

Green Electricity Trading Featured by “Integration of Certificate and Power”

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Being an important step to build an electricity market mechanism adapting to the new electric power system, the National Development and Reform Commission (“**NDRC**”) and the National Energy Administration (“**NEA**”) promulgated *Guiding Opinions on Accelerating the Establishment of a Unified National Electricity Market System (“Guiding Opinions 2022”)* on January 18, 2022. The Guiding Opinions 2022 proposed to explore the implementation of nationwide green electricity trading and effective integration of green electricity trading with green certificate trading.

On top of that, the Guangzhou Power Exchange Center (“**GZPEC**”) jointly with five provincial power exchange centers in the southern region issued the *Trading Rules for Green Electricity in the South Region (for Trial Implementation) (“Southern Region Trading Rules”)*, on January 25, 2022. The issuance of Southern Region Trading Rules marks the standardized operation of synchronized trading of green electricity and green certificate, which was put into trial implementation since September 2021.¹ This article aims to give a brief introduction on the main mechanisms and major characteristics of the green electricity trading featured by “Integration of Certificate and Power”, by comparing the Southern Trading Rules and green electricity trading rules implemented by other regions of China.

Main Mechanisms for Green Electricity Trading under the Southern Region Trading Rules

According to the Southern Region Trading Rules, the main mechanisms and arrangements for the green electricity trading featured by “Integration of Certificate and Power” can be summarized as follows:

Item	Main Mechanisms and Arrangements	Item	Main Mechanisms and Arrangements
Electricity Supplier	Wind power, photovoltaic and other renewable power generation enterprises eligible for obtaining Green Certificates, mainly being the onshore centralized wind power and photovoltaic power generation enterprises at current stage.	Transaction Mode	<ul style="list-style-type: none"> • Direct trading refers to the trading conducted directly between the power generation enterprises and the electricity consumers or electricity retail companies, in accordance with the trading rules. • Subscription trading refers to the process whereby the electricity consumer establishes the subscription relationship with a power generation enterprise and obtain the green electricity through the power grid enterprise's electricity supply or purchase by proxy. The subject matter of the subscription trading shall be the on-grid electricity generated by the green power generation enterprises and purchased by the power grid enterprises under protective purchasing or proxy purchasing arrangement.
Electricity Consumer	<ul style="list-style-type: none"> • Being electricity consumers and electricity retail companies at present. Electricity retail companies participating in green electricity trading shall establish explicit agency relations with electricity consumers who have demand for green electricity. • Power grid enterprises implementing the governmental policies on protective purchase or proxy purchase of electricity may participate in green electricity trading as buyers or sellers. • Distributed power, electric vehicles, energy storage will be introduced as market players in green electricity trading in due course. 		
Trading Varieties	On-grid electricity of the wind power, solar and other green power generation enterprises with Green Certificates. Currently the subject matter of green electricity trading is electric power, and no resale or swap trading is allowed at the present stage. ²	Pricing Mechanism	<ul style="list-style-type: none"> • The price for direct trading shall be determined on a market-oriented basis according to the overall price declarations made by market players based on green electric power price and environmental benefit premium. • The price for subscription trading shall consist of electric power price and environmental benefits. The default price for electric power is the price for electricity proxy purchase adopted in the province where the electricity consumer locates. And the environmental benefit premium should be the premium on top of the price for electricity proxy purchase.

Item	Main Mechanisms and Arrangements
Performance of Trading Contract	<ul style="list-style-type: none"> The trading schedule for green electricity shall be separately documented in the trading plan which is formulated by the power exchange center based on the trading contract or trading results. The performance of contracts on green electricity trading shall be given priority.
Management of Green Certificate	<ul style="list-style-type: none"> The power exchange centers in Southern China Areas shall collect such information as trading sequences, trading results, basis for settlement and result of actual settlement in relation to green electricity trading in a timely manner and classify such information by different green power generation enterprises and projects before submitting them to GZPEC for registration and applying for the issuance and transfer of Green Certificates. The National Renewable Energy Information Management Centre (“NREIMC”) will issue Green Certificates to eligible power generation enterprises through GZPEC in batches. Upon the confirmation of concerned market players, GZPEC shall transfer the Green Certificates to relevant electricity consumers in accordance with the settlement results of green electricity trading.



Notable Characteristics of Green Electricity Trading Featured by “Integration of Certificate and Power”

Under the Southern Region Trading Rules, green electricity trading under the mode of “Integration of Certificate and Power” has distinctive characteristics. We will illustrate some of its eye-catching characteristics as follows.

Tradable Subject Matter Being Limited to Green Electricity Awarded with Green Certificates

Distinguished from the green electricity trading conducted in Beijing-Tianjin-Hebei Area and Zhejiang Province, green electricity trading featured by “Integration of Certificate and Power” under the Southern Region Trading Rules is subject to special restrictions on both the trading participant and the tradable subject matter, as “eligible for Green Certificates” is set as a precondition. The tradable subject matter under the “Integration of Certificate and Power” mode are limited to on-grid electricity generated by wind power enterprises, photovoltaic power generation enterprises and other non-hydro renewable power generation enterprises, which shall be eligible for Green Certificates, according to Article 2 and Article 16 of the Southern Region Trading Rules. The qualified on-grid electricity includes those electric power generated by wind power, photovoltaic power and other non-hydro renewable power generation enterprises who have not enjoyed governmental subsidy or voluntarily withdrew from the governmental subsidy scheme, and those electric power generated beyond the subsidy-receiving whole-life-cycle reasonable utilization hours.³

