estimates suggest that tariffs would need to rise by more than 30.0% to sustain PLN's operating cash flow—a level that would surely test public approval.
4. **Cost-Cutting Has Consequences:** PLN has rightly announced its intention to preserve cash in 2020 and our forecasts include lower fuel costs and capital expenditure (capex). Moving forward, fuel costs should remain in check, but capex cuts could come at a cost to badly needed improvements in system performance. PLN's grid requires significant investment as a result of rapid capacity expansion and poor system control.
5. **The 23% RE by 2025 Target Remains Aspirational:** Despite PLN's decision to lock-in new fossil fuel baseload, the company has recently adopted a PR-friendly green narrative. The current plan includes more large hydro, geothermal, biomass co-firing, and minimal wind and solar. Looking at the data, fossil fuels will account for more than three-quarters of the energy mix for the coming decade and cost competitive new renewables will account for no more than 3.7% during the period.
6. **Leading Financial Intermediaries Have Missed the Real Risks:** PLN has maintained its access to global capital markets despite a comprehensive breakdown in the company's fundamentals. Its baseline credit score has been quietly downgraded by Moody's to Ba3—the lowest investment grade rating. The disconnect between the sovereign rating which anchors PLN's access to debt markets and the company's deteriorating fundamentals has the potential to bite investors and the MOF.

Contents	
Executive Summary.....	1
PLN’s Fundamentals Defy Spin.....	4
Key Forecast Assumptions.....	6
New Facts Demand New Analysis.....	7
What Comes Next?.....	16
About the Authors.....	18

PLN's Fundamentals Defy Spin

The scale of PLN's financial problems can no longer be ignored. On September 18 BUMN Minister Erick Thohir sent a letter to the heads of the Ministry of Energy and Mineral Resources (MEMR) and Indonesia's capital investment coordinating board (BKPM) requesting that they take PLN's over-capacity into account and seek ways to increase power demand for PLN. The letter, which was broadly reported, included a specific request to limit business permits that would include captive power and electricity supply projects.¹ The reason? The need to address PLN's funding capacity and the impact on the State Budget.

This is not the first time that high level concerns have been expressed about PLN's IPP-heavy business model. Finance Minister, Sri Mulyani Indrawati had the foresight to highlight the financial risks associated with the 35 gigawatt (GW) program in 2017.² What's notable about Thohir's letter is that it is the first recent acknowledgement from a member of President Joko Widodo's top team that PLN is now a problem that cannot be ignored. The COVID-19 pandemic has not done the Indonesian power sector any favors. Demand has crashed, prospects for tariff relief are poor, and the coal sector is pushing hard for relief at PLN's expense. For PLN's leadership team and the financial stewards at the Ministry of Finance, PLN's increasingly troubled financials raise questions that neither arm of the bureaucracy are well positioned to answer in public.

Financial and power sector analysts normally perform an annual health check on PLN following the release of the RUPTL. This year, the spring ritual has been delayed as the MEMR has kept the RUPTL under wraps as the impacts of COVID have ricocheted through the Indonesian economy. Nonetheless, PLN released a planning document in September that provides practical insights into current thinking on the outlook for PLN's financials.³ IEEFA has used this data and other disclosures to update our PLN model in advance of the release of the RUPTL.

**There is rising financial
and operational
distress for PLN.**

Our analysis paints an unsurprising picture of rising financial and operational distress for PLN as it struggles to digest the ballooning costs associated with growing reliance on the inflexible new coal-fired IPPs mandated under the 35GW fast-track program. Based on our newly revised forecast for PLN's financial performance from 2020 through 2022, investors and development partners will

¹ CNBC Indonesia. [Beredar Surat Erick Thohir ke Menteri ESDM Soal Kondisi PLN!](#) October 1, 2020.

² Jakarta Globe. [Leaked Letter Reveals Finance Minister's Worries Over State Power Company PLN's Debts.](#) September 27, 2017.

³ PLN. [Proyeksi Perencanaan Ketenagalistrikan Melalui RUPTL.](#) September 9, 2020.

need to address more realistic downside scenarios reflecting growing operational and policy risks.

