

Financial Feasibility and Risk Analysis of a 4-Star Hotel Development at PT Bukit Asam's Wisma Ombilin

Financial Feasibility
and Risk
Management

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ABSTRACT

This study proposes transforming PT Bukit Asam's underutilized Wisma Ombilin land into a modern 4-star hotel to diversify revenue, reduce coal dependency, and align with sustainability goals. Located in Padang City, the project aims to boost economic value, create jobs, and support local growth. Combining qualitative and quantitative methods, the research analyzes Padang's hotel market, financial feasibility, and project risks. Market analysis reveals strong demand for 4-star hotels, with post-pandemic occupancy rates and room prices surpassing pre-pandemic levels. Financial modeling estimates a Net Present Value (NPV) of RP 188.38 billion, an Internal Rate of Return (IRR) of 16.38%, and a payback period of 10.9 years, indicating solid profitability. Sensitivity analysis identifies key risks related to room rates, occupancy, and interest rates, recommending dynamic pricing and financing strategies for mitigation. Strategic risk management includes disaster-resilient design and operational efficiencies. The project supports PTBA's transition from coal reliance, improves ESG performance, and enhances competitiveness. With strong market potential and effective risk controls, the hotel development offers sustainable returns and stakeholder value, warranting progression to detailed planning and financing.

Keywords: Financial Feasibility, Hotel Development, PT Bukit Asam, Revenue Diversification, Risk Management.

ABSTRAK

Studi ini mengusulkan untuk mengubah lahan Wisma Ombilin milik PT Bukit Asam yang kurang dimanfaatkan menjadi hotel bintang 4 modern untuk mendiversifikasi pendapatan, mengurangi ketergantungan pada batu bara, dan menyelaraskan dengan tujuan keberlanjutan. Berlokasi di Kota Padang, proyek ini bertujuan untuk meningkatkan nilai ekonomi, menciptakan lapangan kerja, dan mendukung pertumbuhan lokal. Dengan menggabungkan metode kualitatif dan kuantitatif, penelitian ini menganalisis pasar hotel Padang, kelayakan finansial, dan risiko proyek. Analisis pasar mengungkapkan permintaan yang kuat untuk hotel bintang 4, dengan tingkat hunian pascapandemi dan harga kamar melampaui tingkat pra-pandemi. Pemodelan keuangan memperkirakan Nilai Sekarang Bersih (NPV) sebesar RP 188,38 miliar, Tingkat Pengembalian Internal (IRR) sebesar 16,38%, dan periode pengembalian modal 10,9 tahun, yang menunjukkan profitabilitas yang solid. Analisis sensitivitas mengidentifikasi risiko utama yang terkait dengan tarif kamar, hunian, dan suku bunga, merekomendasikan strategi penetapan harga dan pembiayaan yang dinamis untuk mitigasi. Manajemen risiko strategis mencakup desain yang tahan bencana dan efisiensi operasional. Proyek ini mendukung transisi PTBA dari ketergantungan pada batu bara, meningkatkan kinerja ESG, dan meningkatkan daya saing. Dengan potensi pasar yang kuat dan pengendalian risiko yang efektif, pembangunan hotel ini menawarkan keuntungan

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yang berkelanjutan dan nilai bagi pemangku kepentingan, yang menjamin kemajuan menuju perencanaan dan pembiayaan yang terperinci.

Kata kunci: *Kelayakan Finansial, Pengembangan Hotel, PT Bukit Asam, Diversifikasi Pendapatan, Manajemen Risiko.*

INTRODUCTION

Idle land assets represent a critical challenge in Indonesia, where significant portions of land remain underutilized, resulting in substantial economic losses. Research indicates that ineffective management of these assets, both by government and private entities, leads to wasted resources and missed opportunities for economic growth (Ratmono & Rochmawati, 2018). The mismanagement often stems from inadequate asset inventory practices and a lack of awareness regarding the importance of maintenance and strategic utilization (Wicaksana et al., 2021). For state-owned enterprises like PT Bukit Asam (PTBA), a coal mining company, underutilized land assets such as Wisma Ombilin in Padang City exemplify this issue. Wisma Ombilin, a low-productivity accommodation facility, generates minimal revenue (RP 40,000-RP 200,000/night) due to outdated infrastructure and poor asset turnover compared to PTBA's other assets like mines and machinery. The urgency to optimize such assets is heightened by global shifts in energy markets, particularly following the Glasgow Climate Pact (2021), which advocates for phasing out coal and reducing fossil fuel dependency. This transition pressures PTBA to diversify its revenue streams beyond coal, leveraging its land assets to ensure long-term sustainability and economic resilience.

The core problem lies in the suboptimal use of PTBA's land assets, particularly Wisma Ombilin, which fails to contribute significantly to the company's revenue or regional economic development. The facility's outdated infrastructure and low pricing reflect inefficiencies in asset management, limiting its potential as a productive resource. Additionally, PTBA faces external challenges due to declining global coal demand driven by stricter carbon emission policies, shifting investor preferences toward sustainable sectors, and market uncertainties tied to the energy transition (Glasgow Climate Pact, 2021). These factors threaten PTBA's financial stability, as its revenue has historically depended heavily on coal sales. The lack of strategic diversification and underutilization of assets like Wisma Ombilin exacerbate the risk of reduced competitiveness in a rapidly evolving energy landscape.