On the other hand, qualified electricity supplier is limited to centralized onshore wind power and photovoltaic power generation enterprises eligible for obtaining Green Certificates, according to Article 6 of the Southern Region Trading Rules. Distributed renewable power generation enterprises are excluded from qualified electricity supplier. In comparison, the green electricity trading conducted in Beijing-Tianjin-Hebei Area and Zhejiang Province does not completely exclude the participation by distributed renewable power generation enterprises.⁴

Green Electricity and Green Certificates Being Traded Synchronously

The most significant characteristic of green electricity trading featured by “Integration of Certificate and Power” is that the green electricity and the Green Certificates are traded synchronously. The electricity consumer will obtain the Green Certificates corresponding to the quantity of green electricity it has purchased when conducting settlement of the trading. In accordance with Article 65 and Article 66 of the Southern Region Trading Rules, GZPEC shall be responsible for registering the trading sequences, trading results, settlement basis and results of actual settlement for green electricity trading, applying for Green Certificates, and distributing the Green Certificates issued by the NREIMC to the power generation enterprises participating in the trading. Then GZPEC shall transfer the Green Certificates to relevant electricity consumers according to the settlement results of green electricity trading.

Under the “Integration of Certificate and Power” mode, the economic value and environmental benefit of green electricity will be realized simultaneously, as the purchasers of Green Certificates are the actual consumers of green electricity. Compared with the green electricity trading conducted in Beijing-Tianjin-Hebei Area and Zhejiang Province, the green electricity trading featured by “Integration of Certificate and Power” ensures that the whole life cycle of green electricity from its production, transaction to its consumption is traceable, measurable and verifiable, by relying on the unified national green certificate system and the green electricity verification services provided by the NREIMC.

Multiple Trading Methods Being Open to Market Players

According to Article 15 and Article 17 of the Southern Region Trading Rules, green electricity trading featured by “Integration of Certificate and Power” is classified into (A) direct trading where electricity consumers (or electricity retail companies) trade directly with renewable power generation enterprises, and (B) subscription trading where electricity consumers subscribe green electricity from renewable power generation enterprises via electricity supply or purchase by proxy by the power grid enterprises. By locations of market players, green electricity trading can also be classified into inter-provincial trading and intra-provincial trading.

In the green electricity trading conducted in Beijing-Tianjin-Hebei Area and Zhejiang Province, Zhejiang Province imposed requirements of voltage registration and annual electricity consumption for electricity consumers participating in green electricity trading,⁵ while in Beijing-Tianjin-Hebei Area, electricity consumers shall meet certain access requirement.⁶

Such access requirement, to some extent, have restricted the small and medium-sized electricity consumers from purchasing green electricity. Differently, the Southern Region Trading Rules sets no access requirement for electricity consumers. In addition, the subscription trading under the Southern Region Trading Rules provides an alternative way for electricity consumers to purchase green electricity. We noticed from a recent news coverage,⁷ that Bo'ao Asia Forum Hotel, being the operator of the meeting venue of Bo'ao Forum for Asia, has purchased 1 million kWh green electricity to meet the electricity consumption demand during the Bo'ao Forum for Asia in 2022, by participating in the subscription trading for green electricity organized by GZPEC on 13 April 2022.

Conclusion

Compared with the green electricity trading modes adopted in some other regions of China, the green electricity trading featured by "Integration of Certificate and Power" and governed by the Southern Region Trading Rules has distinctive characteristics and advantages. With the continuous exploration and innovation of green electricity trading by market players, market operators, and market regulators, it is highly possible that "Integration of Certificate and Power" will become the mainstream of green electricity trading in China.

¹ In September 2021, the NDRC and the NEA will issue the Reply to the Work Plan for a Pilot Trading of Green Electricity, agreeing to carry out the pilot program for green electricity trading simultaneously at the Beijing Power Trading Center and the Guangzhou Power Trading Center.

² Contractual trading includes contractual transfer trading and contractual replacement trading. Contractual transfer trading refers to the transfer of all or part of the subject matter of the contract between market players. And contractual replacement trading refers to adjustment of the traded electric power quantity at different time periods with the total quantity of the subject matter of transaction remains unchanged.

³ Electric power involved in green electricity trading and generated by wind power, photovoltaic power and other power generation enterprises before their reaching the whole-life-cycle reasonable utilization hours shall not be counted into the reasonable utilization hours and shall not receive governmental subsidies temporarily.

⁴ According to the Implementation Plan of Zhejiang Province for Market-Oriented Trading of Green Electricity jointly issued by Zhejiang Provincial Development and Reform Commission and Zhejiang Energy Administration in April 2021, power generation enterprises participating in the pilot green electricity transactions include the enterprises that are exempted from the power business permit (power generation) and those using solar power, wind power and other non-hydro renewable energy resources under provincial unified planning.

⁵ According to the Implementation Plan of Zhejiang Province for Market-Oriented Trading of Green Electricity jointly issued by Zhejiang Provincial Development and Reform Commission and Zhejiang Energy Administration in April 2021, the scope of electricity consumers participating in green electricity trading is limited to those specified in the Work Plan of Zhejiang Province for Direct Electricity Transactions in 2021. The Work Plan of Zhejiang Province for Direct Power Transactions in 2021, sets out different voltage levels and annual electricity consumption requirements for electricity consumers participating in ordinary direct transactions and electricity consumers participating in transactions in the electricity retail market.

⁶ Article 2 of the Rules on Market-oriented Trading of Green Electricity in the Beijing-Tianjin-Hebei Area defines green electricity trading as "medium and long-term electricity trading between electricity consumers entering the market and renewable power generation enterprises connected to the grid", and Article 7 thereof states that market players include "electricity consumers meeting the access conditions".

⁷ Please refer to <http://tv.cctv.com/2022/04/20/VIDEkoTecO1U8xb7cCRFXALJ220420.shtml> for more details.

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