

MARKET SPOTLIGHT: TAIWAN



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Wednesday, 22 April 9:15-10:00 AM

Introduction to T-RECs and Renewable Energy Market in Taiwan



BSMI
T-REC Center



Key Drivers for Net-Zero



Green Supply Chains

01

- Apple
- Google
- TSMC

Regulatory Requirements

02

- Energy-heavy Industries
- Environmental Impact Assessment
- Local government ordinances

Climate Initiatives

03

- RE100
- SBTi
- CDP
- EP100

The Conception of T-REC

ID of Green Electricity

- Verifying the Green Electricity
- Create a win-win permit for economic and environmental protection

Sources of Energy

T-REC has issued 5 type of renewable energy including Wind, Solar, Biomass, Geothermal, Hydro



Operational mechanism

- Environmental benefits can't be doubled counting
- Managing through the Tracking system
- Electronically distributed

Link Up with the World



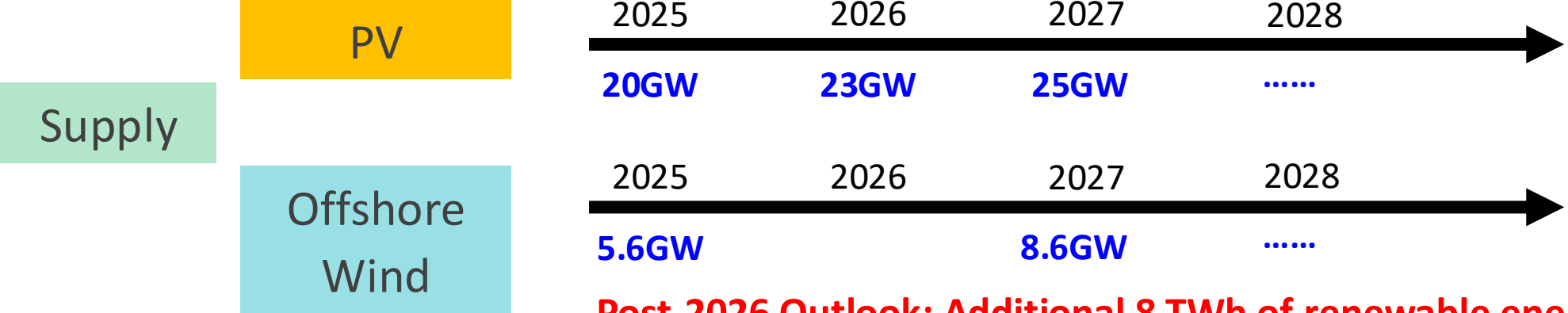


Ways to Obtain T-REC



Taiwan Renewable Energy Supply & Demand

To expand renewable energy promotion, policy goal has been set for renewable energy to account for 20% of total power generation by 2025. PV and offshore wind are currently being actively promoted.



Post-2026 Outlook: Additional 8 TWh of renewable energy will be commissioned annually

Demand

- According to the MOEA renewable energy survey, supply currently exceeds demand
- Current renewable energy development can satisfy the needs of enterprises

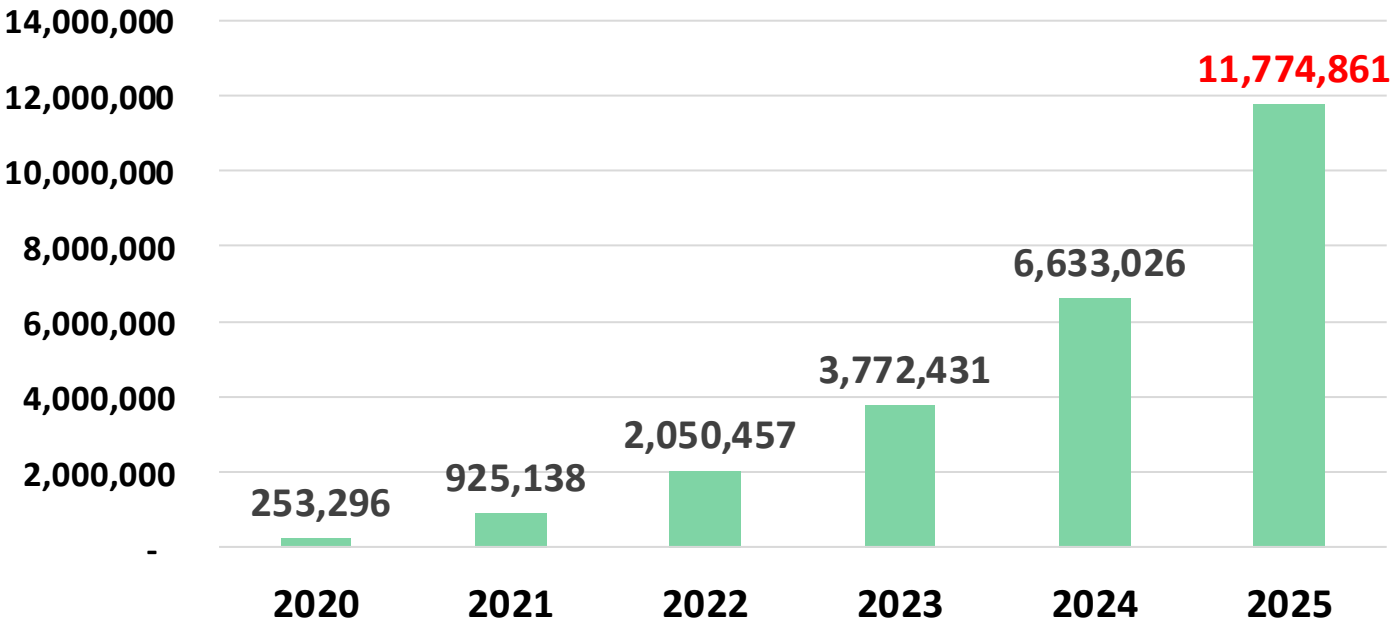


Wheeling T-REC Transaction Volumes



- From 2020 to 2025, the cumulative volume of wheeling T-RECs reached 11.7 million (11.7 billion kWh).
- A total of 659 buyers currently participate in the T-REC market. While large enterprises remain the primary participants.