Several factors contribute to the underutilization of PTBA's land assets. First, inconsistent regulations and insufficient infrastructure support hinder effective asset management and development (Murti, 2019). Second, a lack of comprehensive asset inventory and maintenance practices limits the ability to identify and optimize underperforming assets (Wicaksana et al., 2021). Third, PTBA's heavy reliance on coal revenue makes it vulnerable to global energy transition policies, necessitating a shift toward alternative revenue sources. Finally, the strategic location of assets like Wisma Ombilin in Padang City, near business and tourism hubs, remains untapped due to a lack of investment in modernizing infrastructure or reimagining asset use (Liu & Hu, 2022; Puciato et al., 2017). These factors collectively underscore the need for innovative strategies to transform idle assets into productive ventures.

Existing studies emphasize the importance of optimizing fixed assets for economic efficiency (Arifin et al., 2023), particularly in government sectors (Asman & Akram, 2016; Nurdiana et al., 2016; Antoh, 2017; Demetouw et al., 2017; Mulyanto et al., 2023). However, limited attention has been paid to the strategic transformation of underutilized corporate assets into high-return ventures such as hotels, especially within state-owned enterprises in transition industries like coal mining (Ratmono & Rochmawati, 2018; Napierala, 2019; Wicaksana et al., 2021). The hotel industry has been extensively studied for its profitability and economic benefits (Dimitrić et al., 2019; Dogru et al., 2020; Bacik et al., 2020; Dogru et al., 2023; Soni et al., 2023; Karanović, 2023; Sala-Ríos, 2024), but applications to asset optimization in energy-transitioning companies are rare.

Furthermore, while literature explores determinants of profitability in hospitality (Youssef et al., 2022; Soni et al., 2022; Pimić et al., 2024), sustainable innovation (Verma & Chandra, 2018; Hsiao et al., 2018; Yadav et al., 2019; Kalyar et al., 2021), and the roles of ICT and intellectual capital (Bontis et al., 2015; Melián-González & Bulchand-Gidumal, 2016; Gonzalez et al., 2020), no study integrates these into a coherent framework for repurposing land assets in SOEs. This gap is stark in Indonesia, where coal-based SOEs like PTBA must align with global sustainability demands. Transforming Wisma Ombilin into a hotel offers a novel solution to diversify revenue and foster regional growth. Therefore, this study proposes an investment strategy combining economic viability, environmental responsiveness, and corporate competitiveness (Raguseo & Vitari, 2017; Menicucci, 2018; Jiang & Gao, 2019; Lim & Ok, 2021; Chen et al., 2021; Silva et al., 2023; Cheng et al., 2023; Tetteh et al., 2025).

This study aims to propose a strategic transformation of PTBA's underutilized land asset, Wisma Ombilin, into a modern hotel to diversify revenue, reduce coal dependency, and align with global sustainability trends. By leveraging PTBA's corporate capacity and the asset's strategic location, the project seeks to enhance economic value, create jobs, and stimulate local economic growth in Padang City. The research will explore the feasibility of hotel investment, assess its potential ROI, and evaluate its impact on PTBA's competitiveness and stakeholder returns in the context of the energy transition.

LITERATURE REVIEW

Challenges in Managing Idle Land Assets in Indonesia

Idle land assets in Indonesia present significant economic challenges due to widespread underutilization, leading to substantial resource wastage and missed opportunities for growth. Ratmono and Rochmawati (2018) highlight that ineffective management practices in both public and private sectors result in inefficiencies, with many land assets remaining unused or poorly managed. This issue is primarily driven by a lack of awareness regarding the importance of proper asset inventory and maintenance, which hinders effective utilization and strategic planning (Wicaksana et al., 2021). Additionally, inconsistent regulations and inadequate infrastructure create significant barriers to developing these assets, further limiting their economic potential (Murti, 2019). Arifin et al. (2023) emphasize that enhanced asset management can significantly improve efficiency and productivity, transforming idle land into valuable resources that drive economic activity. For example, optimized land use can support infrastructure projects, attract investment, and create jobs, contributing to regional and national economic growth. Addressing these challenges requires comprehensive reforms, including consistent regulatory frameworks, robust infrastructure development, and increased awareness of asset management practices. Effective inventory systems and policy coordination are crucial to identifying underutilized assets and unlocking their potential. By overcoming these obstacles, Indonesia can maximize the economic value of idle land, fostering sustainable development and ensuring long-term economic benefits. Strategic interventions, such as investing in digital asset management tools and promoting public-private partnerships, are essential to align land use with national development goals, ensuring that underutilized assets contribute meaningfully to economic progress and sustainability.

Hotel Investment as an Opportunity

The optimization of underutilized land assets through hotel investment offers a robust theoretical framework for addressing economic inefficiencies, particularly for firms like PT Bukit Asam (PTBA) facing pressures from global sustainability shifts, such as the Glasgow Climate Pact (2021). Asset management theory emphasizes maximizing the value of underutilized resources to enhance economic efficiency and stakeholder benefits (Napierala, 2019). For PTBA, heavily reliant on coal revenue, diversifying through strategic asset development is critical to mitigate risks from declining coal demand (Arifin et al., 2023). Wisma Ombilin, a low-performing accommodation facility in Padang City,

exemplifies an underutilized asset with outdated infrastructure and poor financial returns. Location theory supports hotel investment, as proximity to business and tourism hubs enhances occupancy and profitability (Puciato et al., 2017; Yang et al., 2012; Liu & Hu, 2022). Strategic management literature highlights PTBA's coRPorate scale as a source of economies of scale, reducing costs and enhancing competitiveness (Dimitrić et al., 2019). Real options theory further underscores the flexibility of hotel investments, allowing risk mitigation through adaptive timing (Ma & Zhai, 2016).

