



AVIC-INT'L Project

– A Chinese Perspective on Power



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About AVIC INT'L

1	Who are AVIC INT'L ?
2	Brief Introduction of AVIC Group
3	Our Achievements



- Large scale state-owned enterprise
- Founded in 1979
- Top ranking of 10 largest foreign trade companies in China
- More than 30,000 employees
- Turnover in 2010: more than 60 billion RMB
- Import & Export Volume: 5 billion USD

58 Rep. Offices and Overseas Companies in **35** countries

AFRICA

Angola
Algeria
Egypt
Ethiopia
Kenya
Mauritania
Nigeria
Sudan
Tanzania
Uganda
Zambia
Zimbabwe

ASIA PACIFIC

Australia
Bangladesh
Pakistan
Singapore
Myanmar
Sri Lanka
Fuji
Thailand

MIDDLE-EAST

Iran
Jordan
Kuwait
U.A.E.

EUROPE

UK
France
Germany
Russia
Turkey

AMERICA

Venezuela
Cuba
Peru
U.S.A.

6 Business Segments

- A professional team
- Rich experience in international market exploration
- Integrate superior resources backed by China aviation industry



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- China Aviation Industry Corporation (AVIC) is an ultra large state-owned enterprise as well as an investment institution which is authorized and managed by the Chinese Government
- It has nearly 200 subsidiaries (branches) and over 20 listed companies with more than 350 thousands employees
- AVIC has been among top 500 companies in the world for more than 5 years

AVIATION INDUSTRY COPORATION OF CHINA



fighter



Subcontract for Boeing & Airbus



Subcontract for Boeing & Airbus

Gas
Turbine



AVIC INTERNATIONAL

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Summary

- Mainly focused on Government to Government Projects
- Have already successfully done many big projects in Kenya, Zambia, Egypt, Turkey, etc. The total value has reached to about 1 billion US Dollars in 2010
- Endeavored to develop transportation (vehicles, railways & subways, etc), exploitation and utilization of energy resources, complete sets of equipment and high-tech product export



AVIC also gives deep attention to educational projects – which must go hand in hand with the delivery of advanced technology. In May 2010, AIVC INT'L signed \$130,000,000 Vocational Training Laboratory Contract with the Kenyan Ministry of Higher Education, Science and Technology.





AVIC INTERNATIONAL PROJECTS INCLUDE:

- 1) TURNKEY NEW TOWN PROJECTS (JORDAN TOP LEFT);
- 2) AIRPORTS & RELATED INFRASTRUCTURE (RIGHT);
- 3) WORLD-SCALE BUILDINGS (THE DUBAI TOWER, BOTTOM LEFT)



Power is one of the main business of AVIC INT'L. We have signed individual Thermal Power Plant Contracts in Turkey & Egypt & we are developing projects & partnerships in Sub-Saharan Africa