Table 1: PLN Income Statement – Forecast Through 2022

(in Millions IDR)	2017 Rp	2018 Rp	2019 Rp	2020E Rp	2021E Rp	2022E Rp
REVENUES						
Sale of electricity	246,586,856	263,477,551	276,061,925	259,498,210	271,694,625	285,551,051
Sales GWh	223,530	234,610	245,379	230,656	241,497	253,813
YOY% Change Sales	3.5%	5.0%	4.6%	-6.0%	4.7%	5.1%
Customer connection fees	7,113,454	7,309,172	6,934,597	7,281,327	7,645,393	8,027,663
Others	1,594,933	2,111,019	2,644,067	2,802,711	2,970,874	3,149,126
Total Revenues	255,295,243	272,897,742	285,640,589	269,812,904	282,552,389	296,981,654
OPERATING EXPENSES						
Fuel and lubricants	116,947,824	137,266,678	136,084,482	115,127,472	123,877,160	133,291,824
Purchased electricity	72,426,641	84,267,611	83,563,991	109,032,463	149,540,107	184,688,597
Lease	6,592,161	4,272,082	3,617,376	3,617,376	3,617,376	3,617,376
Maintenance	19,515,606	20,737,601	22,328,178	22,886,382	23,458,542	24,045,006
Personnel	23,124,511	22,950,087	25,908,771	26,556,490	27,220,403	27,900,913
Depreciation	29,160,597	30,744,712	35,318,071	37,083,975	38,938,173	40,885,082
Others	7,706,754	7,950,118	8,620,069	8,620,069	8,620,069	8,620,069
Total Operating Expenses	275,474,094	308,188,889	315,440,938	322,924,227	375,271,830	423,048,866
OPERATING LOSS BEFORE SUBSIDY	(20,178,851)	(35,291,147)	(29,800,349)	(53,111,324)	(92,719,440)	(126,067,212)
Government's electricity subsidy	45,738,215	48,101,754	51,711,774	70,572,045	110,180,162	143,527,934
Compensation income* 2018 adjustment after yearend		23,173,464	22,253,517	26,704,220	26,704,220	26,704,220
OPERATING INCOME AFTER SUBSIDY	25,559,364	35,984,071	44,164,942	44,164,942	44,164,942	44,164,942
Other income -net	3,409,941	15,663,363	(3,667,666)	(3,667,666)	(3,667,666)	(3,667,666)
Gain (loss) on foreign exchange - net	(2,935,144)	(10,926,741)	9,486,326	(10,639,487)	1,000,000	1,000,000
Financial income	1,066,842	804,321	755,103	755,103	755,103	755,103
Financial cost	(18,556,931)	(21,624,176)	(24,619,495)	(27,081,445)	(28,435,517)	(29,857,293)
INCOME (LOSS) BEFORE TAX	8,544,072	19,900,838	26,119,210	3,531,447	13,816,862	12,395,086
TAX BENEFIT (EXPENSES)	(4,115,955)	(8,325,082)	(21,797,080)	(776,918)	(3,039,710)	(2,726,919)
INCOME FOR THE YEAR	4,428,117	11,575,756	4,322,130	2,754,529	10,777,153	9,668,167
KEY FORECAST ITEMS						
Unit Sales Growth	3.5%	5.0%	4.6%	-6.0%	4.7%	5.1%
Yearend FX Movement %	13,555	14,568	13,866	14,875	14,875	14,875
	-0.6%	-7.5%	4.8%	-7.3%	0.0%	0.0%
Subsidy Sensitivity						
Total Subsidy and Compensation	45,738,215	71,275,218	73,965,291	97,276,266	136,884,382	170,232,154
Total Subsidy -- USD	\$ 3,075	\$ 4,792	\$ 4,972	\$ 6,540	\$ 9,202	\$ 11,444

Source: PLN financial reports and IEEFA estimates.

Key Forecast Assumptions

IEEFA's revised forecast for PLN reflects two key assumptions that shape the top line. We have used PLN's forecast for a unit sales decline of 6.0% in 2020 and an average of PLN's new optimistic-moderate-pessimistic scenarios for 2021 and 2022 resulting in unit sales growth of 4.7% and 5.1% respectively (see Table 2). The other assumption crucial to our outlook for weak revenues is the absence of a tariff increase in the forecast period. This reflects our view that the government will lack the political will to increase tariffs in the face of weak growth over the forecast period. Even prior to the COVID outbreak, during a period of moderate growth, PLN's stated tariff increase plan was designed to do nothing more than end discounts offered to ratepayers in certain low-income categories.⁴

PLN's operating costs during the forecast period are driven by planned increases in IPP capacity. We see little risk to this forecast. The MEMR has announced a short list of COVID-related project completion delays in 2020 and 2021 that are reflected in our forecast, but the forecast build-up of new IPP capacity remains largely on track as many of the projects are now at an advanced stage of development. As a result, IPP costs are set to surge and are expected to account for 43.7% of PLN's operating costs in 2022, an increase of 121.0% versus 2019.

Table 2: PLN: New Generation Capacity Forecast (MW) With Project Delays

	2019	2020E	2021E	2022E	2023E	Total
PLN	2,768	3,388	1,178	1,442	1,203	9,979
IPP	990	6,148	5,205	4,646	5,112	22,101
Unallocated/rental		315	78	552	321	1,266
Total New Generation Capacity	3,758	9,851	6,461	6,640	6,636	33,346
Impact of Project Delays	(100)	(210)	110	(800)	(600)	(1,600)

Source: RUPTL 2019 and MEMR announcements.

Note: Adjusted totals in italics.