Cumulative wheeling T-REC transactions amount



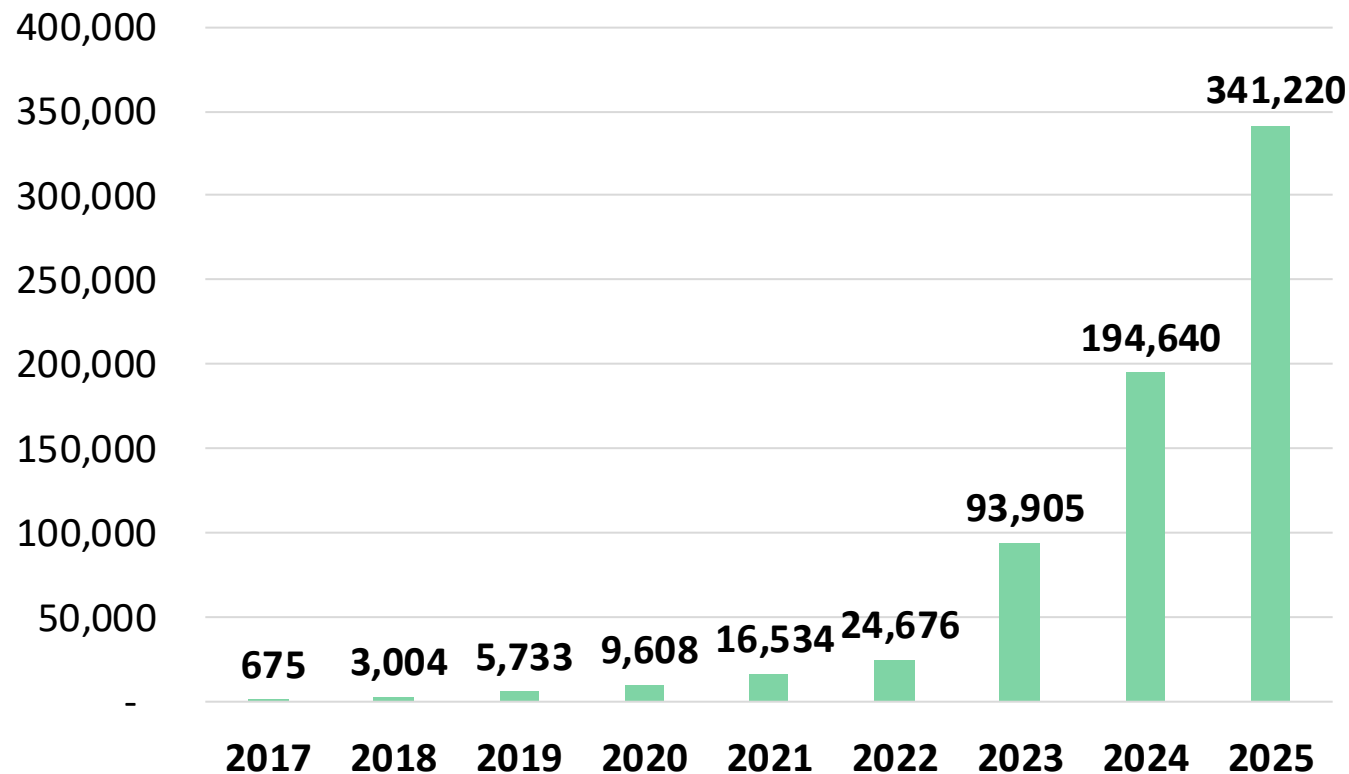
Year	Annual Wheeling T-REC	Annual Growth Rate(%)
2020	253,296	----
2021	671,842	165
2022	1,125,319	67
2023	1,721,974	53
2024	2,860,595	66
2025	5,141,835	80
Total	11,774,861	

On-site T-REC Transaction Volumes



Since 2017, cumulative on-site T-REC transactions have reached 236,429(236million kWh).