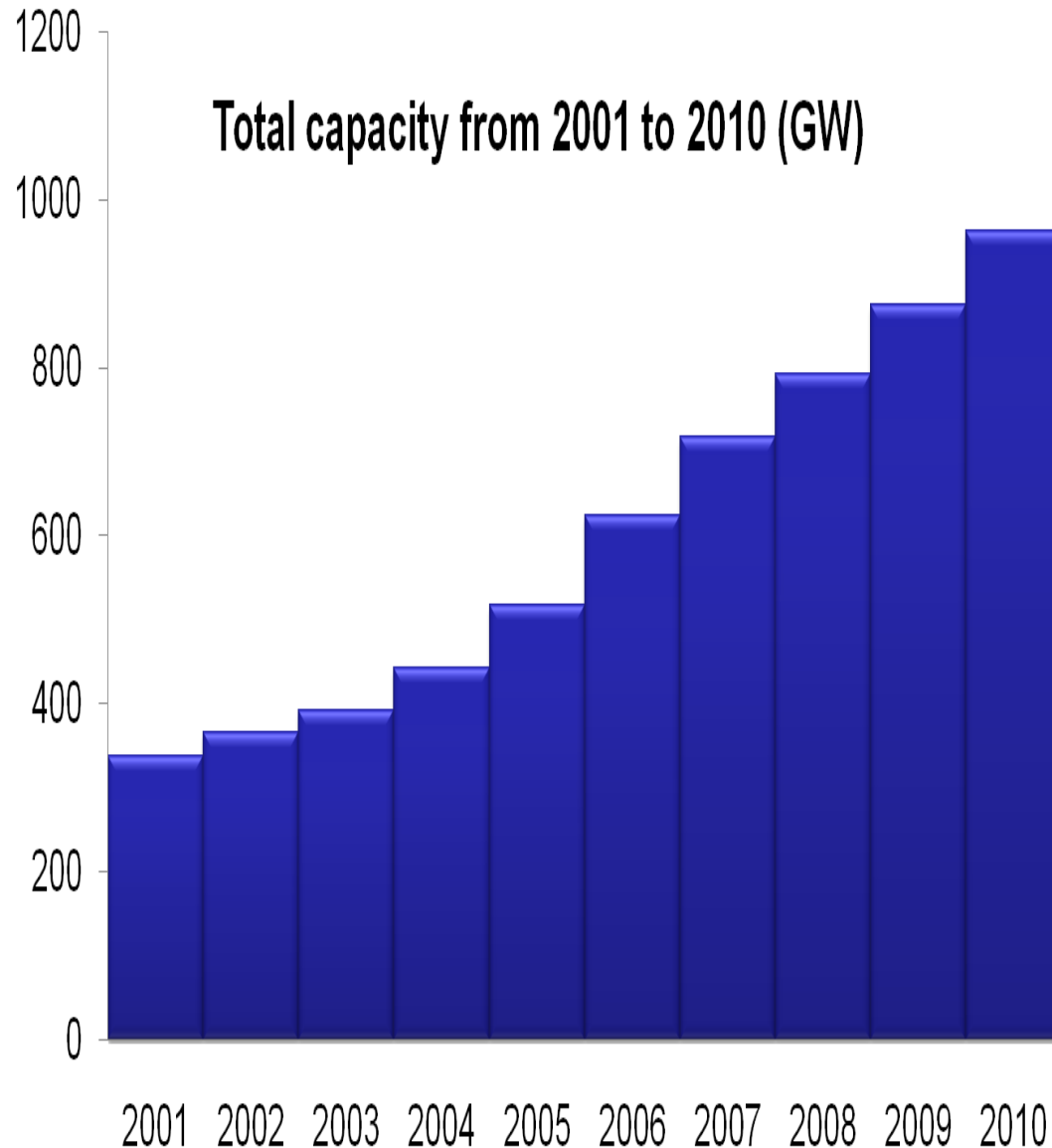
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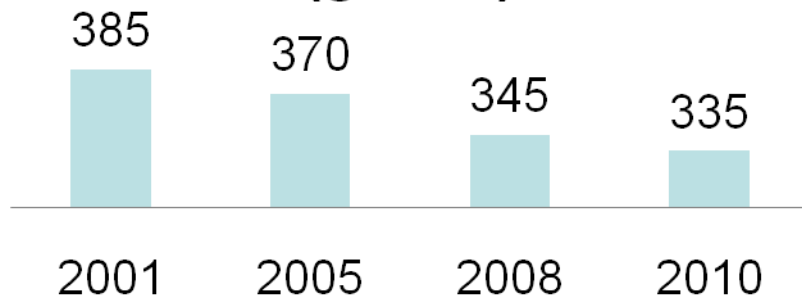
China Electric Power Market



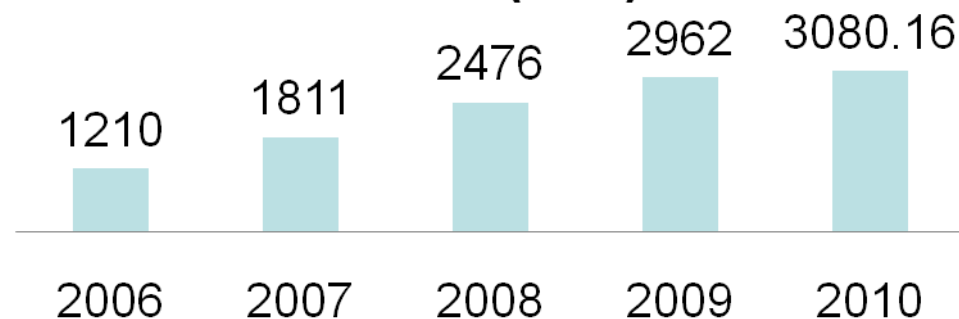
Long-term, stable, sustained and high-speed economic growth drives the fast development of the electricity market, from 338.49GW in 2001 to 962.19GW in 2010

