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Renewable Energy Certificate (REC) Market Demand Mapping in Philippines

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Highlights

- The Philippines' dual REC market, with both an unregulated voluntary market and a regulated compliance market, presents a unique opportunity to drive RE adoption across various sectors.
- Manufacturing companies increasingly integrate solar power into their operations, demonstrating a proactive approach to increasing their renewable energy mix.
- Non-manufacturing sectors, including retail, professional services, and finance, show a high rate of REC adoption, driven by corporate sustainability goals and the influence of companies like McKinsey & Company advocating for RECs.
- The smelting industry faces challenges in adopting RE and utilising RECs, primarily due to high energy demands, cost concerns, and potentially limited awareness.
- Expanding the Philippine Renewable Energy Market (PREM) to include energy-intensive industries like smelting is crucial for driving broader REC adoption and achieving national renewable energy targets.

1. Introduction

The Philippines is striving towards an ambitious goal: to derive 35% of its energy from renewable sources by 2030 and 50% by 2040 [1]. While this transition is driven by the urgent need to enhance energy security and mitigate climate change, its success hinges on effectively leveraging market mechanisms that accelerate renewable energy (RE) adoption. Renewable Energy Certificates (RECs) have emerged as a powerful tool in this endeavour, providing a verifiable way to track and incentivise RE generation.

Unlike REC markets in other BIMP countries, the Philippines operates both an unregulated voluntary market and a regulated compliance market, known as the Philippine Renewable Energy Market (PREM), which supports the Renewables Portfolio Standards (RPS). This presents both opportunities and challenges for businesses, policymakers, and investors alike. Understanding the dynamics of this market is crucial for unlocking the full potential of RECs to drive the country's energy transition [2].

This policy brief categorises the primary REC participants and reviews case studies from key sectors, including manufacturing, smelting, non-manufacturing, and data processing industries. Furthermore, companies within these sectors will be assessed based on their RE100 membership—a pledge for 100% renewable electricity—and Science-Based Targets initiative (SBTi) participation, which requires members to reduce electricity-related (Scope 2) emissions.

2. Identifying Key Stakeholders

This analysis maps the interplay between three key stakeholder groups: oversight bodies, government agencies, and market participants.

Oversight Bodies: The Philippines' oversight of its REC market presents a unique landscape compared to other BIMF countries due to the presence of PREM, its compliance-driven market. While influential international bodies like RE100 and the SBTi are crucial in driving voluntary corporate commitments to RE and emission reductions, the Philippines also features a robust regulatory framework. The Philippines Electricity Market Corporation (PEMC) actively manages PREM, ensuring the effective participation of RE generators mandated to contribute to the nation's RE targets.

Government Agencies: Key government bodies—including the Department of Energy (DOE), the National Renewable Energy Board (NREB), the Energy Regulatory Commission (ERC), and the Independent Electricity Market Operator of the Philippines (IEMOP)—shape the REC market through policies, incentives, and regulatory frameworks. Responsible for the nation's REC compliance market, the Philippines Electricity Market Corporation (PEMC) oversees the registration to the PREMS and issuance of the PREMS RECs.

Market Participants: Recognising the existence of compliance REC and unregulated voluntary markets, market participants can be categorised into two groups: voluntary participants and mandated actors.

- **Voluntary participants** primarily consist of multinational companies, as will be demonstrated in the analysis of the four key sectors below.
- **Mandated actors** are entities required to source a minimum percentage of their energy supply from renewable energy (RE) resources under the Renewable Portfolio Standards (RPS). These mandated participants include Distribution Utilities (DUs), Suppliers of Last Resort (SOLRs) (entities designated to supply electricity when regular providers fail), Local and Licensed Retail Electricity Suppliers (RES), Generating Companies supplying Directly Connected Customers (DCCs), and entities operating within economic zones. Additionally, other participants may be designated as mandated actors upon recommendation by the National Renewable Energy Board (NREB) and approval from the Department of Energy (DOE).

3. Rationale for Selecting Key Sectors

The manufacturing sector is notable as an industry with massive energy usage, assessing this sector is imperative as it is expected to contribute significantly to the REC demand. The smelting sector is another major energy-intensive industry, primarily powered by coal and natural gas, contributing significantly to carbon emissions. The Philippines' smelting industry, especially in nickel and gold production, plays a crucial role in nickel ore exports.