Cumulative on-site T-REC transaction amount

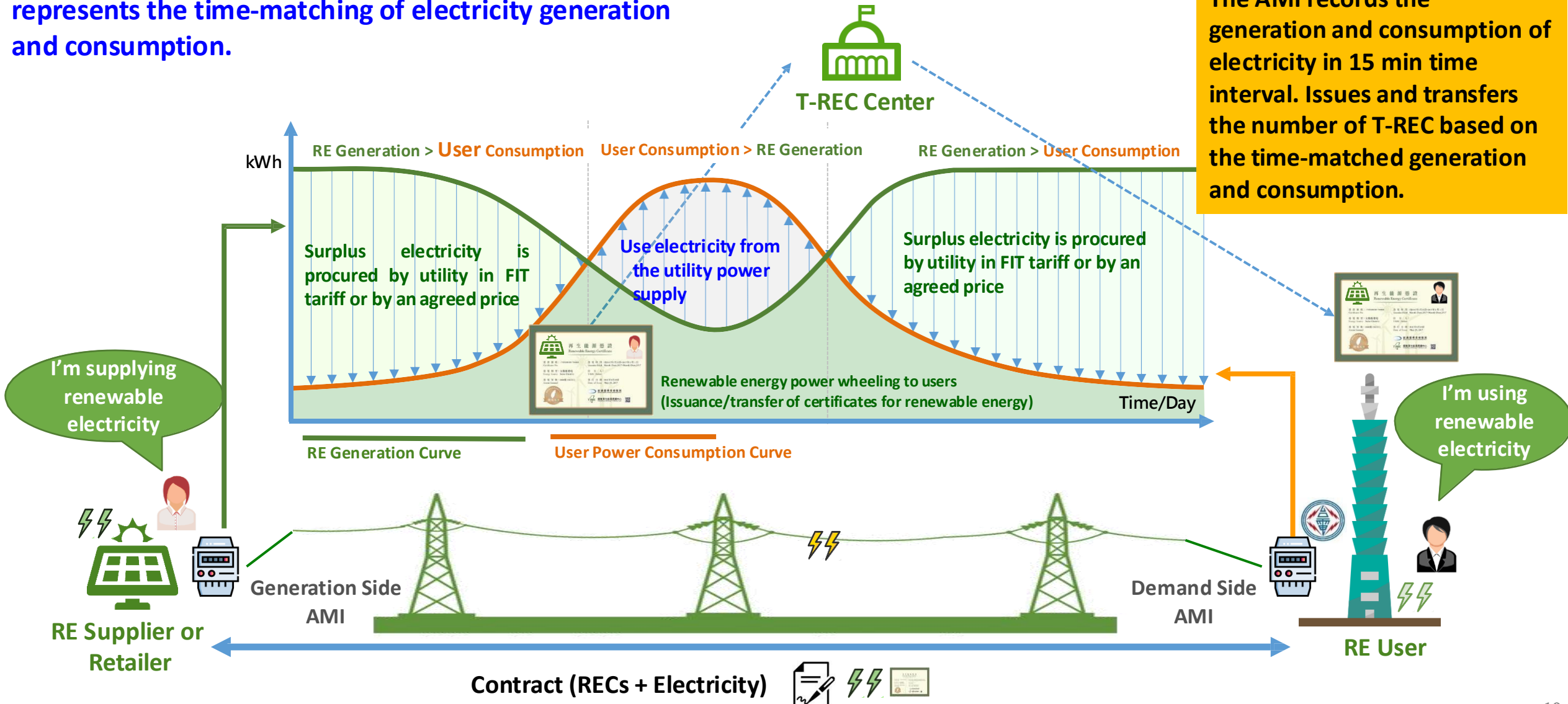


Year	Annual On-site T-REC	Annual Growth Rate(%)
2017	675	----
2018	2,329	245
2019	2,729	17
2020	3,875	42
2021	6,926	79
2022	8,142	18
2023	69,229	750
2024	100,735	46
2025	146,580	31
Total	341,220	----

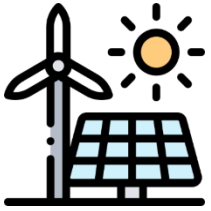
The Time-matching Issuing Model of T-REC

The T-REC is the amount of renewable energy that represents the time-matching of electricity generation and consumption.

The AMI records the generation and consumption of electricity in 15 min time interval. Issues and transfers the number of T-REC based on the time-matched generation and consumption.



Odd-lot T-REC Issuance



Odd-lot Planning :

- To align with **corporate environmental benefit declarations** and the **power wheeling information**. For amounts less than 1,000 kWh, non-whole T-REC will be issued separately.
- This allows holders to apply for T-REC **issuance, transfer, and declaration** even when the electricity volume is less than 1,000 kWh.

