

Establishing a Competitive Power Market in China

Power Sector Roundtable Serial Reports

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Current information of China's Power Market

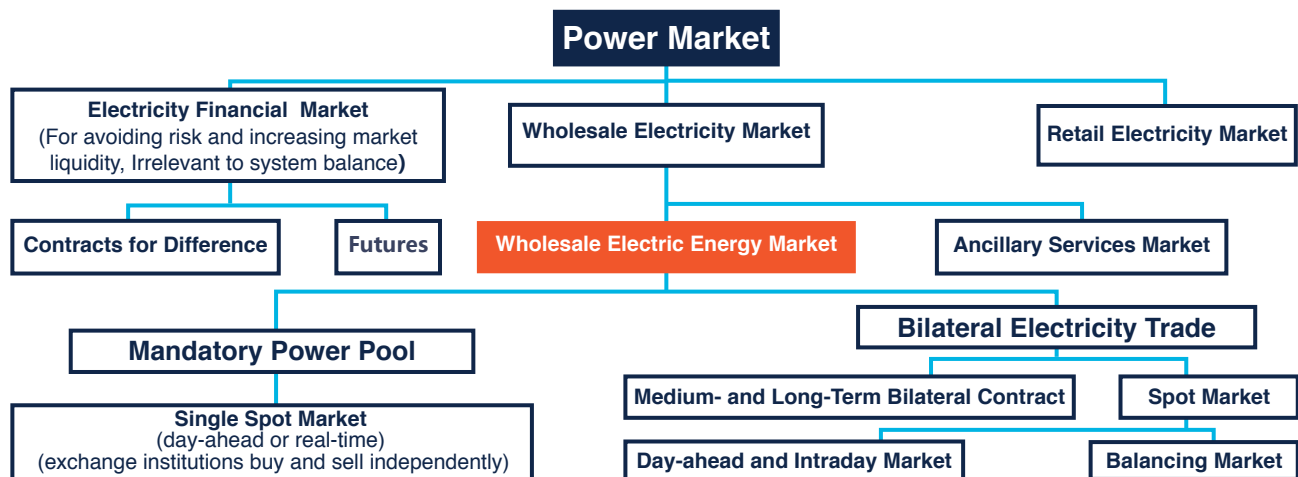
Achievements

- **Power Generation Side** | A competitive market has been formed; The competition scope is expanding.
- **Power Selling Side** | The rudiment of competition has emerged.
- **Consumption Side** | The entry thresholds are lowered
- **Power Trading Market** | The transaction scale is expanded; The institutional structure is established; The spot market has begun to be piloted; The concept of the spot market is well accepted.
- **Power Trading Price** | Various mechanisms have been developed; The effectiveness of price reduction is remarkable.

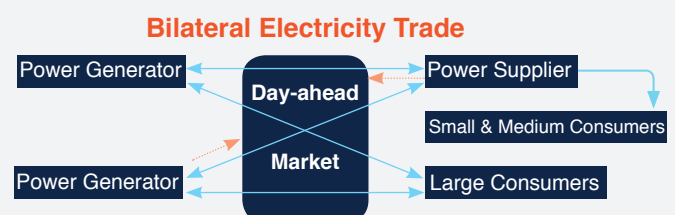
Challenges

- The current "market-based trading" is **not completely free**, which **lacks a balancing mechanism**, and is **not sustainable**.
- Most electricity sellers have no electricity to sell.
- There is a **confused understanding** of "centralized" and "decentralized" trading patterns.
- The theoretical and institutional preparations for the "spot market pilot" are insufficient.

Basic Principles of Power Market Establishment



Operation Framework of Electricity Wholesale Market



- **Mandatory:** Generators can only sell electricity to the system operators by engaging in competition.
- **Single Direction:** Generators compete to sell electricity while loaders do not compete to buy electricity.
- **Single Market:** Only spot market (real-time or day-ahead) exists and there is no medium and long-term trading of electricity.
- **Centralized:** System balance depends on centralized arrangement.

- **The trading is free.** Buyers and sellers can participate in both over-the-counter and organized day-ahead transactions.
- In the **double-direction competition**, the price is decided by both buyers and sellers.
- The responsibility for the system imbalance caused by the deviation of contract execution is **borne by the traders themselves**.

Systematic Thinking on Power Market Establishment

The Initial Phase of China's Power Market

A stable & controllable **Mandatory Power Pool**

- All power generators must trade in power pool, with a portion of the electricity cleared at market price
- A valley load (load reduction) market is to be constructed first

Wholesale
Electricity
Market

Bilateral Trade based on the balance mechanism

- Bilateral Trade + Balance Mechanism
- Free trading, self-responsibility

Implementing step-by-step, or suspending temporarily

- Ensuring the linkage between government regulated price and wholesale market price

Retail
Electricity
Market

Consumers have **full freedom of choice**

- Direct participation of consumers helps to reflect the dynamic changes of market supply and demand

China's Ideal Power Market

Policy Recommendations on China's Power Market

o Integrating the renewable energy support policies with competitive power markets

- As for the existing projects, the price is deregulated and fixed subsidies are provided.
- As for the new projects, the price is deregulated and subsidies are provided by bidding.
- In the transitional stage, the price is determined by the feed-in tariff of locally dominant energy and fixed subsidies are provided.

o Integrating the "West-East Electricity Transfer Project" with competitive power markets

- Such strategies can be integrated into the relevant provincial electricity markets through government authorized contracts and contract-for-differences (CFD) settlements.

o Integrating the province-bound mandatory power pool with interprovincial trade

- An interprovincial joint venture involving regional operators should be established.
- Trans-provincial transactions should take precedence over intra-provincial transactions.

o Arranging and improving the market management institutions

- The transaction center and dispatch center should be co-located in a public agency.
- The market management committee should be located in a deliberative institution.

o Dissolving the market dominance

- There exist four approaches to dissolve the power of market-dominant companies, including mandatorily purchasing their partial electricity at the contract price, demanding them to lease some units to their competitors, clearing partial electricity at the market price, and applying government authorized contracts and contract-for-differences (CFD) settlements to imported electricity.

o Improving relevant supporting measures

- Problems brought by the cross-subsidization of electricity prices should be dealt with properly.
- An effective electricity regulatory institution should be rebuilt.



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