

Green Electricity Trading Integrated with Renewable Energy Consumption

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To promote the development and utilization of renewable energy, the National Development and Reform Commission (“**NDRC**”) and the National Energy Administration (“**NEA**”) issued the *Notice of the Establishment of a Renewable Energy Consumption Guarantee Mechanism* (“Notice”) in May 2019. The Notice not only emphasizes the obligated utilization percent for renewable energy consumption (i.e., renewable energy shall account for a certain proportion of electricity consumption), but also proposes to integrate the consumption duty for renewable energy with the renewable energy trading (i.e., green electricity trading).

As a reform pioneer, Guangdong Province took the lead in exploring the integration of green electricity trading and the guaranteed consumption of renewable energy at the provincial level. In April of 2021, the *Guangdong Power Exchange Center* (“**GPEC**”) released the *Renewable Energy Trading Rules of Guangdong Province (for Trial Implementation)* (“**Trading Rules**”). We will briefly introduce and analyze the green electricity trading under the Trading Rules.

MAIN MECHANISMS FOR GREEN ELECTRICITY TRADING UNDER THE TRADING RULES

The green electricity trading under the Trading Rules refers to the medium and long term trading of renewable energy electric power conducted by market players through mutual consultation or otherwise. Below is a summary of such mechanisms and arrangements:

Item	Main Mechanisms and Arrangements
Purchasers and Sellers	<ul style="list-style-type: none">• Qualified power generation enterprises shall be the wind, solar and biomass energy, and other renewable energy power projects in Guangdong Province. These projects shall meet grid connection standards and their filed capacity shall have been fully put into production.• Qualified electricity consumers shall include large consumers and general consumers. The general consumers can only participate in trading through electricity retail companies.¹• Qualified electricity retail companies shall meet the access requirements set by the State and Guangdong Province. Electricity retail companies shall also be listed in the catalogue of permitted electricity retail companies of Guangdong Province.²
Implementation of Trading	<ul style="list-style-type: none">• Green electricity shall be traded on yearly and monthly basis by negotiation between both parties.• Listed trading on monthly basis will be introduced when appropriate.
Main Trading Types	<ul style="list-style-type: none">• Wholesale trading, which is directly conducted between power generation enterprises and wholesale consumers, includes yearly and monthly basis trading via negotiation between both parties.• Retail trading is implemented where electricity retail companies sign retail contracts and carry out electric power trading with retail consumers (i.e., large electricity consumers and general electricity consumers engaging in trading through electricity retail companies).

1 In accordance with Article 28, Article 29 and Article 30 of the Trading Rules, the large consumers may choose to participate in the green electricity trading directly or through the electricity retail companies, while the general consumers may participate in the trade only through the electricity retail companies. And the large consumers directly participating in the trading are also called wholesale consumers, and the large consumers participating in the trading through the retail companies and the general consumers are collectively called retail consumers. A retail consumer may choose only one retail company as agency to purchase electricity at one time.

2 Please refer to the relevant provisions of the *Administrative Measures on Electricity Retail Companies*, the *Administrative Measures on Access and Exit of Electricity Retail Companies* and the *Implementing Rules of Guangdong Electricity Market Administration*.

Item	Main Mechanisms and Arrangements
Pricing Mechanism	<ul style="list-style-type: none"> Trading prices shall be decided by market players through market-oriented trading without intervention from third party. Different power purchasing prices are applied to the electricity consumers which are subject to the two-part tariff, flat-rate tariff or peak and off-peak tariff respectively.³

NOTABLE FEATURES OF GREEN ELECTRICITY TRADING UNDER THE TRADING RULES

As the Trading Rules is formulated under the background of implementing the guaranteed consumption of renewable energy, the green electricity trading regulated thereby to some extent is to promote the consumption of renewable energy. Such background and legislative purpose make the mechanisms and arrangements of the green electricity trading under the Trading Rules distinguished from those carried out under the green electricity trading pilot program in Zhejiang Province and under the *Green Electricity Trading Pilot Program* approved by the NDRC and the NEA. Below is a brief introduction to two notable features of green electricity trading under the Trading Rules.