As before, we have modelled the GOI's state budget support for PLN as a balancing factor, filling the gap between PLN's operating loss before subsidy and a post-subsidy operating income figure which has been set at a level required to permit PLN to cover its financial and tax obligations. Foreign exchange movements are expected to be a drag on earnings in 2020 before reversing in 2021, but higher interest expenses will be driven by the 25.6% increase in PLN's long-term bank loans and bonds outstanding in 2019 as noted in our September report on PLN's strategy options.⁵

In the absence of a meaningful tariff increase, we expect PLN's operating cash flow position to turn sharply negative as the forecast period progresses. This can only be offset by continued levels of high subsidy and compensation support. The cash flow

⁴ Kompas. *Catat, subsidi listrik 24.4 juta pelanggan 900VA dicabut pada 2020*. September 3, 2019.

⁵ IEEFA. *Never Waste a Crisis -- Indonesia's PLN Needs a Coherent Strategy to Ride Out the COVID-19 Pandemic*. September 2020.

picture remains highly sensitive to assumptions on capex. We are using PLN's capex target of IDR 53.4 trillion for 2020 but note that were capex to rebound to the IDR 100.0 trillion level seen in 2018 and 2019, PLN's cash reserves would be depleted by 2022.

New Facts Demand New Analysis

The rapid deterioration of PLN's financial position should not come as a surprise to anyone who has tracked PLN's development since 2017. The company has been an enthusiastic beneficiary of Indonesia's access to USD debt and the competitive behaviour of North Asian power equipment providers—all of whom can sweeten any IPP financing with credit enhancements that draw generous funding terms. It was always up to the leadership of Indonesia's energy policymakers to anticipate and manage the risks associated with their chosen path of high reliance on baseload coal IPPs with their inflexible capacity payments and high environmental impacts.

**The rapid
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Now that PLN's financial distress is so obvious, it's time for market players to revisit the most important assumptions that will shape any policy response. COVID-19 has placed unenviable pressures on Indonesian ratepayers and policymakers have struggled to balance the needs of different interest groups. That makes it critical that investors stay focused on the issues that will shape the policy agenda, and ongoing discussion about how PLN and the power sector should be "reformed." Our research makes it clear that progress will be difficult to achieve without a more realistic discussion of the following issues:

1. **Downside Demand Risk: Time to Address Structural Changes.** PLN's pre-COVID outlook called for 4.5% unit sales growth in 2020 and a modest uptick of 4.7% in 2021. To reflect the impact of COVID on power demand, an average of PLN's new scenarios projects a demand decline of 6.0% in 2020 before seeing a rebound of 4.7% in 2021. For the 2021-2029 period, however, PLN's planners have maintained average annual growth at 5.2%, in line with their pre-COVID projections, despite much higher risks to economic growth through 2024.

This decision to stick with a status quo demand growth outlook robs PLN's forecasts of credibility. Many commentators have focused on MEMR and PLN's habit of justifying exaggerated new capacity addition plans by referencing demand growth forecasts that exceed the economy's demonstrated growth potential. They are not alone in doing this, but their track record of mis-estimating demand growth has punitive financial consequences that can no longer be ignored. Thohir's letter makes this obvious.

Table 3: PLN's New Growth Scenarios (TWh)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Avg. YoY Growth (2021-2029)
Forecast Sales (TWh)												
Draft 2020-2029 Pre-COVID	243	254	266	280	295	311	327	345	364	383	402	
Draft 2020-2029 "Pesimis"	243	219	228	241	254	269	283	298	313	328	344	
Draft 2020-2029 "Moderat"	243	228	239	252	265	281	296	311	327	343	360	
Draft 2020-2029 "Optimis"	243	238	250	265	279	296	311	328	344	361	379	
YOY % Change												
Draft 2020-2029 Pre-COVID		4.5%	4.7%	5.3%	5.4%	5.4%	5.1%	5.5%	5.5%	5.2%	5.0%	5.2%
Draft 2020-2029 "Pesimis"		-9.9%	4.1%	5.7%	5.4%	5.9%	5.2%	5.3%	5.0%	4.8%	4.9%	5.1%
Draft 2020-2029 "Moderat"		-6.2%	4.8%	5.4%	5.2%	6.0%	5.3%	5.1%	5.1%	4.9%	5.0%	5.2%
Draft 2020-2029 "Optimis"		-2.1%	5.0%	6.0%	5.3%	6.1%	5.1%	5.5%	4.9%	4.9%	5.0%	5.3%
Scenario Average		-6.0%	4.7%	5.7%	5.3%	6.0%	5.2%	5.3%	5.0%	4.9%	4.9%	5.2%

Source: PLN, *Proyeksi Perencanaan Ketenagalistrikan Melalui RUPTL, September 2020.*

What stands out in PLN's modest scenario analysis exercise is that the typical high-medium-low framing fails to address the cause of MEMR and PLN's forecasting failures. For a system that is now struggling with over-capacity in the key Jawa-Bali grid, this is a major governance issue. Many emerging markets are now seeing lower levels of new power demand growth as the energy intensity of growth falls due to more efficient industrial processes and shifts to consumer-led versus manufacturing-led growth.