Although precise data on smelting's energy consumption is limited, its reliance on energy-intensive processes suggests it constitutes a considerable share of industrial energy use. The country's growing dependence on coal-fired power—with coal accounting for 61.92% of electricity generation in 2023, up from 59.07% in 2022—further highlights the sector's energy challenges and its potential to adopt RECs for decarbonisation [3].

While less energy-intensive, non-manufacturing industries also significantly contribute to electricity consumption due to their rapid growth. A notable trend is the sector's transition from diesel generators to solar PV systems for backup power in establishments such as shopping malls and large-scale buildings, reflecting a shift towards renewable energy [4].

Finally, the data processing sector, although currently underdeveloped in ASEAN, exhibits significant electricity demand, particularly for cooling systems. With the Philippines achieving internet penetration rates of 70-80%, the country is poised to become a fertile ground for data processing expansion. This sector's energy-intensive nature underscores the importance of integrating RECs to support sustainable growth and meet rising energy needs [5].

In summary, these four sectors—manufacturing, smelting, non-manufacturing, and data processing—represent substantial opportunities for renewable energy integration via REC adoption.

4. Case Studies in Key Sectors

Before embarking on a sectoral analysis, it is imperative to outline the methodology applied to companies lacking verified REC purchases. For entities where no publicly available records of REC acquisition exist, it is acknowledged that such companies may still engage in REC procurement, albeit without accessible documentation. Only those companies with definitive and verifiable evidence of REC transactions are included in this analysis. Organisations that reference REC purchases as part of their future strategies are categorised as having no recorded transactions. This policy predominantly relies on corporate sustainability reports; in their absence, supplementary sources such as press releases and news articles are utilised.

4.1. Manufacturing Sector

Recognising the significant energy demands of the manufacturing sector, companies in the Philippines are increasingly turning to solar power to enhance their RE mix. For example, the Jollibee Group recently installed a 6,300-panel solar system at its Canlubang Baking Facility, aiming to source one-third of the facility's energy needs from solar power.

This initiative has been operational since January 2024 [6]. Meanwhile, other industry leaders like Nestlé [7] and Universal Robina Corporation (URC) [8] are also integrating solar solutions into their operations.

To better understand the role of RECs in supporting corporate RE adoption, the Table 1 examines key players in the manufacturing sector. It highlights their participation in initiatives like RE100 and SBTi, alongside their current REC usage. This analysis provides valuable insights into how leading companies leverage RECs to achieve their sustainability ambitions and contribute to the growth of RE in the Philippines.

Table 1 List of Manufacturing Companies in the Philippines

Company	REC	RE100	SBTi	Category
Danone	Yes	Yes	No	Fast Moving Consumer Goods
Hyundai Motor Company	Yes	Yes	No	Manufacturing
Johnson & Johnson	Yes	Yes	Yes	Fast Moving Consumer Goods
Nissin	No	Yes	Yes	Fast Moving Consumer Goods
PepsiCo	Yes	Yes	Yes	Fast Moving Consumer Goods
Samsung Electro-Mechanics	Yes	Yes	No	Manufacturing
Samsung Electronics	Yes	Yes	No	Manufacturing
Unilever	Yes	Yes	Yes	Fast Moving Consumer Goods
Ajinomoto	Yes	Yes	Yes	Fast Moving Consumer Goods
Applied Materials	Yes	Yes	Yes	Manufacturing
Asus	Yes	Yes	No	Manufacturing
Heineken	Yes	Yes	Yes	Fast Moving Consumer Goods
HP Inc	Yes	Yes	No	Manufacturing
KAO Corporation	Yes	Yes	No	Manufacturing
San Miguel Corporation	No	No	No	Conglomerate
Monde Nissin Corporation	No	No	No	Food and Beverage
Aboitiz Equity Ventures	No	No	No	Conglomerate
Holcim Philippines, Inc.	No	No	No	Cement Manufacturing

Company	REC	RE100	SBTi	Category
PLDT Inc.	No	No	No	Telecommunications
Nestlé Philippines	No	Yes	No	Food and Beverage
Procter & Gamble (P&G)	Yes	No	No	FMCG
Coca-Cola Beverages Philippines	No	No	No	Beverage
Manila Electric Company (Meralco)	No	No	No	Utilities

**The information is gathered from the companies' respective sustainability and other related reports.*

Analysing the list of companies reveals a key trend in the Philippines: a strong correlation between commitments to international sustainability initiatives (RE100 and SBTi) and the actual usage of RECs. Companies that have pledged to achieve 100% RE through RE100 or SBTi consistently utilise RECs. This suggests that these global standards play a significant role in driving REC adoption within the country. Interestingly, this pattern appears across different manufacturing industries.