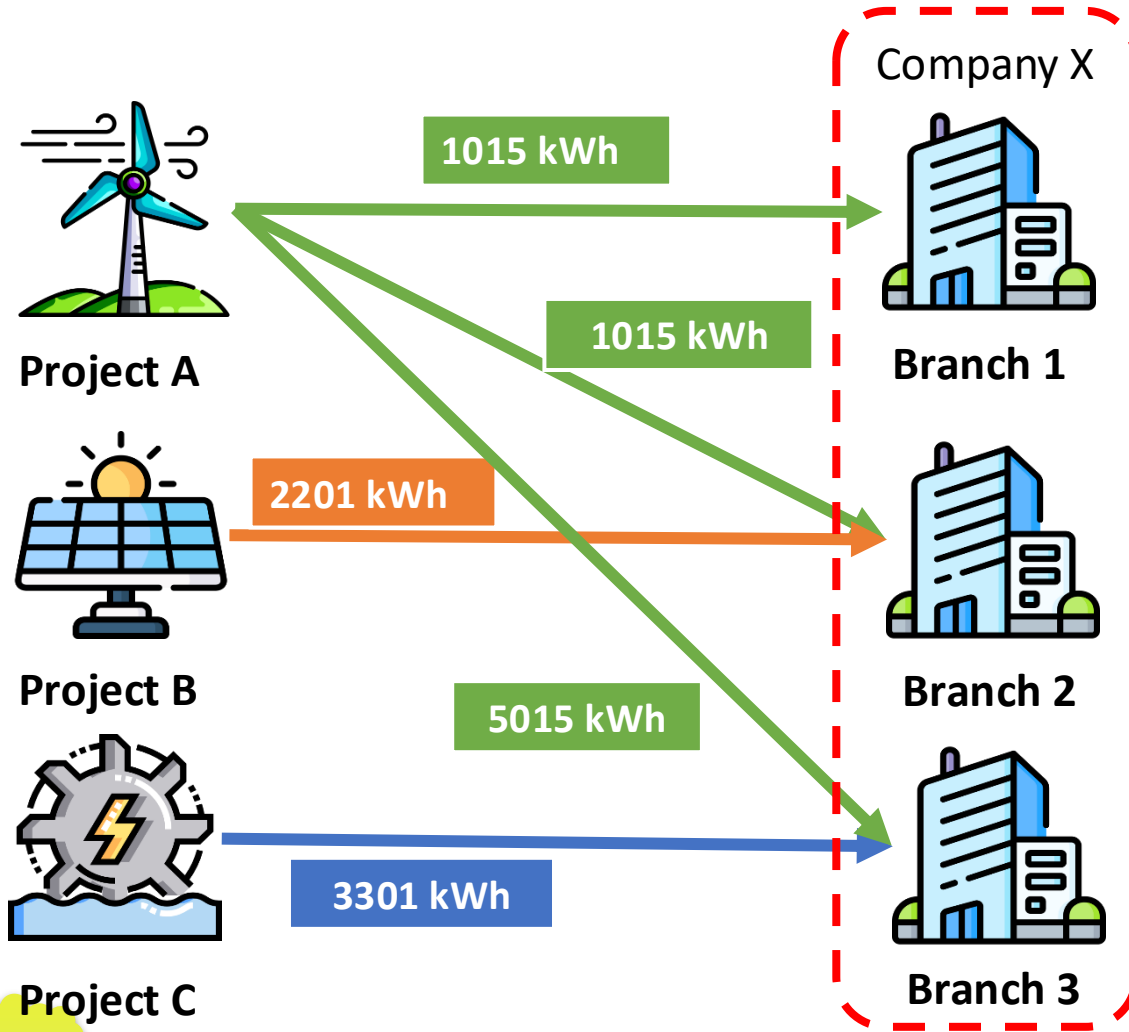


Settlement Schedule and Issuance :

- Starting from 2026, remaining balances will be calculated **monthly** based on the user's AMI, with odd-lot T-REC being issued accordingly.



Odd-lot T-REC Issuance Example



T-REC Website Display

Project	Buyer	Wheeling Amount (MWh)	Number of T-REC Issued
A	Company X	7.045	10 (2+2+6)
B	Company X	2.201	3
C	Company X	3.301	4

Market Spotlight

- Taiwan -



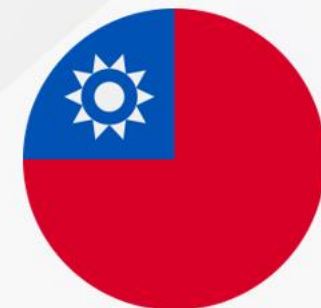
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RE Procurement Methods in Taiwan

1 Unbundled
T-REC

2 Corporate PPA
(bundled T-REC)

3 Self-Consumption
Project

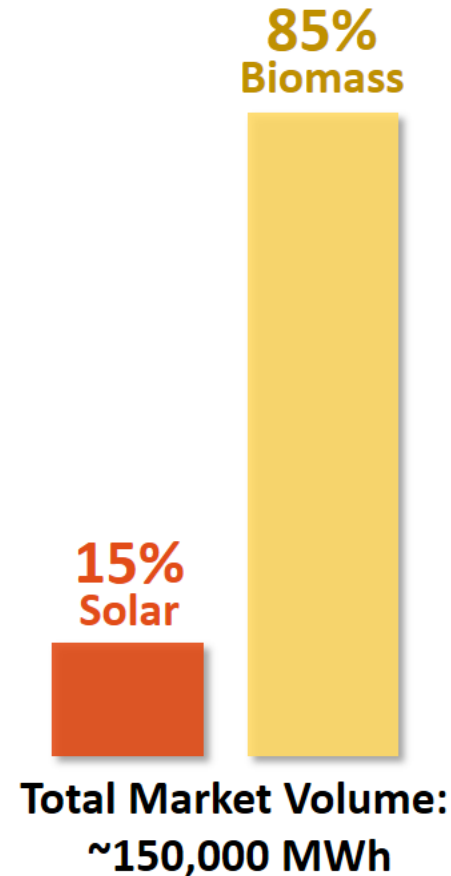


97%
PPA
(bundle T-REC)

Unbundle
T-REC
3%

2025 Yearly Volume Breakdown PPA & T-REC

Unbundle T-REC



2025 Transaction Landscape

Main Challenge

Low Supply & High Price
(only self-consumption project can
apply unbundle T-REC)

Changes in Procurement Strategy

- Increasing Adoption of Biomass:
Higher demand from corporate buyers
- from Spot Purchases
to Multi-Year Commitments

Unbundle T-REC

2026 Supply and Price Forecast



Biomass
Rising Prices (↑)

- **Persistent Supply Shortage** : Tight spot liquidity driven by multi-year contractual lock-ins
- **Higher Costs**: Rising prices



Solar
Stable Prices (→)