Connection between Green Electricity Trading and Renewable Energy Consumption Responsibility

In addition to the mechanisms and arrangements of green electricity trading, the Trading Rules also provides rules for the transfer and trade of renewable electricity consumption volume by market players (including power grid enterprises, electricity retail companies, wholesale electricity consumers, etc.) who are responsible for the consumption of renewable energy. According to Article 10 and Article 17 of the Trading Rules, the actual settled electricity quantity of green electricity trading can be counted as the consumption quantity of renewable energy. And upon verification, the relevant market players may obtain the certificate of renewable energy consumption, which can be used to prove their fulfillment of the responsibility of renewable energy consumption. For retail trading of green electricity, electricity retail companies may, based on the retail contract, declare the consumption volume of renewable electricity to GPEC, and GPEC will issue a certificate of renewable electricity consumption to the retail consumers, according to article 48 of the Trading Rules.

In January 2022, NDRC and other six governmental departments jointly issued the *Green Consumption Proposal* with an aim to establish a mechanism integrating green electricity trading with obligated utilization percent for renewable energy consumption. Under this mechanism, market-oriented electricity consumers are able to fulfil their respective obligated utilization percent by purchasing green electricity. The mechanism for integrating the green electricity trading with renewable energy consumption responsibilities under the Trading Rules is a good attempt. It helps to promote the full consumption of renewable energy through market-oriented trading of green electricity.

3 In accordance with the Article 33 of the Trading Rule, the power purchase price for the large consumers subject to two-part tariff consists of the capacity power price and the electric power price. The capacity power price remains unchanged, and the electric power price shall be the total amount of the electric power price in the applicable price catalog and the trading price difference. The large power consumers subject to the flat-rate price shall purchase power at a price that is not higher than the total of the electric power price in the applicable price catalog and the trading price difference. The trading price difference of the large power consumers subject to the policy of peak and off-peak tariff shall not float with the peak and off-peak tariff. The preceding terms and conditions apply to power consumers who purchase electricity through electricity retail companies.

Differences and Connections between Green Electricity Trading under the Trading Rules and Green Electricity Trading Implemented in the South Region

After the release of the Trading Rules by GPEC in April 2021, the NDRC and the NEA approved the *Green Electricity Trading Pilot Program* ("**Pilot Program**") in September 2021. According to the Pilot Program, the Guangzhou Power Exchange Center, and the power exchange centers of five provinces in China's southern region jointly released the *Trading Rules for Green Electricity in the South Region (for Trial Implementation)* ("**Trading Rules for Southern Region**") in January 2022. There are differences and interconnections between the green electricity trading under Trading Rules and Trading Rules for Southern Region, which are illustrated as follows.

Firstly, unlike the Trading Rules, green electricity trading under the Trading Rules for Southern Region is featured by "Integration of Certificate and Power", whereby green certificates and green electricity are traded simultaneously.

Secondly, the mechanisms and arrangements for green electricity trading are different under the Trading Rules and Trading Rules for Southern Region. For example, the price of green electricity under the Trading Rules does not include environmental benefit premium⁴. The green electricity trading under the Trading Rules for Southern Region is limited to the on-grid electricity of concentrated solar projects and wind power projects with green certificates, excluding biomass energy and hydro power generation.

Thirdly, there is interconnection between the two modes of green electricity trading. In accordance with the Trading Rules, the green certificate obtained by an electricity consumer under the mode of "Integration of Certificate and Power" can be converted into the renewable energy consumption volume, which can be counted in the assessment on fulfilment of renewable energy consumption responsibilities.⁵

Given that the Trading Rules and the Trading Rules for Southern Region both apply to Guangdong Province, it is noteworthy how these two trading rules will work with each other in the future.

CONCLUSION

With the goal of building a new electric power system with stronger renewable energy consumption being gradually achieved, the Trading Rules' mission to facilitate the guaranteed consumption of renewable energy will be completed. Meanwhile, the development of the green electricity trading practice in China and the final establishment of a unified national electricity market, will lead to the rollout of a unified green electricity trading rules.

Disclaimer:

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4 According to Article 25 of the Trading Rules for *Green Electricity in the South Region (for Trial Implementation)*, the direct trading price of green electricity shall be determined in market-oriented ways based on the filing information of the market players on the price for green electricity and the overall price for environmental benefit premium. Whilst, power consumers subject to the two-part tariff, flat-rate price or peak and off-peak tariff shall adopt different electricity purchasing prices respectively, according to Article 33 of the *Renewable Energy Trading Rules of Guangdong Province (for Trial Implementation)*.

5 Please refer to Article 8 of the Trading Rules for details.

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