Hotel development also aligns with stakeholder theory, generating local employment, economic growth, and improved coRPorate image (Tavitiyaman et al., 2012; Dogru et al., 2020). Stakeholder theory further supports this investment, suggesting that repuRPosing the asset can stimulate local employment, enhance regional economic activity, and improve PTBA's public image and ESG performance (Tavitiyaman et al., 2012), hotel investment returns (Dimitrić et al., 2019; Soni et al., 2022; Karanović, 2023) and factors influencing profitability (Youssef et al., 2022; Sala-Ríos, 2024; Menicucci, 2018).

RESEARCH METHOD

This research aims to understand variables influencing hotel development, evaluate relationships between them, and assess the feasibility of hotel development on PTBA's land asset in Padang, West Sumatra. The study combines qualitative and quantitative methods. Qualitative research analyzes market data to identify opportunities and threats related to hotel development in Padang. Quantitative research evaluates economic viability using numerical data to build a financial model. Data collection includes primary and secondary sources, verified for accuracy. Market analysis of Padang's hotel industry informs the financial model, which calculates key parameters (NPV, IRR, Payback Period). Risk and sensitivity analyses follow to assess confidence and risk tolerance, concluding with feasibility recommendations.

Data is gathered systematically from published reports, journals, government publications, and financial statements to answer research questions and test hypotheses. Industry reports provide market size, growth trends, and competitive insights. Government data includes tourism statistics and regulatory frameworks. Academic literature offers theoretical frameworks for hotel investment and asset optimization. Financial reports from existing hotels in Padang inform operational benchmarks. Collected data encompasses project scope, operational details, and economic parameters (interest, tax, depreciation). This ensures robust input for market viability and financial feasibility assessments.

Table 1. Capital Investment Feasibility and Sensitivity Analysis Metrics

| Analysis Type | Method/Metric | Acceptance Criteria / Focus |
|-----------------------|---------------------------------|--|
| Quantitative Analysis | Net Present Value (NPV) | Accept project if NPV > 0 |
| | Internal Rate of Return (IRR) | Accept project if IRR > hurdle rate |
| | Discounted Payback Period (DPP) | DPP must occur within project lifetime |
| | Profitability Index (PI) | Accept project if PI > 1 |
| Sensitivity Analysis | Inflation Rates | Evaluates impact on costs and demand |
| | Occupancy Rates | Tests hotel rooms, F&B, and banquet event bookings |
| | Pricing Strategies | Includes room rates, F&B prices, and banquet fees |
| | Direct Material/Labor Costs | Covers costs for rooms, F&B, and events |
| | Interest Rates | Assesses financing cost sensitivity |

The analysis identifies critical risks, guiding PTBA to optimize pricing, cost control, and demand forecasting for project resilience.

RESULTS

An investment analysis of PTBA's asset, Wisma Ombilin, located in Padang City, was conducted due to its low productivity. Inaugurated on September 19, 1987, Wisma Ombilin currently serves as a guesthouse for PTBA employees, retirees, and their families for official and medical purposes. The asset includes land, three residential mess buildings (Antrasit, Lignita, Bituminusa), a generator house, water tower, fences, and paved yards. Based on a 2024 appraisal, the total fair value of these assets is RP 15.68 billion.

The facility has 22 rooms with variable rates depending on room type and guest status. Employees and retirees receive a 50% discount. Over the past year, Wisma Ombilin generated RP 297.52 million in revenue. This results in an asset turnover of only 0.0195—far below the company's average turnover of 0.9150, based on PTBA's 2023 financial report. Given this low asset productivity, a property development assessment is deemed necessary. Strategically located on Jalan HOS Cokroaminoto, Padang, the 2,079 m² site offers strong accessibility and proximity to key destinations such as Padang Beach, Chinatown, and government offices. Surrounded by commercial and service establishments, Wisma Ombilin holds potential for more productive real estate development (Figure 1).