Analysts should also be alert to reasons given for the sudden uptick in scenarios' unit sales growth forecast in 2024 from 5.3% to 6.0%. It seems reasonable to assume that the acceleration of demand growth in 2022 rests on the expectation that the country will be coming out from under the COVID growth shadow by then. Nevertheless, the forecast seems to imply that growth will slow with no link to underlying cyclicality. As a result, it's hard not to wonder whether the increase in the 2024 estimate is driven by other factors, such as a reluctance to acknowledge the likelihood of further excess capacity build up in the Jawa-Bali grid by the mid-2020s. The recent decision by Korea Electric Power Company (KEPCO) to invest in the controversial 2,000MW Jawa 9 & 10 coal-fired IPP could be linked to this forecasting sleight of hand.

2. **Is There a Limit to MOF Subsidies?** Based on IEEFA's estimates, subsidies and compensation to cover higher IPP payments will rise by 31.5% in 2020 to IDR 97.3 trillion (USD 6.5 billion). In the absence of tariff increases, over the next two years, the price tag will almost double to IDR 170.2 trillion (USD 11.4 billion) as new IPPs come on-line and grow to dominate PLN's operating cost structure.

Table 4: IPP Payments and Required Subsidies Move in Tandem

IDR millions	2018	2019	2020E	2021E	2022E
Yearend IPP Installed Capacity (MW)	11,215	12,205	18,353	23,558	28,204
Average Installed IPP Capacity (MW)	10,836	11,710	15,279	20,956	25,881
YoY Increase (MW)	985	874	3,569	5,677	4,926
Purchased Electricity Payments (IPPs)	84,267,611	83,563,991	109,032,463	149,540,107	184,688,597
% YoY Change	16.3%	-0.8%	30.5%	37.2%	23.5%
% of Total Operating Costs	27.3%	26.5%	33.8%	39.8%	43.7%
Total Subsidy and Compensation (IDR)	71,275,218	73,965,291	97,276,266	136,884,382	170,232,154
Total Subsidy and Compensation (USD)	\$ 4,792	\$ 4,972	\$ 6,540	\$ 9,202	\$ 11,444
% YoY Change	55.8%	3.8%	31.5%	40.7%	24.4%

Source: IEEFA estimates.

The scale of subsidies now required by PLN should be a topic of candid discussion in policy circles. The COVID-19 pandemic has delivered a costly message to governments that have been casual in addressing the impact of long-term energy subsidies or an over-reliance on IPPs with fixed cost structures.

Regional power sector regulators are looking more carefully at how effectively market operators have adjusted to the need for more flexible sources of power that can cope with the demand volatility seen in 2020. It would not be surprising to see countries burdened with long-term payment obligations for excess capacity or high cost fuels joining the Philippines in considering curtailment and carve out provisions.⁶ As power systems transition from power scarcity to over-supply, it's only natural that regulators will look for policy responses that can align financial obligations with more equitable risk sharing mechanisms.

Indonesia is fortunate that the country's economic team retains the trust of markets. This trust must be earned however. In a period of growing budget pressures and powerful competing interests, how will PLN's growing budget hole be accommodated?

In recent months, the political debate in Jakarta has featured active discussion of a range of energy sector bailout proposals—some of which were subsequently embedded in the Omnibus Law passed on October 5 2020.⁷ Notably, there has been no accompanying discussion of accountability mechanisms that will be used to control government spending relative to stated job creation and economic growth goals. For the MOF, this means that PLN's call on public funds will be hitting the budget just as other politically powerful SOEs seek to press their claim as well.

To date, the credit ratings agencies have not elevated this issue to the forefront, but resource nationalism is now being cited as a risk factor along with concerns about the performance of key institutions. This should be taken as a sign that

⁶ IEEFA Philippines. [Meralco carve-out clause means power companies, investors, bear the risk of ignoring clean energy](#). August 17, 2020.

⁷ Tempo. [Bersihkan Indonesia Coalition Suspects Conflict of Interest in Omnibus Law](#). October 9, 2020.

investors will be asking tougher questions in the future about whether Indonesia’s fiscal and monetary policy settings can accommodate the ballooning costs associated with growing energy and power subsidies.

3. **The Tariff Model is Broken:** PLN’s reliance on IPPs with fixed capacity payments has robbed PLN of any ability to manage its operating cost profile. This could not be coming at a worse time as any semblance of normal tariff-setting has been abandoned as political pressures intersect with COVID recovery efforts. The COVID crisis has cemented MOF’s position as PLN’s front-line guarantor in light of the price gap that has now opened up between current tariff norms and those that would be required to meet a traditional cost recovery model referenced by lenders.

To demonstrate the tension between PLN’s current financial needs and the tariff levels that would be required to rein in reliance on MOF’s support, we have modelled how much tariffs would need to rise for PLN to reach operating break-even on its current operating base. On IEEFA’s estimates, tariffs would have to rise by more than 30.0% just to meet PLN’s operating costs. A tariff increase of this quantum would surely test public approval. If the goal were to ensure that PLN could service its debt and fund capex, IEEFA’s estimates indicate that tariffs would need to rise more than 50% on our numbers.