The landscape of the Philippines unregulated voluntary REC market sector is predominantly shaped by multinational corporations, many of which are registered members of initiatives like RE100 and the SBTi. Currently, the PREM registrants which is for the mandated participants, are primarily limited to generation companies—those owning eligible RE generation facilities—along with electric cooperatives, distribution utilities, and retail electricity suppliers.

Targeting the manufacturing industry for compliance in the REC market could bolster the country's RE ambitions. Engaging these energy-intensive industries would not only enhance the demand for RECs but also drive a more comprehensive integration of RE solutions across various sectors.

4.2. Smelting Sector

The smelting industry in the Philippines as indicated in Table 2 shows a general lack of commitment to green initiatives and the use of RECs, despite its significant contribution to national energy consumption. None of the companies assessed have committed to both RE100 and SBTi, resulting in absence of procurement of RE through RECs.

Table 2 List of Smelting Companies in Philippines

Company	Commodity	RECs Usage	RE100	SBTi
Philippines Nickel Industry Corp.	Nickel	No	No	Yes
Millennium Legacy Aluminium (MILLAC)	Aluminum	No	No	No
Global Ferronickel Holdings, Inc.	Nickel	No	No	No
Taganito HPAL Nickel Corporation	Nickel	No	No	Yes
Marinduque Mining and Industrial Corp.	Copper	No	No	No
Atlas Consolidated Mining & Dev. Corp.	Copper	No	No	No

The smelting industry faces inherent challenges in adopting RE. High energy consumption, cost concerns, and potentially limited awareness about RECs contribute to the slow uptake of these solutions. This is compounded by the industry's reliance on stable power, often necessitating dedicated power plants for uninterrupted operations.

Given this context, engaging smelting companies with dedicated power plants in the PREM system is crucial. However, this requires a foundation of awareness within the sector regarding the importance of RECs for both operational efficiency and sustainability goals.

4.3. Non-Manufacturing Sector

Similar to the manufacturing sector, Table 3 reveals a strong trend among non-manufacturing companies in the Philippines: a high correlation between commitments to international sustainability initiatives (RE100 and SBTi) and the use of RECs. This trend is particularly prominent in sectors like retail, professional services, and financial services, where a majority of the listed companies have committed to both RE100 and SBTi and are actively procuring RECs. However, there are notable exceptions, particularly among conglomerates, telecommunications companies, and utilities. While some of these companies have yet to join RE100, they are still actively using RECs and participating in SBTi, indicating a growing awareness of the importance of RE and emissions reduction even without a full RE100 commitment.

Table 3 List of Non-Manufacturing Companies in Philippines

Company	RE100	SBTi	RECs Usage	Industry	Specific Activities
Ingka Group	Yes	Yes	Yes	Retail	Furniture
PwC	Yes	Yes	Yes	Professional Services	Accounting, consulting, auditing
Starbucks	Yes	Yes	Yes	Retail	Coffee shops, food service
AEON	Yes	No	Yes	Retail	Shopping malls, supermarkets
ANZ	Yes	Yes	Yes	Financial Services	Banking
H&M	Yes	Yes	Yes	Retail	Clothing and fashion retail
HSBC	Yes	Yes	Yes	Financial Services	Banking
McKinsey & Company	Yes	Yes	Yes	Professional Services	Management consulting
Ayala Corporation	No	Yes	Yes	Conglomerate	Real estate, banking, telecommunications, water, power
SM Investments Corporation	Yes	Yes	Yes	Conglomerate	Retail, banking, property
PLDT Inc.	No	Yes	Yes	Telecommunications	Telecommunications
Globe Telecom, Inc.	Yes	Yes	Yes	Telecommunications	Telecommunications
Metro Pacific Investments Corp.	No	Yes	Yes	Conglomerate	Toll roads, water, power, hospitals
Manila Water Company, Inc.	No	Yes	Yes	Utilities & Infrastructure	Water distribution

Company	RE100	SBTI	RECs Usage	Industry	Specific Activities
Philippine Airlines	No	Yes	Yes	Transportation	Airline
BPI (Bank of the Philippine Islands)	No	Yes	Yes	Financial Services	Banking
UnionBank of the Philippines	Yes	Yes	Yes	Financial Services	Banking

**The information is gathered from the companies' respective sustainability and other related reports.*

The listed companies are setting a powerful precedent for REC utilisation across diverse non-manufacturing sectors in the Philippines. This collective embrace of RECs has a significant multiplier effect, influencing broader adoption throughout various industries. These companies, such as banks and consulting companies could be a catalyst that demonstrating RE procurement through RECs is a viable and effective strategy for achieving sustainability goals.

