

Key Terms and Major Legal Risks for Direct Trading of Green Electricity

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In recent years, an increasing number of electricity consumers have participated in direct trading of green electricity, whereby electricity consumers directly entered into trading contracts with power generation enterprises, with a growing demand for green electricity. Thus, the risks associated with the conclusion and performance of the contract for green electricity trading are noteworthy to electricity consumers. This article seeks to briefly introduce the key terms of the contracts for green electricity trading and the major risks that may occur during the contractual performance, based on the green electricity trading practice in China.

How is the Contract for Green Electricity Trading structured?

So far, there is no unified template contract for green electricity trading, although the pilot implementation of green electricity trading has been carried out in China under different modes at national and local levels. Telling from the trading practice in various regions in China, green electricity trading is generally based on the medium and long-term electricity trading. The same framework of medium and long-term electricity trading applies to the direct trading of green electricity, whereby a Tripartite Master

Agreement will be signed by power generation enterprise, power grid enterprise and electricity consumer. And the Electricity Supply and Utilization Contract between the electricity consumer and the power grid enterprise, will be annexed to the Tripartite Master Agreement, together with the Electricity Purchase and Sale Contract and the Grid Connection and Dispatch Agreement between the power grid enterprise and power generation enterprise (collectively “**Annex Agreements**”). Such Annex Agreements mainly focus on the operation safety and technical clauses, while the commercial clauses related to the purchase, sale, transmission

and distribution of green electricity are usually specified in the Tripartite Master Agreement, which are well exemplified by the *Zhejiang Green Electricity Trading and Power Transmission and Distribution Service Contract (2022 Version) (Draft for Comments)*¹ released recently.

How is the Contract for Green Electricity Trading concluded?

According to the pilot plans, implementation measures and trading rules for green electricity trading as released by multiple power exchange centers in China, normally the trading contract for green electricity trading shall be concluded in the form of electronic contract. Meanwhile, the market access agreement, trading announcement, trading results provided by the power exchange centers through the trading platform will also be deemed as integral parts of electronic contract for green electricity trading.

Nonetheless, an electricity consumer may still sign a paper contract with a power generation enterprise. The pilot plan for green electricity trading in Zhejiang Province provides for a more flexible way by allowing electricity consumers, power generation enterprises and power grid enterprises to establish contractual relationship by signing a trading commitment letter and acknowledging the trading announcement and trading result.

What are the key contractual terms and legal risks for green electricity trading?

A contract for green electricity trading normally consists of terms and conditions covering the parties, electricity volume, electricity price, execution period, settlement method, measurement and assessment of deviated electric power, liability for breach of contract, and other commercial and technical issues related to the purchase and sale, transmission and distribution of power, according to the pilot plans, implementation measures and trading rules for green electricity trading as released by multiple power exchange centers in China.

On the other hand, the pilot green electricity trading currently carried out in China is based on the framework of medium and long-term electricity trading, which results in a relatively long period of contract performance. When participating in direct trading of green electricity, electricity consumers shall pay attention to the major potential legal risks and take prevention measures in advance.

In view of the aforesaid, we would like to share some observations on the key contractual terms and associated legal risks based on our understanding of the implementation rules and current practice of direct trading of green electricity in various regions of China.

1. For example, in September 2021, the NDRC and the National Energy Administration ("NEA") issued the Reply to the Work Plan for a Pilot Trading of Green Electricity, agreeing to conduct green electricity trading featured by "Integration of Certificate and Power" at the Beijing Power Exchange Center and the Guangzhou Power Exchange Center. On April 29, 2021, the Zhejiang Provincial Development and Reform Commission ("ZDRC") and the Zhejiang Provincial Energy Administration ("ZEA") issued the Implementation Plan of Zhejiang Province for Market-Oriented Trading of Green Electricity. The Guangdong Power Exchange issued the Renewable Energy Trading Rules of Guangdong Province (for Trial Implementation) in April 2021, which took the lead in exploring green electricity trading that are aligned with the guaranteed consumption of renewable energy at the provincial level.

Volume of Traded Electricity vs. Risks Brought by Power Generation Enterprise's Failure to Supply the Agreed Volume

Volume of traded electricity refers to the quantity of green electricity purchased by an electricity consumer from a power generation enterprise under the trading contract. Power generation enterprises shall perform the obligation of delivering green electricity to electricity consumers in accordance with the agreed volume in the trading contract and settle the price with the electricity consumers accordingly.