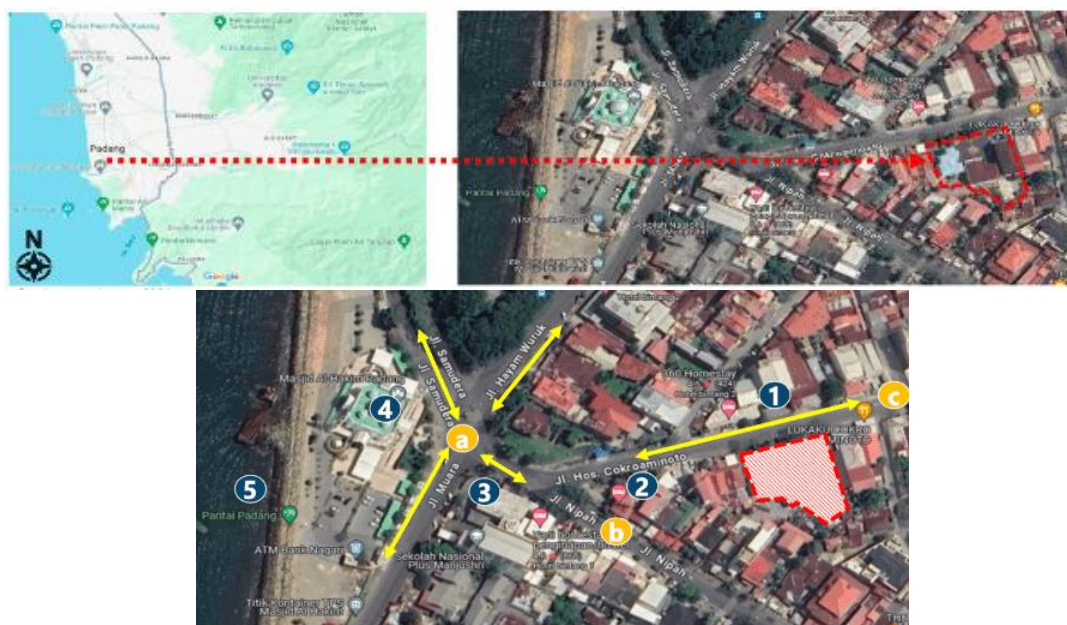


Figure 1. Wisma Ombilin Location and Accessibility

Wisma Ombilin is accessible via two-way roads along Jalan HOS Cokroaminoto, a 14-meter-wide secondary arterial road. Main access routes include directions from Padang Beach, Al-Hakim Mosque roundabout, Siti Nurbaya Bridge, Jalan Nipah, and Padang's six-way intersection, offering easy reach to nearby tourist destinations (Table 2).

Table 2. Location and Accessibility of Wisma Ombilin

| No. | Distance | Travel Time | Description |
|-----|----------|-------------|-----------------------------|
| 1 | - | - | Tzu Chi Buddhist Foundation |
| 2 | ± 90 m | ± 2 minutes | Berok Nipah Ward Office |
| 3 | ± 200 m | ± 3 minutes | Warman Buddhist Temple |
| 4 | ± 210 m | ± 3 minutes | Al-Hakim Mosque |
| 5 | ± 250 m | ± 5 minutes | Padang Beach |

The development of the Wisma Ombilin area is subject to legal constraints set by central and local government regulations, particularly those concerning Building Use Rights (*Hak Guna Bangunan* or HGB). The HGB for Wisma Ombilin, held by PT

Tambang Batubara Bukit Asam (Persero), was issued on May 21, 2005, for a 20-year term and will expire in 2025. Under Government Regulation No. 18 of 2021, HGB on state or managed land may be granted for up to 30 years, extended for 20 years, and renewed for another 30 years. This allows Wisma Ombilin to potentially renew its HGB for an additional 30 years. The property spans 2,079 m², located within the Trade and Services Zone (K3 sub-zone) as per Padang City's Detailed Spatial Plan 2023–2043 and Mayoral Regulation No. 5 of 2023. Development parameters include a maximum building coverage ratio of 60%, floor area ratio of 6, and a maximum height of 10 floors. The minimum green open space coefficient is 20%, with a basement allowance of 60%. Development of Star Hotel functions is permitted, subject to environmental approvals such as Environmental Impact Assessment and other environmental requirements.

Wisma Ombilin holds strong potential due to its highly strategic location in Padang, with close proximity to several major tourist attractions including Padang Beach, the Siti Nurbaya Bridge, Adityawarman Museum, and Chinatown. The site is also near the city center and government administrative areas, making it attractive for both leisure and business travelers. Accessibility is a key advantage, supported by various road connections and a vibrant surrounding area that includes restaurants, cafes, banking institutions, government offices, and places of worship such as the Warman Buddhist Temple and Al-Hakim Mosque. The land is situated in a K-3 zoning area (Trade and Services), providing regulatory support for hotel development, particularly in the Star Hotel category. These positive internal factors represent the Strengths (S) in a SWOT analysis—an evaluation tool used to assess a project's internal strengths and weaknesses, as well as external opportunities and threats (Table 2).

However, the property faces certain internal limitations or Weaknesses (W). Its location just ±250 meters from Padang Beach places it in a high-risk tsunami zone, as identified in Regional Regulation No. 3 of 2019. The land also lies approximately 50–75 cm below the road surface, which poses a potential flood risk and would require elevation adjustments in the construction plan, thereby increasing development costs. Moreover, despite its proximity to the coast, the property lacks direct access or clear sea views, reducing its potential to offer premium beachfront room pricing.

From the external environment, there are promising Opportunities (O). PT Bukit Asam Tbk can optimize the asset through partnerships with credible and trusted hotel brands, especially given the limited number of national or international chain-operated 3 and 4-star hotels in Padang. The city's growing tourism sector, driven by natural and cultural attractions, presents further chances to increase hotel occupancy and revenue. Collaborating with local governments and stakeholders can boost property visibility, while offering services such as food and beverage, spa treatments, and event spaces may diversify income sources.

Despite these prospects, several external Threats (T) could impact investment performance. Competition in Average Room Rate (ARR) among 3 and 4-star hotels—especially those used for meetings, incentives, conventions, and exhibitions (MICE)—can create pricing pressure. Existing hotels may already have loyal customer bases. Moreover, economic factors like recessions or rising fuel prices may weaken consumer spending. Natural disasters such as earthquakes and tsunamis, common in Padang, also pose serious risks to hotel operations and market demand.