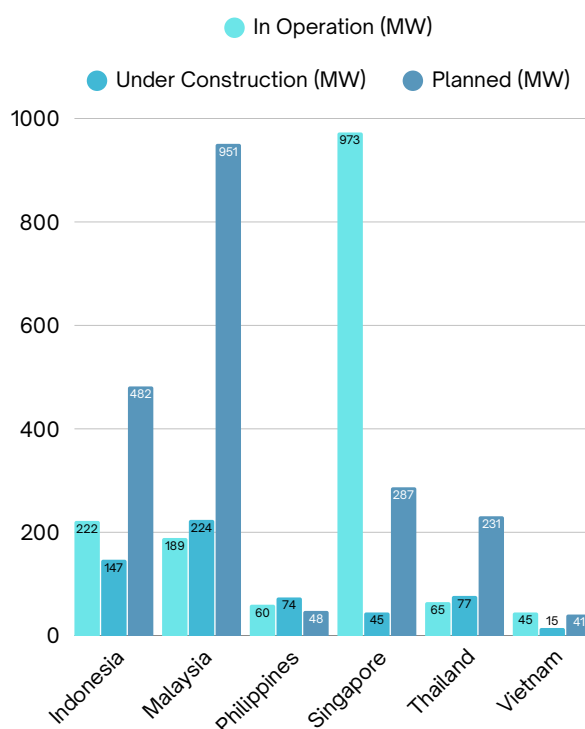
For instance, McKinsey & Company, a leading consulting firm in the region, is also championing the use of RECs in its latest power outlook report [9] As other businesses increasingly rely on management consultancy services, McKinsey's advocacy for RECs not only raises awareness but also signifies a shift towards integrating RECs into consulting solutions.

This development is likely to stimulate further demand for RECs, reinforcing the momentum towards sustainable energy practices across sectors.

4.4. Data Processing Sector

Reflecting regional trends in the ASEAN, the burgeoning data processing sector, with its high energy demands for cooling, is also assessed, despite the Philippines' current position as the second least ASEAN member state (AMS) in terms of the data centre capacity, above Vietnam. Also, reckoning the Philippine's rapid internet and social media penetration, supporting more potential for the country to expand its data processing sector [10].

Figure 1 Data Centre Capacity in Selected AMS



*The data is acquired from Asia Pacific Data Centre Update H2 2023, Cushman & Wakefield.
The figure is generated by ACE [10].*

Table 4 List of Data Processing Companies in Philippines

Company	Industry	RE100	SBTi	RECs Usage
ePLDT	Information Technology	Yes	Yes	Yes
Globe Telecom	Telecommunications	Yes	Yes	Yes
Digital Edge Data Center	Data Center Services	No	Yes	Yes
NTT Data	IT Services	Yes	Yes	Yes
Northgate Technologies	IT Services	No	No	No
DBP Data Center Inc.	Financial Services	No	No	No

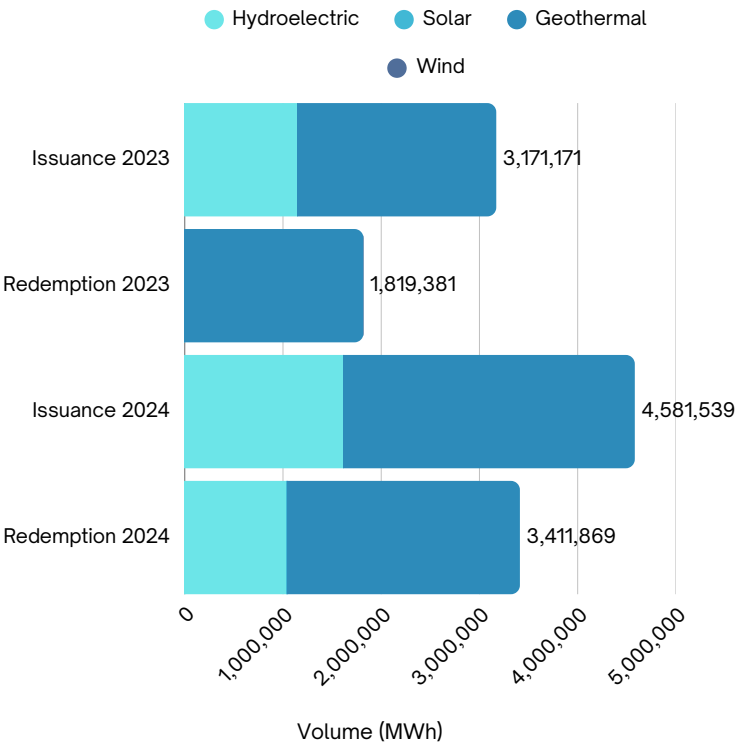
**The information is gathered from the companies' respective sustainability and other related reports*