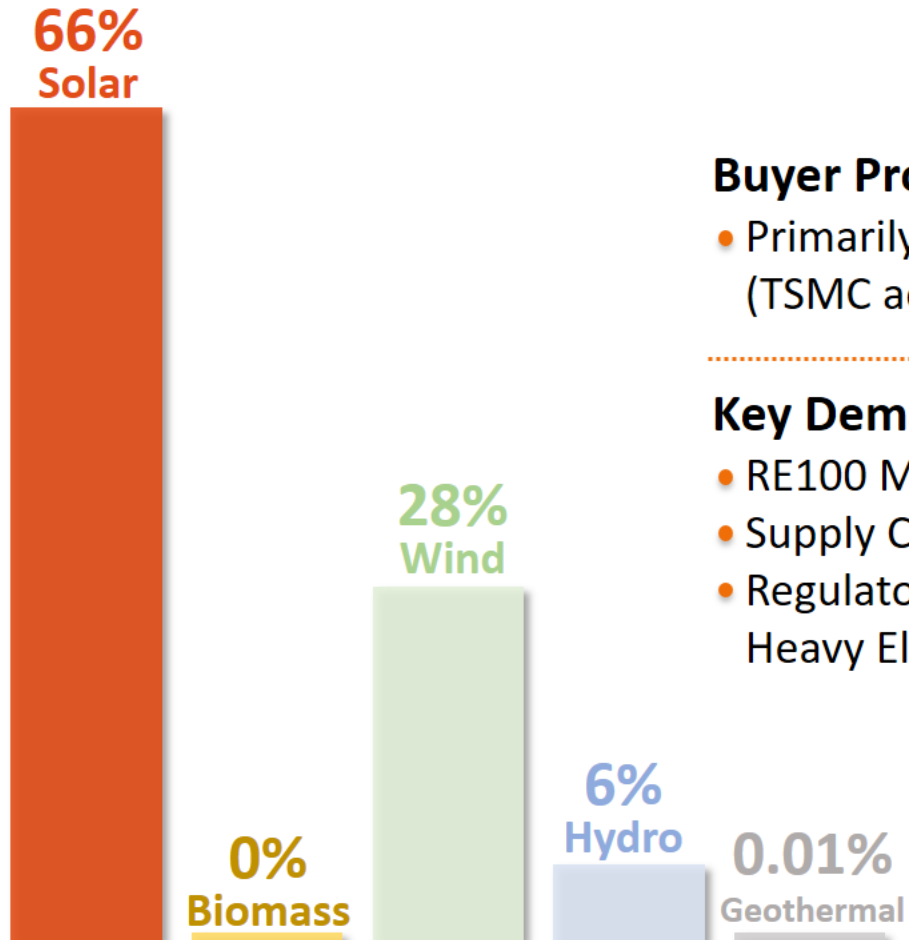
- **Supply vs. Demand**: New asset influx is offset by steady baseline demand, further amplified by the substitution of unavailable Biomass T-RECs
- **Price Support**: Prices remain steady compared to last year

EAC in Taiwan

			
RE100 Recognized	V	V	V
Time of Transfer	1	2	2
Retire EAC behalf of Beneficiary	X	V	V
Technology	No restriction	Solar Biomass Small hydropower	Solar
Project Type	Self-consumption projects	non-FiT projects	non-FiT projects

*** Clarification: Non-FiT projects ≠ Self-Consumption projects in Taiwan**

Solar and Wind as the Primary Supply Sources



Buyer Profile:

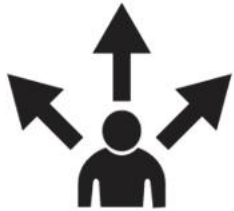
- Primarily Local Enterprises (TSMC accounts for approx. 44%)

Key Demand Drivers

- RE100 Membership
- Supply Chain Requirements
- Regulatory Compliance: Heavy Electricity Consumers

PPA
(bundle T-REC)