Table 3. SWOT Analysis

| Category | Explanation |
|-------------------|--|
| Strengths (S) | Internal advantages such as strategic location, excellent accessibility, diverse surrounding facilities, and suitable zoning for hotel use. |
| Weaknesses (W) | Internal challenges including tsunami risk, low land elevation requiring costly development adjustments, and lack of sea view access. |
| Opportunities (O) | External chances to grow, such as tourism development, limited competition from branded hotels, and the potential for service diversification. |
| Threats (T) | External risks like strong competitors, economic uncertainty, and vulnerability to natural disasters like earthquakes and tsunamis. |

Moreover, to conduct a thorough Product and Market Analysis, it is important to note that in 2023, the hotel landscape in Padang City was predominantly composed of non-star accommodations. Among the starred hotels, 3-star hotels represented the largest portion, accounting for 12% of the overall market. While non-starred hotels offered basic lodging, their lower market performance compared to starred hotels significantly influenced the choice to explore the development potential of a 4-star hotel in the Wisma Ombilin area.

The Room Occupancy Rate (ROR) in Padang reflects a clear distinction in market dynamics between hotel classes. As of Q1 2024, starred hotels reported an average occupancy rate of 36.78%, while non-starred hotels only reached 17.71%. This gap underscores the stronger market appeal and sustainability of starred hotels. Though there was a decline during the peak of the COVID-19 pandemic in 2020, the occupancy rate of starred hotels has steadily recovered since 2021, showing positive trends aligned with the increase in tourism.

In terms of pricing, 4-star hotels in Padang have rebounded more effectively than 3-star hotels. The Average Room Rate (ARR) for 4-star hotels returned to pre-pandemic levels by 2023, while 3-star hotels have yet to recover their 2019 pricing benchmarks. The ARR trend from 2019 to 2023 shows that 4-star hotels offer greater pricing stability during economic downturns and display stronger growth post-crisis. This pricing resilience, combined with superior facilities, results in a higher revenue-generating potential for 4-star properties.

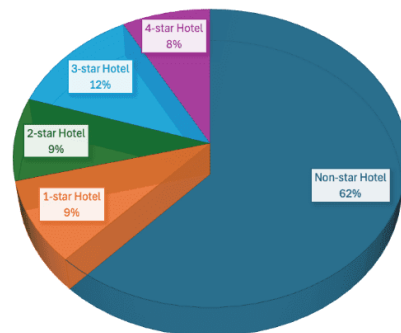


Figure 1. Hotel Room Supply in Padang City (2023)

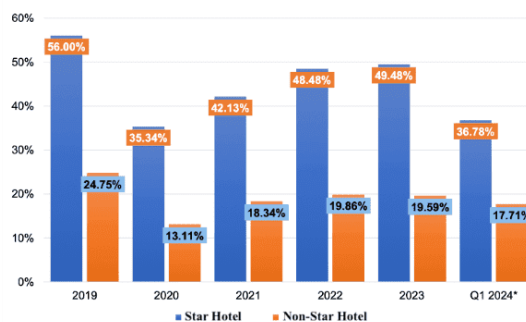


Figure 2. Occupancy Rate of Star and Non-Star Hotels (2019–Q1 2024)

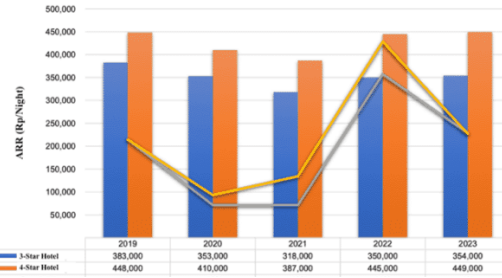


Figure 3. ARR Trends of 3 and 4-Star Hotels in Padang City (2019-2023)

Furthermore, to conduct occupancy trends in Padang which also favor 4-star hotels. Both 3-star and 4-star hotels have reached or exceeded 2019 occupancy levels by 2023, but 4-star hotels continue to exhibit upward momentum. In contrast, 3-star hotel occupancy slightly declined due to the shift of government-related events to higher-class hotels, reinforcing the competitive advantage of 4-star establishments. Supporting this demand is the consistent increase in tourist arrivals, growing from 2.3 million in 2011 to over 3.6 million in 2023, translating to an annual growth rate of approximately 3.95%.

In the current competitive landscape, Padang City hosts 9 four-star hotels and 7 three-star hotels, totaling 1,545 and 702 rooms respectively. These properties vary in age, with some dating back to 1971 and others as recent as 2021. When comparing the supply and performance of these hotels, several key indicators highlight the dominance of the 4-star segment. The average ARR for 4-star hotels in Q2 2024 ranges between RP 428,000 to RP 558,000, with an overall average of RP 505,300 and an average occupancy rate of 65.24%. In comparison, 3-star hotels have a lower ARR range of RP 313,000 to RP 517,000, averaging RP 395,000 and an occupancy rate of 61%.

A crucial contributor to this demand is the MICE (Meetings, Incentives, Conferences, Exhibitions) sector, largely driven by government institutions and business entities. Hotel marketing personnel note a significant increase in MICE activity from April through December, following the Eid al-Fitr holidays. This seasonal surge heavily favors higher-tier hotels due to their facilities and service standards, which are better suited for hosting professional and official events. Given these observations, 4-star hotels clearly outperform 3-star hotels in both ARR and occupancy, making them a more attractive investment option. Their premium service quality, stronger brand appeal, better guest experiences, and advantageous market positioning allow them to capture more lucrative segments, particularly in the business and government sectors.