The data processing sector in the Philippines is increasingly embracing RECs as indicated by Table 4 as a part of its sustainability initiatives, with companies such as ePLDT, Globe Telecom, and NTT Data leading the charge. These organisations are motivated by commitment to global initiatives like RE100 and the SBTi, showcasing a clear trend towards integrating RE solutions. However, challenges like the limited availability of RECs and the need for a more robust regulatory framework could impede progress.

5. Status Quo of REC Demand

This analysis relies on I-REC Registry data as of October 2024, reflecting the Philippines' unregulated voluntary REC market's adoption of the I-REC system [11]. Although the country also utilises its domestic system PREM for the compliance RECs, the global adoption of I-REC ensures a reliable reflection of current demand trends.

Figure 2 REC Issuance and Redemption in the Philippines Recorded in I-REC Registry per October 2024



The REC issuance showcased a rise from 3.17 million MWh in 2023 to 4.58 million MWh in 2024. Redemption similarly increased, from 2.68 million MWh to 3.41 million MWh. Geothermal dominates the technological composition of REC issuance and redemption, underscoring its critical role in meeting market demand. However, the average gap of 1 year and 4 months between issuance and redemption indicates delayed utilisation, potentially linked to optimal market conditions or sustainability reporting cycles.

6. Policy and Regulatory Landscape

The Philippines' Renewable Energy Act (2008) has introduced REC nationally, particularly on its Section 6 and 8 pertaining to RPS and RE market, in consecutive order. A notable regulatory framework has also been established in 2019 with Philippines' renewable energy market rules. The country then made a monumental call to develop its compliance market with the establishment of PREM, marked by the launching of the REM Manual in 2021. PREM's 2021 REM Manual formalised trading protocols, targeting generation companies and distribution utilities, while aligning with global initiatives like RE100 and the SBTi, which encourage corporate RE commitments. As of 26 December 2024, the PREM has been fully commercially operational.

Despite the circumstances, barriers exist, including the high costs of RECs, limited REC market access for non-utility sectors, and a need for greater awareness, especially in energy-intensive sectors like smelting, non-manufacturing industries, and emerging data processing firms, which are less energy-intensive but rapidly expanding, exhibit strong REC adoption trends due to corporate sustainability goals, but would benefit from enhanced regulatory support to increase demand further.

Sector-specific policies present opportunities to bolster REC adoption. The manufacturing sector, driven by energy costs and international supply chain demands, is seeing significant REC use through sustainability-driven investments in solar and other renewables. In the smelting industry, expanding PREM eligibility could increase REC demand by encouraging awareness and cost-effective access to renewable sources. The evolving policy framework, particularly if expanded to fully support industrial sectors, holds the potential to deepen REC adoption across the Philippine energy landscape, reinforcing national RE targets.

7. Conclusion and Ways Forward

This policy brief has examined the dynamics of the REC market in the Philippines, analysing demand across key sectors and identifying opportunities and challenges for its further development.

The analysis reveals a strong correlation between participation in international sustainability initiatives like RE100 and SBTi and REC adoption, particularly in the manufacturing and non-manufacturing sectors. However, challenges persist in engaging energy-intensive industries like smelting and ensuring broader access to the REC market.

To further strengthen the REC market and accelerate the Philippines' transition to RE, the following recommendations are proposed:

Expand PREM Eligibility: Broaden the PREM to include additional high-energy sectors like manufacturing and smelting to increase REC demand and compliance market participation.

Strengthen Compliance Mechanisms: Enhance RPS mandates to require gradual increases in REC usage over time, aligning with national renewable energy goals.

Strengthen policy support: Enhance policy support for REC adoption, including streamlining regulations, improving market transparency, and providing clear guidelines for participation.

Targeted awareness campaigns: Launch targeted awareness campaigns to educate companies, particularly in energy-intensive sectors, about the benefits of RECs and how they can contribute to their sustainability goals.

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