Table 5: PLN Tariff Sensitivity Analysis

Effective tariff in IDR per unit (kWh)	2018	2019	2020E	2021E	2022E
Tariff Required to Reach Operating Break-even	1,273	1,246	1,355	1,509	1,622
% Increase from Actual Forecast Tariff	13.4%	10.8%	20.5%	34.1%	44.1%
Tariff Required to Reach 2015-2019 Avg Operating Income After Subsidy	1,427	1,426	1,547	1,692	1,796
% Increase from Actual Forecast Tariff	27.1%	26.8%	37.5%	50.4%	59.6%

Source: IEEFA estimates.

There are two ways to consider PLN’s unsustainable tariff problem. The first option is to simply acknowledge that Indonesian policymakers have expressed a consistent preference for meaningful general revenue financing for the power sector rather than relying on the traditional user pays model favored by the multilateral development banks and other traditional infrastructure funders.

This would be a controversial policy if made explicit but it would acknowledge the current political reality. PLN’s constitutional mandate means that it is not a traditional national power company with a narrowly defined role to just provide market-based power services. Moreover, PLN remains captive to a range of policies that ensure that other sectors’ financial needs are prioritized at PLN’s expense.

A second response to PLN’s tariff crisis is a variant of the wilful blindness strategy common in many countries. This appears to be PLN’s current strategy. In public statements, PLN’s senior officials have begun to make the case for higher tariffs by balancing increasingly sober comments about PLN’s financial challenges with new references to clean energy strategies and promises of improved service quality. Barring a crisis, however, it is hard to imagine that

PLN's PR campaigns have helped to convince a discerning public that PLN deserves more support.

4. **Cost-Cutting Has Long-term Consequences:** PLN has rightly announced its intention to preserve cash in 2020 and our forecasts include lower fuel costs and capex as a result.⁸ Moving forward, fuel costs should remain in check, but capex remains a wild card in 2021 and 2022 given the company's depleted cash reserves and negative operating cash flow profile. This creates a situation where much needed grid investment must be debt-financed. Even PLN's CEO, Zulkifli Zaini, sees this as a problem. In comments in June on PLN's financial outlook, Zaini noted that "Nearly 100% of the funds are from loans, as a banker, I know that's not healthy."

Table 6: Future Capex Could be Hurt by Operating Cash Flow Trends

IDR millions	2015	2016	2017	2018	2019	2020E	2021E	2022E
Capex	36,365,403	55,800,543	85,210,519	100,273,650	100,431,833	53,400,000		
Operating cash flow	23,881,685	(343,303)	28,571,505	(1,305,772)	15,142,445	(1,134,255)	(38,821,782)	(70,154,594)

Source: PLN and IEEFA estimates

Zaini's comments are a classic understatement of the financial challenges that PLN now faces. Having stuffed the IPP pipeline with 22.1GW IPP capacity to be delivered between now and yearend 2023, PLN must now focus on the grid capacity needed to deliver this new capacity efficiently to an already ragged system. While the Jawa-Bali grid often gets the most attention due to the pace of new capacity additions and high profile load-shedding events, PLN's IPP pipeline will require significant new grid investments in Sumatera and Kalimantan where remote large capacity facilities, such as mine mouth coal power plants, will strain the existing grid configuration.

The capex squeeze is a red flag given the fact that it will almost certainly affect plans for badly needed grid upgrades and could hurt system performance as a result. Moreover, the lack of commitment to integrating new smart-grid technologies runs the risk of embedding outdated technology in critical regional grids at precisely the time when new system design criteria should be shaping long-term system design priorities. New technologies including storage, flexible demand response, smart meters, and weather forecasting innovations should play a big role in preparing the system for more variability. Any mis-step on new grid investment would be a painful irony as PLN's September planning document rests an outdated set of norms for planning grid investments but nonetheless acknowledges that grid investment should be considered in a long-term, 30-year planning context.