Figure 4. 3 and 4-Star Hotel Occupancy Trends in Padang City (2019-2023)

The analysis of the HGB Wisma Ombilin site on Figure 6 and Table 4 provides the basis for planning a 4-star hotel development aligned with regulatory limits and market demands in Padang City. The Gross Floor Area (GFA) and maximum building levels were calculated to comply with zoning regulations, while basement floors are incorporated to fulfill parking requirements. A ballroom space is also included to support

MICE (Meetings, Incentives, Conferences, and Exhibitions) activities, which are significant revenue drivers in the region. The allocation of space balances event facilities with hotel rooms and ancillary services, ensuring operational efficiency and adherence to 4-star standards.

Table 4. Hotel Supply, Average Room Rate and Occupancy Rate

| Stars | Hotel | Number of Room | Est ARR (RP) | OR |
|---------|------------------|----------------|--------------|-----|
| 3-Stars | Ibis | 168 | 415,000 | 80% |
| | Whiz Prime | 136 | 313,000 | 65% |
| | d'Ox Ville | 29 | 405,000 | 40% |
| | Daima Hotel | 93 | 384,000 | 50% |
| | Fave Hotel Olo | 91 | 381,000 | 55% |
| | Ocean Beach | 88 | 517,000 | 50% |
| | Pangeran City | 97 | 386,000 | 55% |
| 4-Stars | Truntum | 168 | 529,000 | 78% |
| | Mercure | 146 | 554,000 | 83% |
| | Santika Premiere | 250 | 558,000 | 80% |
| | Pangeran Beach | 181 | 532,000 | 70% |
| | The ZHM Premiere | 208 | 543,000 | 80% |
| | Bumi Minang | 102 | 440,000 | 30% |
| | Rocky Plaza | 171 | 444,000 | 40% |
| | Grand Basko | 180 | 455,000 | 60% |
| | The Axana | 139 | 428,000 | 40% |

Table 5. Capital Cost and Space Allocation Summary

| Allocation | Amount | Area (m ²) | Capital Costs and Rates | Value (in million RP) |
|--|--------|------------------------|---|-----------------------|
| Building | | 1,247.4 | Building Construction including FF&E (RP/room) | 1,050 |
| GFA | | 9,979.2 | Basement Construction Cost (RP/m ²) | 6 |
| Floors | | 8 | Business licensing (% of total construction) | 1.00% |
| Lobby | | 200 | Construction cost increase (% per year) | 2.50% |
| Restaurant | | 747.4 | VAT (effective 2025) | 12% |
| Office | | 150 | | |
| Gym | | 150 | | |
| Ballroom | | 1,000 | | |
| Basement Area | | 3,742 | | |
| Basement Floors | | 3 | | |
| Other Areas (corridors, etc.) | | 3,081.8 | | |
| Rooms: | | | | |
| Suite | 18 | 50 | | |
| Deluxe | 60 | 30 | | |
| Superior | 78 | 25 | | |
| Total Estimated Capital Cost (2026-2027) | | | | 213,868 |

Using international hotel industry benchmarks for minimum GFA per room, the project estimates the number of rooms feasible within the planned space. The hotel will feature 18 suite rooms (50 m² each), 60 deluxe rooms (30 m² each), and 78 superior rooms (25 m² each), alongside other essential areas such as corridors, service zones, lifts, and emergency stairs. The total GFA is approximately 9,979 m² spread over 8 floors, with additional basement areas covering 3,742 m² across three basement floors.

Financially, the capital structure follows typical industry ratios of 65% debt and 35% equity. Long-term loans carry an average interest rate of 10.05%, while short-term loans, used to cover operational gaps, have a 7.27% interest rate. The company's cost of equity stands at 8.67%. Using these parameters and factoring in corporate tax, the Weighted Average Cost of Capital (WACC) is calculated at 8.13%. Given MIND ID's policy that

investments must yield at least 3% above WACC, the required return for this project is set at 11.13%.

$$WACC = (Wd \times Cd \times (1 - TR)) + (We \times Ce)$$

$$WACC = (65\% \times 10.05\% \times (-22\%)) + (35\% \times 8.67\%) = \mathbf{8.13\%}$$

$$Required\ Return = WACC + 3\% = \mathbf{11.13\%}$$

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The capital cost estimates on Table 5 include building construction with FF&E, basement construction, business licensing, VAT at 12% effective 2025, and annual construction cost increases of 2.5%. Based on these, the total projected capital expenditure for 2026-2027 is approximately RP 214 billion, with phased construction targeting basement and partial building completion in 2026 and the remainder plus licensing in 2027.

For the cash flow analysis, this study examines the financial performance of PTBA's hotel investment over a 2-year construction phase followed by a 30-year operational period. This analysis serves as the foundation for calculating critical financial indicators such as Net Present Value (NPV), Internal Rate of Return (IRR), and payback period. Cash inflows comprise projected revenues from hotel rooms, food and beverage (F&B), and banquet services. Conversely, cash outflows include costs of goods sold (COGS), selling expenses, general and administrative (G&A) expenses, basic management and incentive fees, interest expenses, and tax obligations. After determining cash inflows and outflows, Free Cash Flow to the Firm (FCFF) is calculated by subtracting total outflows from inflows. Additionally, a terminal cash flow is considered in the 30th year to account for the asset's residual value. To evaluate the project's financial viability, these annual free cash flows are discounted to their present values using an appropriate discount rate. The analysis yields an NPV of RP 188.38 billion, indicating substantial value creation. The IRR stands at 16.38%, exceeding the project's hurdle rate of 11.13%, while the payback period is approximately 10.94 years. A profitability index (PI) of 1.31 further confirms the project's financial attractiveness.