PPA Market Barriers



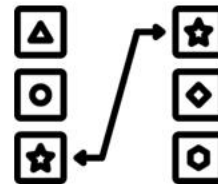
Lack of
Clear Guidance
for Buyers



Persistent
Supply
Shortage



Solar and Wind
Dominance
in Supply

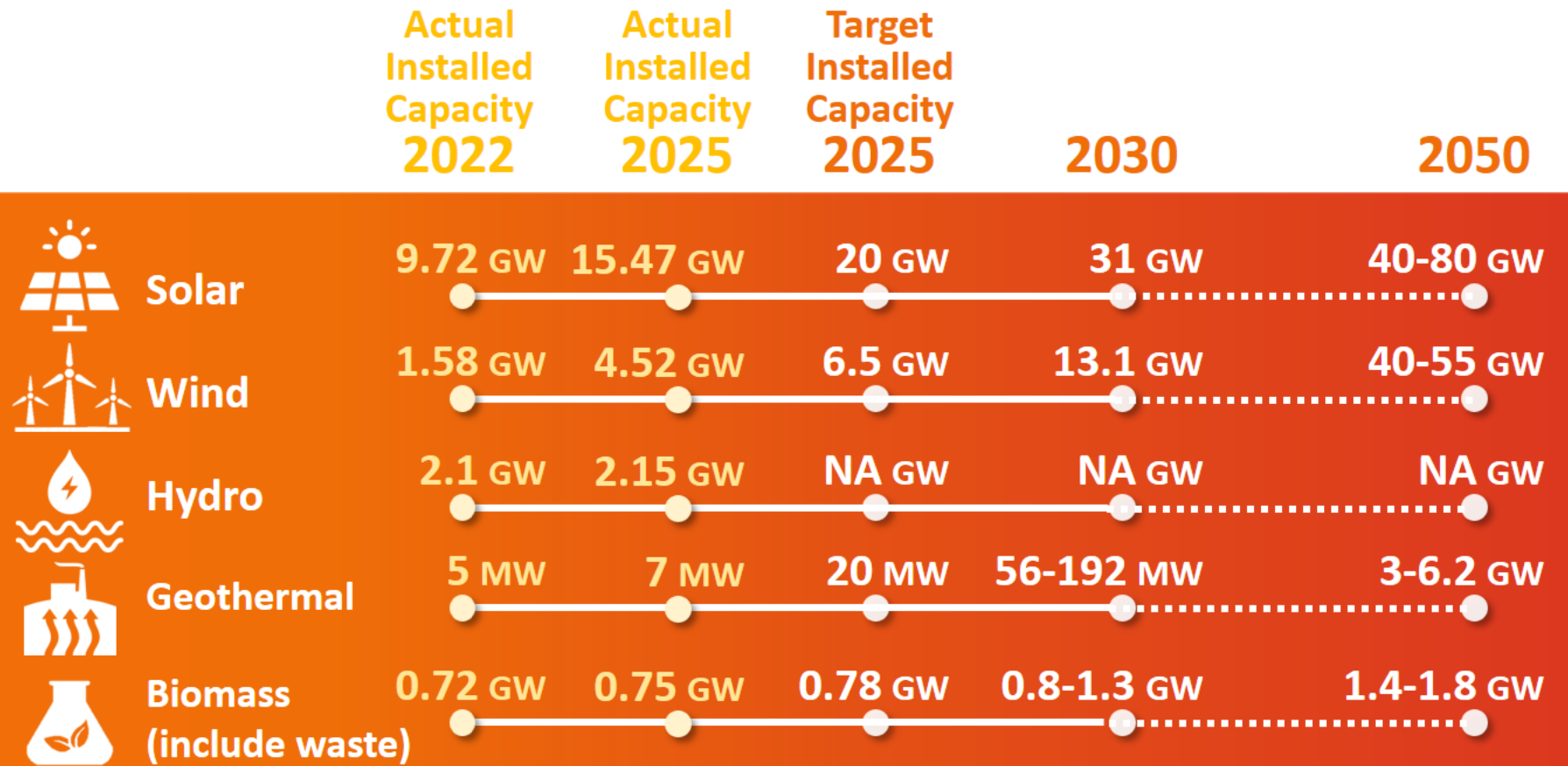


15-Minute
Matching
Constraints

PPA

(bundle T-REC)

Taiwan RE Development Lag (2025-2030)



2025 Total RE Generation : 13.1% of the National Total
(Fall Significantly Short of the Target- 20%)

Demand & Supply Gap

Widening Deficit:

The Persistent RE Supply Shortage Leading to 2030

		2025	2030
Supply		5.3 TWh	56.4 TWh
Demand	Voluntary	53.9 TWh	88.5 TWh
	Mandatory	5.6 TWh	16.8 TWh
		-54.2 TWh	-48.9 TWh

Looking Beyond Solar and Wind

From Concentrated Reliance to Strategic Diversification

Micro-Generation

Baseload-Oriented

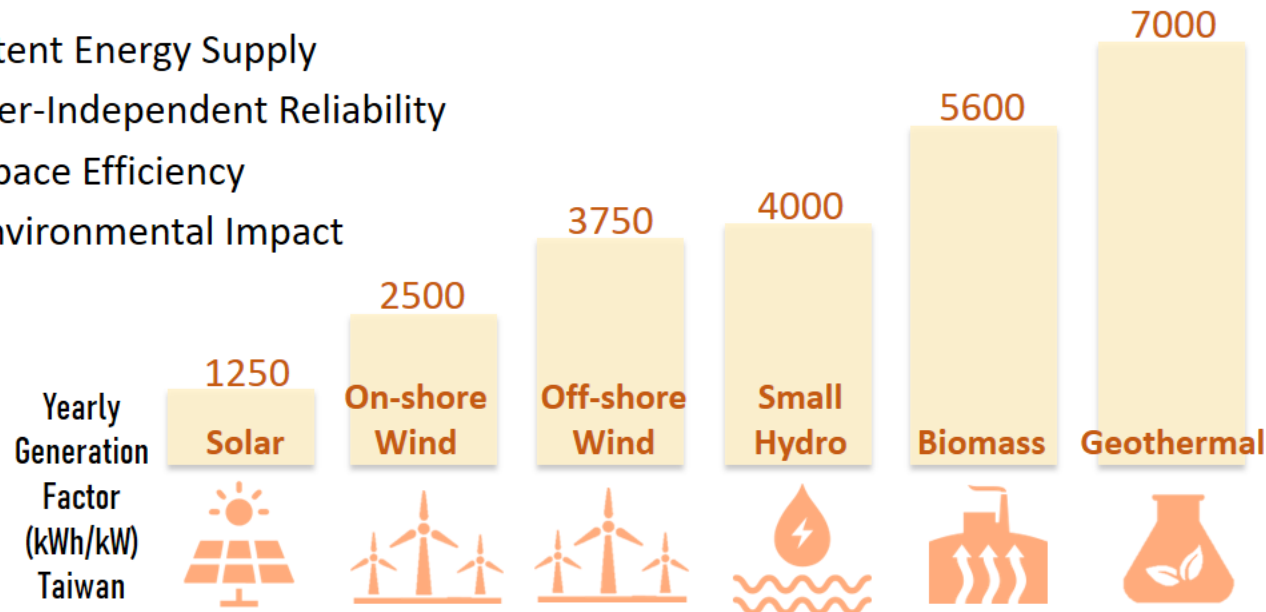
Circularity

EX. Sustainable Small Hydro

Geothermal

Sustainable Biomass

- ✓ Consistent Energy Supply
- ✓ Weather-Independent Reliability
- ✓ High Space Efficiency
- ✓ Low Environmental Impact