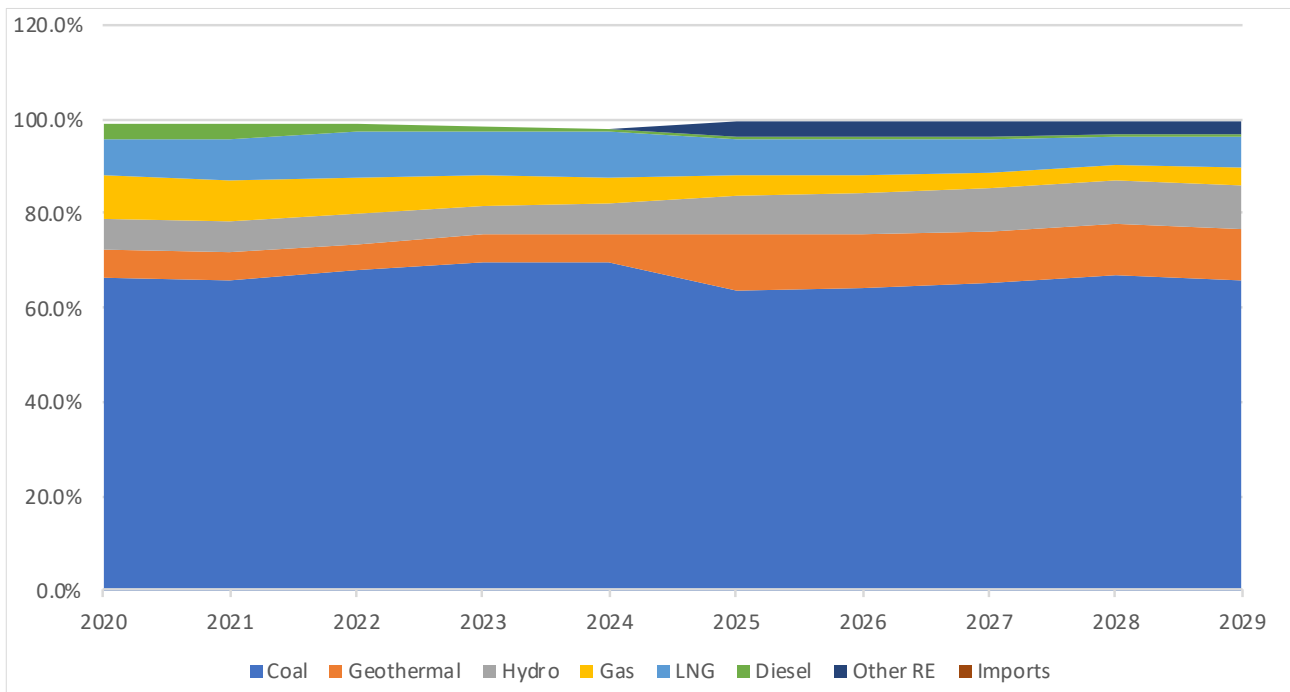
5. **The 23% RE by 2025 Target Remains Aspirational:** Despite PLN's decision to lock-in new fossil fuel baseload, senior company officials have worked hard to develop a bolt-on clean energy narrative. To date, however, PLN's strategic approach to clean energy has been distinctive in its avoidance of commitments to the type of industrial-scale wind and solar technology that has transformed

⁸ Reuters. [Indonesia state power company PLN cuts capex by nearly half this year](#). June 25, 2020.

global power markets. The current plan, as of September, shows little strategic sophistication and continues to rely on large hydro, geothermal, biomass co-firing, and only minimal contributions from new wind or solar capacity.

This plan will come as a disappointment to investors who have been hoping that the COVID crisis would be a catalyst for the type of technological and financial innovation that has helped to repair struggling power systems in other countries. Looking at the September presentation, it's clear that PLN's planning process still does not reflect global market practices and effectively rules out options for more balanced system planning. As a result, fossil fuels will still account for more than three-quarters of the energy mix for the coming decade and innovative new renewables technologies will account for no more than 3.7% during the period.

Figure 1: PLN Installed Capacity Plan



Source: PLN, *Proyeksi Perencanaan Ketenagalistrikan Melalui RUPTL, September 2020*.

For students of Indonesia's power sector, the September presentation is notable for the following assumptions:

- Mine-mouth coal and wellhead gas use are prioritized on the basis that it will add value through the use of domestic resources with no reference to associated system costs.
- Cleaner technologies, notably biomass co-firing and LNG, will be used in more remote areas.

- To deal with excess capacity, new capacity should be delayed and under-utilized units should be moved to other areas.
- PLN should develop new generation capacity only when it has the ability to finance the equity and cheap sources of funding are available; IPPs should be preferred when the amount of funding required is large and project execution risk is high.
- Least-cost generation is equated with least-cost electricity at the system level implying that grid and other system service costs are not factored into planning decisions.
- There is no acknowledgement that variable renewables can be paired with storage or other power sources and effectively “firmed.”
- Risks to the availability of stable biomass supplies could be an implementation risk for co-firing.
- Renewables are assumed to raise the risk that higher power tariffs may be required and that the government may need to provide subsidies if the BPP is not to rise. There is no discussion of optimizing procurement processes through the use of competitive auctions which are common in most jurisdictions that have deployed cost-effective renewables.

What stands out with these parameters is the willingness to ignore externalities and common strategies for addressing potential problems associated with new technologies. It is this lack of dynamism to PLN’s planning framework that raises the risk that the accelerated clean energy deployment schedule for 2025 and beyond may not be realistic. Observers of PLN’s RUPTL are familiar with the way that the list of projects and technologies intended to meet the 23% clean energy target has been subject to frequent changes. The only constant for the 23% target has been the reliance on large hydro projects. This pattern was evident in the 2019 RUPTL which featured a sudden jump of more than 2.0GW of large hydro, geothermal, and solar in 2025 in order to reach the target.