Table 6. Category with the highest level of sensitivity to NPV

| Category | Percentage |
|--|------------|
| Price per Unit Realization for Hotel Room | 54.45% |
| Quantity Sold Realization for Hotel Room | 44.97% |
| Long-Term Debt Interest Rate | 45.64% |
| Price per Unit Realization for Banquet Event | 21.88% |
| Quantity Sold Realization for Banquet Event | 12.60% |
| Price per Unit Realization for F&B | 10.89% |
| Direct Material for Hotel Room | 10.50% |
| Inflation Rate | 10.56% |
| Direct Material for Banquet Event | 6.96% |
| Quantity Sold Realization for F&B | 6.27% |
| Direct Material for F&B | 3.46% |
| Direct Labor for Hotel Room | 2.82% |
| Direct Labor for F&B | 1.80% |

The analysis of the project's sensitivity and risk profile on Table 6 and 7 reveals important insights into its financial viability. The highest sensitivity to net present value (NPV) is linked primarily to the price per unit realization for hotel rooms, which exhibits a swing percentage of 54.45%, followed closely by the interest rate on long-term debt at 45.64% and the quantity sold realization for hotel rooms at 44.97%. These factors highlight the critical impact that room pricing, debt costs, and occupancy levels have on the project's profitability. Other variables such as the price per unit realization for banquet events and food and beverage (F&B) services show lower but still notable sensitivity, while direct material and labor costs contribute less significantly to NPV fluctuations. The Monte Carlo simulation further illustrates the range of possible outcomes, with NPV values spanning from a potential loss of RP 274,674.02 million to a gain of RP

1,140,062.56 million. The average expected NPV stands at RP 210,920.82 million, suggesting a generally positive outlook for the project. However, there remains a 12.80% probability of a negative NPV, emphasizing some risk of loss. The distribution of outcomes is moderately right-skewed and exhibits a higher peak than a normal distribution, indicating a slight tendency toward better-than-average results but also reflecting variability. Overall, while the project tends to be profitable, careful attention to pricing, sales volume, and financing costs is essential to managing its risks effectively.

Table 7. Monte Carlo Simulation

| Parameter | Value |
|---------------------------------|-----------------|
| Min (in million) | (RP 274,674.02) |
| Max (in million) | RP 1,140,062.56 |
| Mean (in million) | RP 210,920.82 |
| Standard Deviation (in million) | RP 185,670.14 |
| Median (in million) | RP 191,617.17 |
| Kurtosis | 0.75 |
| Skewness | 0.60 |
| Prob NPV<0 | 12.80% |
| Prob NPV>0 | 87.20% |
| Prob NPV> average | 44.95% |

Moreover, for risk analysis on Table 8, variables were categorized by their sensitivity impact on NPV namely high sensitivity (Above 45%), medium sensitivity (6%–22%), and low Sensitivity (Below 4%). This classification guides prioritization in risk management efforts, ensuring focus on the most impactful factors. Next, for risk mitigation, tailored strategies address each sensitivity category, balancing effort and resources with expected risk impact. Below is a combined table summarizing mitigation measures for high, medium, and low-risk categories.

DISCUSSION

Table 8. Risk Sensitivity and Mitigation Plan

| Risk Category | Risk Mitigation Alternatives | | Specific Mitigation Actions |
|------------------------------|---|----------|---|
| High Sensitivity (Above 45%) | Price per Realization for Hotel Room | Unit for | Implement dynamic pricing- Conduct competitive analysis- Offer special packages or loyalty programs |
| | Quantity Sold for Hotel Room | for | Improve digital marketing- Diversify target markets- Enhance service quality |
| | Long-Term Interest Rate | Debt | Secure fixed-rate loans- Hedge interest rates- Evaluate alternative financing |
| Medium Sensitivity (6%–22%) | Price per Realization for Banquet Event | Unit for | Competitive pricing- Offer special packages or discounts |
| | Quantity Sold for Banquet Event | for | Increase marketing- Add amenities and services |
| | Price per Realization for F&B | Unit for | Regular menu price analysis- Offer package deals/promotions |
| | Direct Material for Hotel Room | for | Negotiate with suppliers- Bulk purchasing |
| | Inflation Rate | | Periodic price adjustments- Operational efficiencies |
| | Direct Material for Banquet Event | for | Long-term contracts- Seek cheaper alternatives |

| Risk Category | Risk Mitigation Alternatives | | | Specific Mitigation Actions |
|----------------------------|------------------------------|----------|------------------------------------|---|
| | Quantity Realization F&B | Sold for | Improve menu quality- and packages | Promotions Enhance customer satisfaction to boost sales. |
| Low Sensitivity (Below 4%) | Direct Material F&B | for | Monitor costs | No immediate action needed unless significant cost increases occur. |
| | Direct Labor Hotel Room | for | Monitor wage changes | Track wages; intervene only if substantial increases arise. |
| | Direct Labor F&B | for | Monitor wage changes | Similar to hotel labor, keep under review without major intervention. |

The feasibility analysis conducted on PTBA’s planned 4-star hotel investment in Padang, Indonesia, reveals a compelling financial case for the project's implementation. Utilizing Benefit-Cost Analysis (BCA) and Capital Budget Analysis (CBA) as evaluative frameworks, the project demonstrates strong financial metrics, most notably a Net Present Value (NPV) of RP 188.38 billion and an Internal Rate of Return (IRR) of 16.38%, both exceeding the required return rate of 11.13%. These results indicate not only profitability but also economic viability, aligning with findings from Dogru et al. (2020), who emphasized that hotel investments can yield substantial returns and contribute to local employment and tourism development.