Expanding
Renewable
Horizons

Renewable Energy Procurement Roadmap

← Unbundle T-REC

Prioritize PPA →

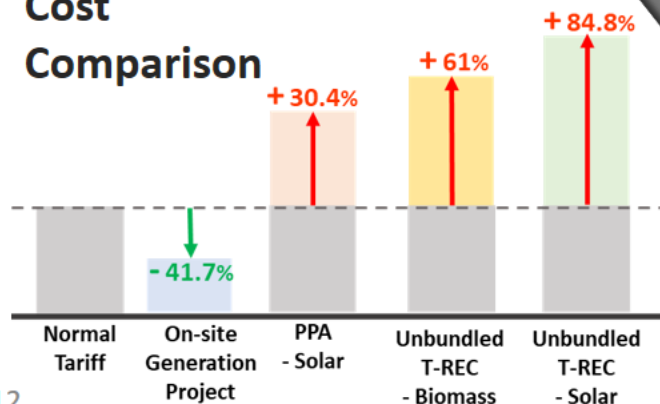
Premium
Portfolio

• **Create Impact**
- 3rd Certification
- Hourly Matching

• **Secure Stable Supply**
- Multi-Year Commitments

• **Tech Selection**

**Cost
Comparison**



Essential
Portfolio

Essential
Portfolio

Premium
Portfolio

• **Create Impact**
- 3rd Certification
- 24/7 & Hourly Matching
- Impact Project Investment

• **Contract Duration: How many years?**
- Long-Term Contracts: Ensure Supply Stability
- Short-Term Contracts: Address Fluctuating Demand

• **Which RE Category to Prioritize?**
Diversify with at least two types of renewable energy

• **Who can participate?**
- No volume restrictions
- any user with an independent meter is eligible

• **Evaluate On-site Generation Potential**

Renewable Energy Procurement Roadmap

← Unbundle T-REC

Prioritize PPA →

Persistent Low Supply ⚠
Fragmented Supply
and Management Complexity ⚠

- ⚠ Complex Agreement & Process
- ⚠ Mitigating Surplus Electricity Risks under Strict Matching Standards
- ⚠ Limited Access to Non-Solar Sources
- ⚠ Only Have Shared Meter
- ⚠ High Capex for Self-Consumption System

RE Procurement Methods in Taiwan

1 Unbundled T-REC

- * Assets and Supply Development & Management
- * Global-Local Regulatory Synergy

2 Corporate PPA (bundled T-REC)

- * Comprehensive RE Portfolio: Solar, Wind, Small Hydro, Biomass
- * Shared Meter Program
- * Sand Box Program

3 Self-Consumption Project

- * System Investment + On-Site PPA



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Empowering Your Energy Transition with W



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What We Achieved

- ⚡ Proven Supply Power: 2,000+ GWh in Contracted RE Volume
- ⚡ Bridging Every Megawatt: Taiwan's Only Provider with a Full-Spectrum RE Portfolio
- ⚡ No.1 in Unbundle Solar T-REC Transactions — Taiwan's Most Trusted Power Partner
- ⚡ Pioneering Taiwan's 1st Commercial-Scale Unbundle T-REC Transaction



Pingtung, Taiwan, Rooftop Solar 962.55 kW

Taiwan Market Insights —Mt.Stonegate

Mt. Stonegate Green Asset Management | April 22, 2026

Vivian CHUANG, Key Account Manager

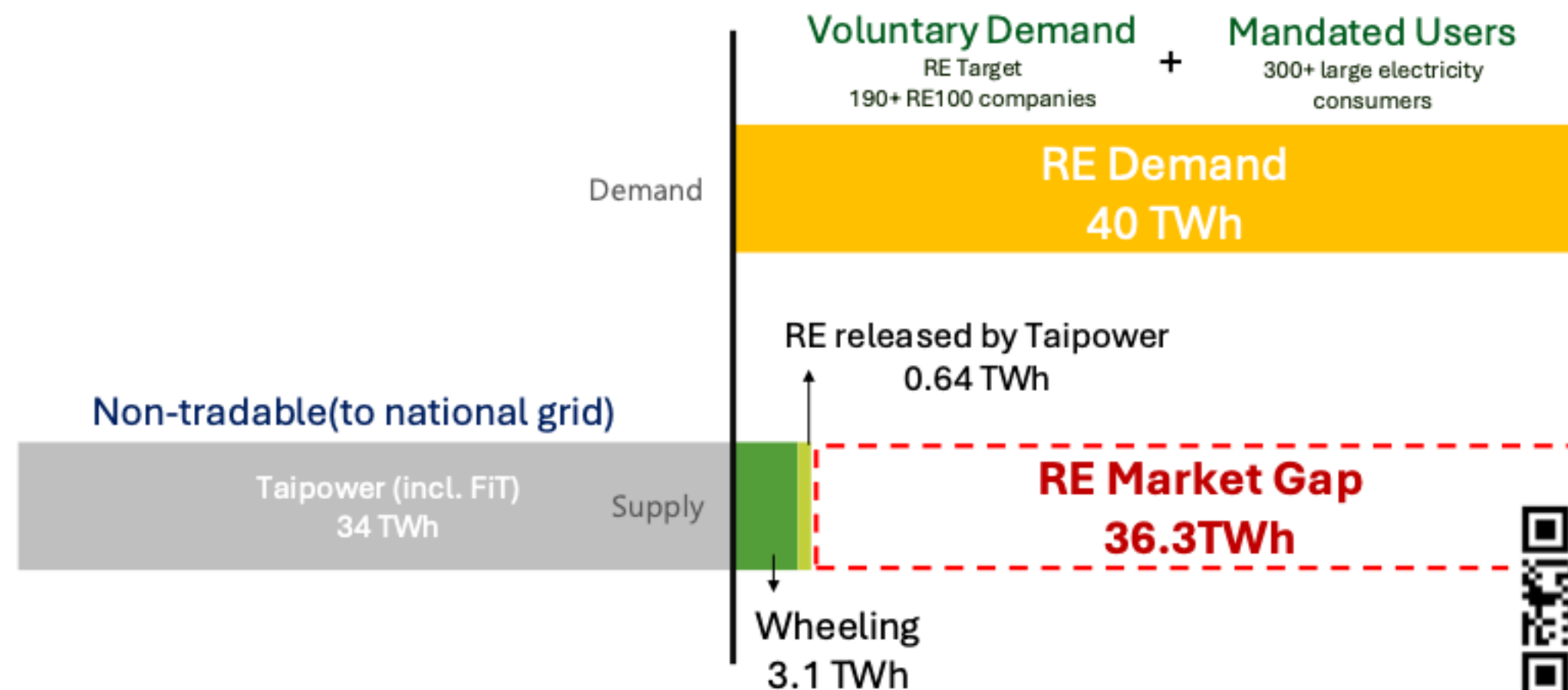


The RE Gap: Taiwan's Demand Highly Increase

Taiwan's RE Supply vs. Demand (2025)

Not available in the market

Available volume in the market



Beyond PPA: Diversifying Corporate Decarbonization Strategies

Why corporates utilize PPAs? What are the blind spots?