The clause on volume of traded electricity is crucial in the contract for green electricity trading. It shall be formulated by the electricity consumer and power generation enterprise based on electricity consumption demand and power generation capacity. And the capacity of power transmission by power grid enterprises shall also be taken into consideration when deciding the volume of traded electricity, so as to avoid possible inability to pass the security checking and optimal correction by power dispatching institutions. Normally, the traded electric power shall be split by time and stages as agreed by electricity consumer and power generation enterprise, depending on the electricity consumption load of electricity consumer and the typical load curve of power grids. For example, in the *Zhejiang Province Green Electricity Trading and Power Transmission and Distribution Service Contract (Edition 2022) (Draft for Comments)*, it is stipulated that the volume of traded electricity under the contract shall be divided in monthly tranches and determined in accordance with relevant regulations.²

Currently, the subject matter of green electricity trading in China is mainly the on-grid electricity of non-hydro renewable energy such as solar power and wind power. The green electricity generated by solar and wind power is unstable, as solar and wind power generation is restricted by multiple natural factors. In addition, the failure or maintenance of

power generating units, transmission interruption and other factors may also make it impossible for power generation enterprises to supply the agreed volume of electricity to the electricity consumers as scheduled by the trading contract.

To mitigate the risk brought by power generation enterprise's failure to supply the agreed volume of electricity, power generation enterprise may assign its obligation to supply the deficient volume to a third party when it is unable to perform, and then the third party will supply electricity to the electricity consumer, which is allowed by implementation measures and pilot plan issued by Beijing Power Exchange and Zhejiang Province. However, such contract assignment is not allowed under green electricity trading carried out under the *Trading Rules for Green Electricity in the South Region (for Trial Implementation)*.³

For electricity consumers, it is advisable to make a forecast for electricity supply capacity and consumption volume with power generation enterprises before signing the trading contract, and incorporate such flexible adjustment clauses as breaking down the traded volume by time and stage, and allowing the swaps of volumes in different time and stages. On the other hand, electricity consumers should try to avoid the occurrence of electricity volume deviation during the performance of green electricity trading contract. In pilot areas for spot trading of electricity, electricity consumers may also consider purchasing green electricity from the spot market, if the volume of electricity supplied by power generation enterprises is unable to meet their consumption demand.

2. Article 4.1 of the Zhejiang Province Green Electricity Trading and Power Transmission and Distribution Service Contract (Edition 2022) (Draft for Comment) stipulates that "the monthly transacted electricity quantity under the contract shall be determined in accordance with the relevant provisions of the Notice on Effectively Carrying Out the Work Relating to Market-oriented Electricity Trading in Zhejiang Province in 2021 (ZEA [2021] No. 616), the Supplementary Notice on Effectively Carrying Out the Work Relating to Market-oriented Electricity Trading in 2022 and other relevant provisions".
3. According to Article 16 of the Trading Rules for Green Electricity in the South Region (for Trial Implementation), the subject matter of green electricity trading at the present stage is mainly electric power, and no contract assignment is allowed temporarily.

Purchase Price vs. Risks Brought by Price Fluctuation

Purchase price refers to the consideration for traded green electricity under the trading contract reached between electricity consumer and power generation enterprise through bilateral negotiation, centralized bidding, or listing for quotation, etc.

The composition of purchase price for green electricity varies in the trading practice in different regions of China. For example, under the *Trading Rules for Green Electricity in the South Region (for Trial Implementation)*, the purchase price for direct trading of green electricity encompasses the price for green electronic power itself and the overall price of environmental premium. In some regions where the green electricity trading is conducted under the framework of medium and long-term electricity trading, the purchase price is decided by electricity consumer and power generation enterprise through market-oriented trading, while there are no express provisions on the inclusion of environmental premium into the purchase price.