The revenue segmentation—50% from room bookings, 20% from food and beverage (F&B), and 30% from MICE (Meetings, Incentives, Conventions, and Exhibitions)—reflects an effective diversification strategy that hedges risk and capitalizes on complementary income streams. This approach is consistent with Tavitiyaman et al. (2012), who found that diversified revenue models enhance hotel performance and adaptability in dynamic market conditions. MICE, in particular, has proven to be a lucrative segment in urban hospitality markets, and its integration into the revenue mix can serve as a stabilizing force during seasonal fluctuations in individual leisure travel.

The sensitivity analysis underscores significant vulnerabilities in room pricing (ARR), occupancy rates, and interest rates, with fluctuations of $\pm 20\%$ impacting the NPV by up to 54.45%. The pronounced sensitivity to interest rates is particularly critical, as 65% of the project's capital structure depends on long-term debt. This finding echoes the concerns raised by Soni et al. (2023), who highlighted how economic policy uncertainty and financial leverage can amplify risk exposure in capital-intensive hospitality investments. Thus, PTBA’s proactive strategy of securing fixed-interest loans and applying dynamic pricing mechanisms is prudent for ensuring financial resilience.

Monte Carlo simulations further validate the project's feasibility, revealing an 87.2% probability of generating a positive NPV. However, the 12.8% risk of negative NPV—potentially reaching as low as -RP 274.67 billion—cannot be overlooked. Ma and Zhai (2016) similarly warned that hotel investments are particularly susceptible to demand uncertainty, which necessitates sophisticated risk modeling and contingency planning. Therefore, the recommendation for risk mitigation, such as insurance coverage for earthquake-prone Padang and collaborations with reputable international hotel operators, is not only strategic but essential for long-term sustainability.

Moreover, environmental and regulatory considerations should not be underestimated. Liu and Hu (2022) emphasized the importance of green and resilient infrastructure in hotel investment decisions, particularly in disaster-prone regions. PTBA’s acknowledgment of Padang’s earthquake risk and its plan to adopt resilient construction practices and acquire insurance coverage demonstrates a holistic and responsible investment approach.

Strategically, this investment aligns with PTBA’s broader diversification efforts, as recommended by Arifin et al. (2023), who advocate for asset optimization in public and

quasi-public enterprises through long-term investment in revenue-generating assets. By extending beyond its core operations, PTBA may not only generate financial returns but also strengthen its brand equity and corporate sustainability.

From a location perspective, Napierala (2019) and Yang et al. (2012) emphasize that hotel success is highly dependent on urban centrality, accessibility, and regional demand dynamics. Padang, with its growing tourism potential and limited upscale accommodation options, presents a favorable environment for this investment. However, a robust market entry and brand positioning strategy will be essential to capture market share in a competitive regional landscape.

In conclusion, the investment is justified both financially and strategically, with strong projected returns and alignment with corporate goals. Nevertheless, the identified risks require active management. Implementing the recommended mitigation strategies, including interest rate hedging, dynamic revenue management, resilient construction, and strategic partnerships, will be crucial for ensuring the project's long-term viability and maximizing stakeholder value.

CONCLUSION

This study confirms that redeveloping PTBA's under-utilized Wisma Ombilin site into a 4-star hotel is both financially and strategically compelling. Padang's accommodation supply is still dominated by non-star properties, yet starred hotels—particularly in the 4-star segment—demonstrate superior performance: 2023 average room rates have already surpassed pre-pandemic benchmarks, and Q1 2024 occupancy (65 %) markedly outpaces the 36.8 % average for star competitors and the 17.7 % average for non-star facilities. Rapid tourism growth (3.95 % CAGR since 2011) and a robust MICE calendar further reinforce sustained demand for high-quality accommodation.

Financial modelling under conservative assumptions yields an NPV of RP 188.38 billion, an IRR of 16.38 %—comfortably above the 11.13 % hurdle—and a pay-back period of 10.9 years. A profitability index of 1.31 and Monte-Carlo simulations showing an 87.2 % likelihood of positive NPV underscore the project's value-creation potential. Even so, sensitivity tests reveal that average room rate, room-night sales, and long-term interest rates can swing NPV by up to 54.5 %, 45.0 %, and 45.6 % respectively, highlighting the need for vigilant revenue management and prudent financing.

Targeted risk-mitigation actions—dynamic pricing, diversified market segmentation, and fixed-rate or hedged debt facilities—directly address high-impact variables. Medium-level risks (banquet and F&B pricing, inflation, input costs) are manageable through supplier agreements, operational efficiencies, and regular price reviews, while low-impact cost items warrant routine monitoring. Structural measures, including tsunami-resilient design, seismic engineering, and comprehensive insurance cover, align the venture with Padang's disaster profile and global sustainability expectations.

Strategically, the hotel diversifies PTBA's revenue base, reduces coal dependence, and enhances corporate ESG credentials, while catalysing local job creation and tourism income. Provided that the recommended mitigation strategies are implemented and a strong management partnership is secured, the proposed 4-star hotel promises sustainable cash flows, robust competitive positioning, and long-term stakeholder value. Proceeding to detailed design and financing is therefore recommended.

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