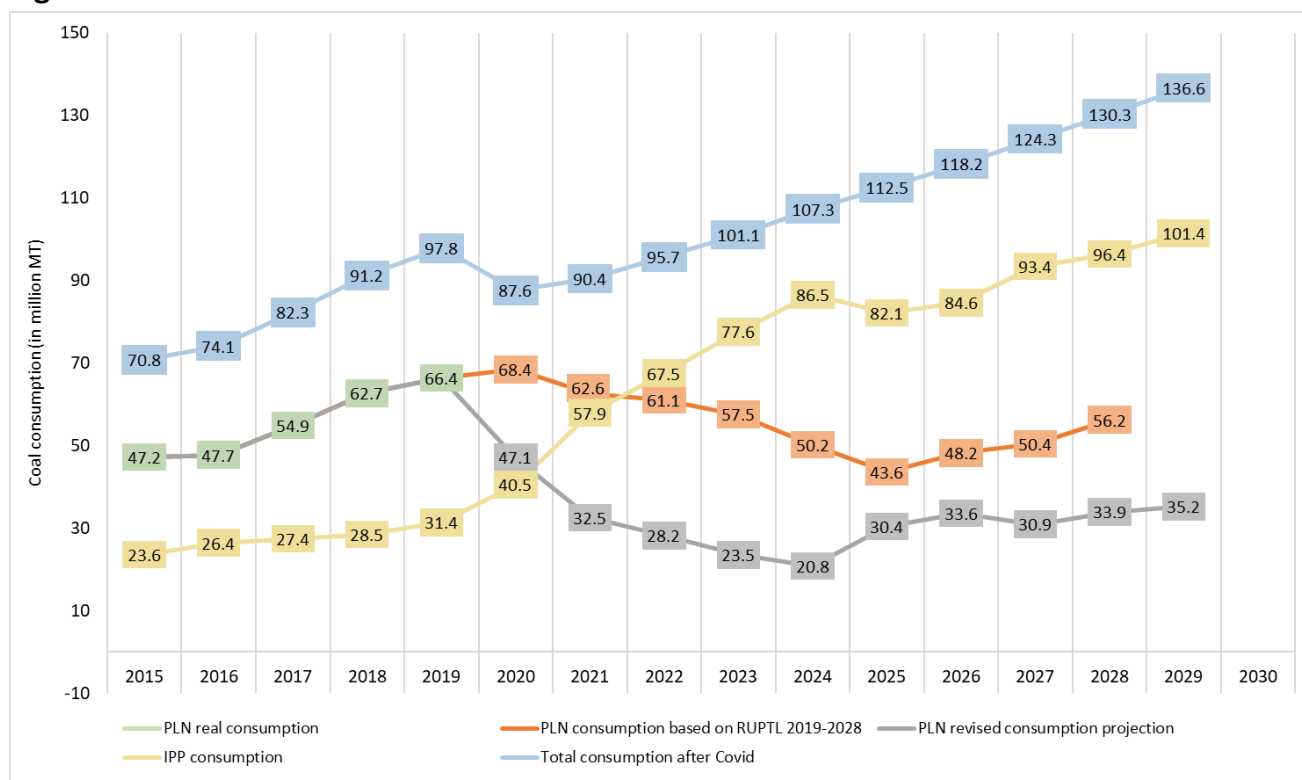
**The only constant
for the 23% target
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Why does PLN remain wedded to this backward-looking planning bias? One answer may be that PLN simply lacks the willingness to build the internal expertise needed to address a more diverse range of technology options. For example, over the past year, MEMR and PLN have devoted considerable

planning resources to exploration of biomass co-firing and waste-to-power projects all the while ignoring opportunities to engage with global funders in active dialogue about the potential for industrial scale renewables auctions. This seems surprising as it's well understood that establishing reliable biomass feedstock supply chains can be a challenging process and that co-firing often degrades operational efficiency of the units.

The new focus on biomass co-firing also raises the possibility that resource nationalism is the most likely factor in PLN's cautious approach to embracing a more diverse pathway to achieving a 23% clean energy mix. It's ironic that during the same period that PLN has only reluctantly confirmed the problems associated with the IPP program, that officials were reaching out to the coal sector sharing data on the system's future coal demand.⁹ The message was predictably a good news-bad news story. While PLN's own coal-fired generation fleet will have lower coal demand through 2024, a surge in IPP demand will ensure that domestic coal usage will rise sharply from 2021 through the balance of the decade.

Figure 2: PLN's Coal Demand Forecast



Source: PLN, *Proyeksi Kebutuhan Batu Bara PT PLN (Persero)*, June 26 2020.

This chart sends a concerning message for those global funders who have been hoping that the COVID crisis might support more constructive engagement with

⁹ Document was received from a Webinar held by the Indonesian Coal Association (APBI) on 26 June 2020. PLN Coal EVP presented the matter to Indonesian coal players.

senior officials on new clean energy funding strategies. Nothing that PLN is saying rules out the possibility of a late-night conversion if global capital markets turn their back on PLN's debt, but this chart is a reminder of why any discussion of a clean energy pathway for PLN must be accompanied by credible disclosure of the company's carbon emissions pathway.