Electricity consumer may determine the purchase price for traded green electricity with power generation enterprise through negotiation. It is noteworthy that the green electricity trading rules and implementation plans in some regions impose restriction on the purchase price. For example, the purchase price for green electricity may be subject to upper and lower limits as determined by reference to the on-grid tariff for coal-fired power.⁴

In practice, electricity consumers often negotiate a fixed purchase price with the power generation enterprise when signing the contracts for green electricity trading. For example, in the green electricity trading contract signed by BASF (the well-known multinational chemical company) and Brookfield under the *Renewable Energy Trading Rules of Guangdong Province* recently, the purchase price was fixed on the basis of Levelized Cost of Energy (“**LCOE**”) standard. The purchase price for green electricity supplied to BASF shall be determined according to the LCOE of Brookfield’s renewable energy project which is under development.⁵

Although the trading rules and implementation plans for green electricity trading in some regions of China impose upper and lower limits on purchase price, the fluctuation of the market price of green electricity will still affect electricity consumers’ cost for purchasing green electricity. For example, when the market price of green electricity declines, it will be disadvantageous for electricity consumers to continue to apply the fixed price in the trading contract.

In respect of the risk caused by market price fluctuation, we suggest that electricity consumers consider setting up a flexible price adjustment mechanism in the trading contract, linking the purchase price with the market price to reduce the adverse impact of market price fluctuation. For example, electricity consumers and power generation enterprises may agree on a dynamic price adjustment mechanism, under which the market price shall automatically apply when the market price for green electricity in the same period is lower than the purchase price specified in the trading contract.

4. For example, the Announcement on the Bilateral Negotiation Trading of Green Electricity of Jiangsu in April 2022 issued by the Jiangsu Power Exchange Center provides that the market price formation mechanism of “benchmark price + fluctuation” shall be implemented, and “the price fluctuation range shall base on the benchmark price of coal-fired power generation, which shall not exceed 20% in principle.”
5. Levelized Cost of Energy (LCOE) refers to the ratio of the total cost of a renewable energy project (including capital and operating cost) to the expected total power generation volume in the life cycle of the project.

Settlement of Deviated Electricity Volume vs. Liability for Electricity Volume Deviation

During performance of the contract for green electricity trading, the actual electric power consumed by electricity consumers may deviate from the contracted volume, i.e., electricity volume deviation may occur, due to inaccurate prediction of electrical load, power outage, power dispatching and other reasons. To enhance the efficiency of electricity trading and promote the orderly consumption of electricity, power exchange centers will monitor and assess the deviated volume of electric power occurred during the electricity trading. A deviation assessment fee will be charged for the deviated volume of electric power beyond the tolerated scope, i.e., liability for the electricity volume deviation will be imposed. The assessment and settlement of deviated electricity volume are likely to occur during the performance of the contract for green electricity trading, and concern the rights and interests of electricity consumers and power generation enterprises, thus shall be clearly specified in the trading contract.⁶

The power exchange centers in regions where green electricity trading is under pilot implementation have all formulated guidelines for the settlement of deviated electricity volume and the liability for the deviation assessment fee. However, electricity consumers may still agree on favorable terms with power generation enterprises in the trading contract. For instance, the deviation assessment fee not attributable to the electricity consumers shall be borne by the power generation enterprise. And the positive electricity deviation (i.e., the consumed electric power beyond the contract volume) within a specified range shall still be settled per agreed purchase price in the contract.

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Conclusion

The National Development and Reform Commission ("NDRC") and other six governmental departments jointly issued the Green Consumption Proposal in January 2021, proposing to "guide electricity consumers to sign green electricity trading contracts". The signing and performance of contracts for green electricity trading is becoming increasingly important with the growing demand for green electricity in China. The risks brought by green electricity trading are more complex, so market players need to put more efforts on risk management. If market players fail to properly understand the risks associated with green electricity trading and formulate reasonable and effective risk prevention strategies at the time of concluding the contract, they are likely to face such adverse situations as breach of contract and even suffer losses. Therefore, we suggest that market players seek assistance from professional lawyers at the time of conducting green electricity trading and concluding trading contracts, so as to lower potential risks and to maximize their commercial interests.

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6. For example, the Detailed Rules for Settlement of Jiangxi Electricity Market Electricity Price 2020 issued by Jiangxi Power Exchange Center explicitly stipulates that the allowable deviation range for power generation enterprises, power retail companies and large electricity consumers is $\pm 5\%$, and for the electric power beyond the permitted deviation scope in the contract, the deviation assessment fee shall be paid in accordance with 5% of the weighted average price of the adjusted up or down serving electric power at the power generation side.