Saving on Electricity Bills

Ignoring hidden costs (wheeling fee, EACs admin fee, surplus, reserve capacity...)



Simply reacting to client demands

Failure to align RE strategies with specific corporate needs



Relying on a single contract to meet RE goals

Failure to evaluate surplus electricity



Belief that PPAs are the only "True" green power

Ignoring other flexible market options (e.g., EACs, Taipower programs)

Yearly consumption

> 50 GWh

Large electricity consumer
Company



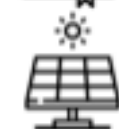
PPA

★★★★



EACs

★★



Rooftop +
Others

★★

Yearly consumption

< 49 GWh

Company



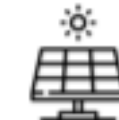
PPA

★★



EACs

★★★★



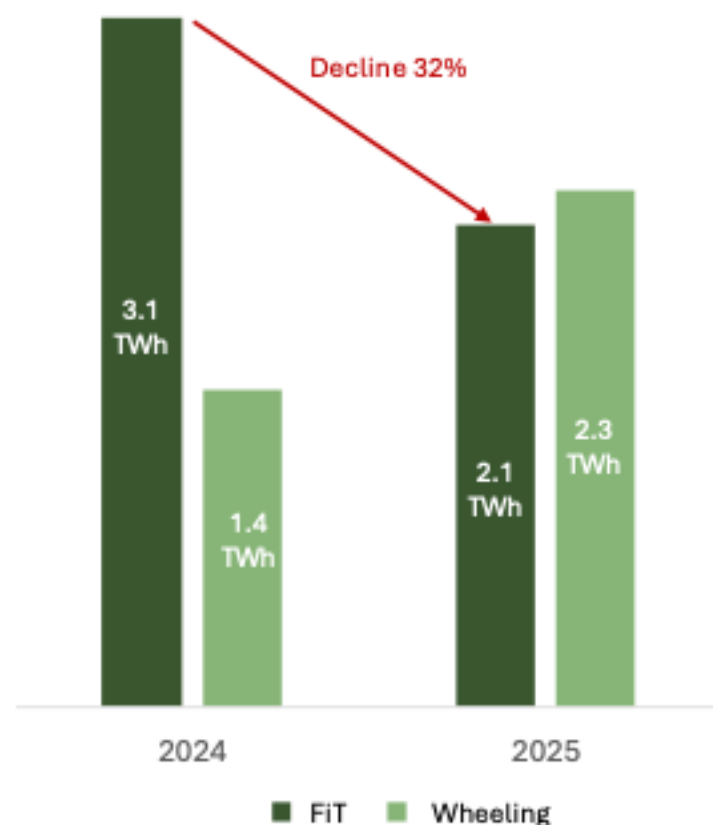
Rooftop +
Others

★★★★



Multi-Tiered Approach: Exploring Taiwan's RE Instruments

2025 Solar FiT vs.
Wheeling Volume Comparison



SupplyShift

Power plants are moving away from FiT and **entering the open market**

Market Fragmentation

Large-scale **RE supply is scarce**; most sources are small and fragmented

Volatility

Market is still evolving with ongoing uncertainties



- Single long-term contract
- Single project / site
- Single power source

*Future
Market Trends*



- Diverse contract types
- Development of small-scale projects
- Diversified energy mix

Supply and Demand imbalance: Three Constraints

Volume Constraints

- Demand far exceeds available RE supply
- Large buyers locking in long-term PPAs

↑ **30X**
Supply gap

Timing Constraints

- Available supply is mostly **forward**
- New projects take 3-5 years to materialize

5-15y
Left

Contracts Constraints

- Require long-term commitment
- Limited flexibility in pricing & structure

10y
Commitment



Corporate
Demand

Mismatch

Develop
Supply



Seizing Opportunities Through Tailored Solutions

Key Insights



**Use the right tool
- not the best in the market**

- Solutions should match your consumption
- A portfolio approach is necessary



**Don't
Overestimate market availability**

- Supply is limited, plan early
- Not always accessible, action early

Case Study - Manufacturing company

Strategies

- ✓ Started with flexibility solutions
- ✓ Gradually secured PPA before target

Approach

- + EACs
- + Utility solutions
- + PPAs



Aligning strategy with market reality

Mt.Stonegate in Asia

Want to purchase EACs in Taiwan?



Renewable Energy

International Market Instruments:

CN	TW	JP
GECs	I-RECs	NFC

- Additional Voluntary Label from **EKOenergy and Green-e**
- Taiwan **Retail electricity**
- Global **PPA in Asia**



Carbon development

CN	TW	JP
CCER	TCX	J-credits

- Sourcing **high quality carbon credits** for corporates
- Supporting project owners **develop carbon credits** from start to finish



Consultancy

Decarbonization
Roadmap

Emission
GHG Inventory

ESG
Benchmark Service

Sustainability
Trainings & Workshop



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