6. **The CRAs Should Not Put Their Credibility at Risk:** PLN has maintained its access to global capital markets despite a comprehensive breakdown in the company's fundamentals. Its baseline credit score has been downgraded by Moody's to Ba3—the lowest investment grade rating. That means that the 4-notch upgrade to the final rating of Baa2 is entirely dependent up on PLN's ability to rely on credit support from the government. As a result, it's now time to ask how the ratings agencies are stress-testing the sovereign rating given PLN's steady decline.

In the past, the credit rating agencies have ritually relied on vague statements to imply that PLN's tariffing mechanism remains functional. This pattern is still in evidence despite the fact that references to any end point for the current tariff freeze are notably missing despite the suggestion that PLN's business model includes a regulated tariff. At least one ratings agency has also conflated the capacity to be delivered under the 35GW program with PLN's own spending on its own generating units and transmission and distribution infrastructure. This matters because it is PLN's decision to rely on IPPs requiring guaranteed capacity payments to implement the 35GW program that is now distorting the company's finances with long-term purchased power payments in ways that cannot be remedied with temporary capex cuts.

As the COVID-19 crisis continues to cast a pall over emerging markets and to reprice global energy markets, we expect investors to come under pressure to be more discerning in their approach to sector risks. Just six months ago gas and LNG were being hailed as the natural clean energy transition fuels, but Moody's and S&P are now forecasting a shorter and narrower window of opportunity for gas projects to compete effectively against industrial scale renewables. In response to this scenario, we expect that investors will increasingly gravitate to power sector players capable of benefitting from new renewables technologies, rather than those, like PLN, that remain locked into old polluting technologies.

We expect investors to come under pressure to be more discerning in their approach to sector risks.

The credit rating agencies are now including a discussion of environmental, social, and governance risks into their credit reports. At this stage, the analysis is

superficial, but over the course of the next year, this may change. If this were to happen, PLN's many risk factors may be seen in a different light.

What Comes Next?

The official release of the RUPTL, when it comes, seems certain to be a catalyst for a new round of re-assessment concerning PLN's financial situation. In the recent past, the most important player, the MOF, has been very discreet in tamping down any discussion of the breadth of PLN's financial problems. It's important to remember, however, that Sri Mulyani was prescient in highlighting the risks of the 35GW program and PLN's funding strategy in 2017.

PLN and MOF insiders must be prepared for the fact that unless the economy turns on a dime and public confidence rebounds at a record pace, the chances of a material tariff increase and more robust cash flow for PLN is very low for at least another 18-36 months. This means that PLN's bad financial news cycle seems likely to plague Indonesia's market positioning through 2023. The fact that debt investors have not yet responded is good news for Indonesia, but it would be irresponsible to take this somnolence for granted.

In the event that PLN's funding situation were to continue to deteriorate more rapidly than expected, senior policymakers would be wise to have a plan B in hand. This raises important questions about how sophisticated corporate finance experts would seek to restructure PLN if global capital markets were no longer willing to lend on advantageous investment grade terms.

This is a scenario that PLN and the MOF would be wise to game out well in advance of any market disruption. Traditional strategies that focus on creating a "good" asset that could retain third-party credit support and a purely state-funded entity asset would naturally be a focus. This would doubtless drive a thorough strategic review as well as a thorough audit of PLN's operations in the key Jawa-Bali grid and the type of negotiations with stakeholders that could help Indonesia avert greater risk in the future.

PLN's bad financial news cycle seems likely to plague Indonesia's market positioning through 2023.

Lessons from the power sector restructuring work done in China, South Korea, and India could be relevant to some of the challenges that PLN now faces. One common feature of most restructuring processes is the desire to streamline operations and shed costs that do relate to the core organizational mission. This can mean that non-market subsidies are acknowledged and allocated to other parties.

One consistent focus in power sector restructuring exercises has been the effort to realize more efficient market-based outcomes either in the procurement of new capacity or in the operation of more mature wholesale or retail markets. In capital constrained markets that must rely on project finance structures, the use of PPAs

with fixed payment structures can result in sub-optimal market outcomes and stranded assets when new technology delivers more cost-effective power. Then it can be important to identify the right sovereign entity to bundle and manage payment obligations that may interfere with lowest cost system operations. And finally, in light of the importance of new renewable technologies and grid design issues, any restructuring should consider the importance of new capacity procurement and market structures that will enhance competition and provide incentives for system services that can displace traditional sources of baseload and peaking power.

If there is one final lesson to learn about the financial impact of energy transition, it's that the only winners are those who learn to reposition any assets that will be subject to stranding risk and those that will be a long-term source of value in a more diverse energy system of the future. PLN has been instructed to optimize the use of coal and to rely on access to global sources of capital that are now in the process of turning away from coal. It may now be MOF's unenviable task to start assessing the risk that PLN's poor strategic positioning could begin to threaten the credibility of solid policies that support the sovereign credit.

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