China Electric Power Market

**Coal consumption
(g/kWh)**



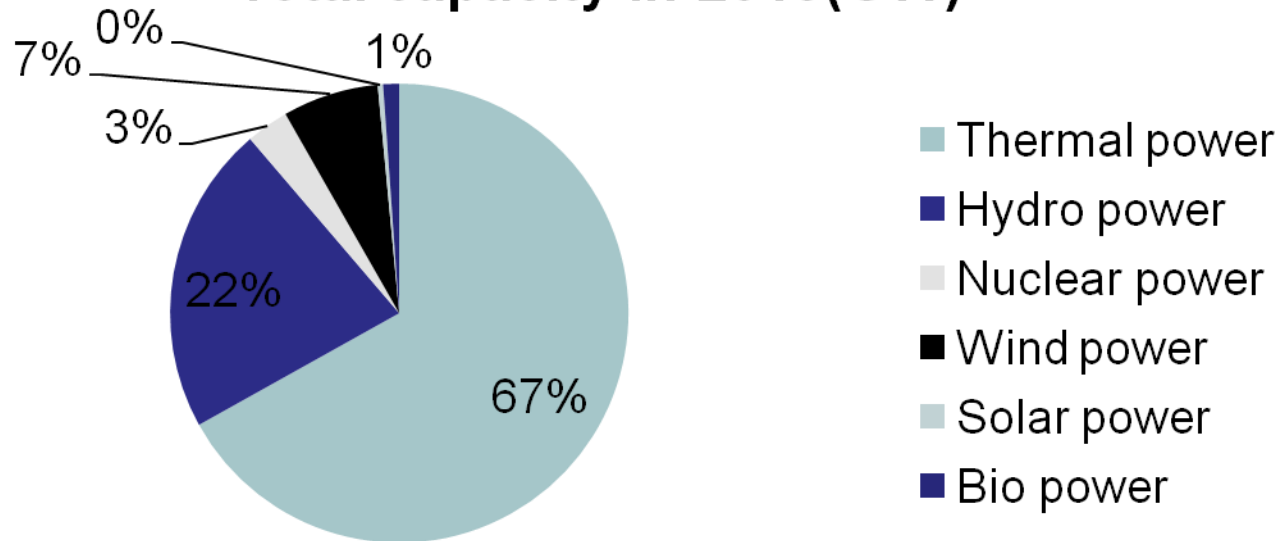
**Non-fossil fuel Electric
Power(GW)**



- China government is carrying out the promise of decreasing the CO₂ emission. The coal consumption is reduced constantly due to non-ending technique upgrade.
- China electric power industry is following more stringent environmental standards: SO₂ 400mg, NO_x 200mg, dust 50mg
- The non-fossil power is increased progressively which will occupy the total power capacity up to more than 15% in 2020.

Future development

Total capacity in 2015(GW)



	2015 (GW)
Total capacity	1360
Thermal power	890
Hydropower	290
Nuclear power	40
Wind Power	90
Solar Power	5
Bio power	15

- Cleaner and more reliable thermal electric power will be provided.
- Non-fossil fuel power will play a more important role in China power structure.

About AVIC INT'L Power

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Classification

According to primary energy, power plants can be divided into :

- Thermal power plant
- Hydraulic power plant
- New & renewable energy plants-Wind, Solar, Geothermal, Biomass, Waste

Thermal power plant:

➤ Power generator unit

- Power up to 1000Mkw
- Technology: medium pressure, high pressure, subcritical, supercritical, ultra-supercritical

➤ Gas turbine

- No need of water for cooling
- Be able to startup in very short time (several minutes)
- Operation cost is low in the area where the gas and oil resource is rich
- Investment cost is lower
- Structure is simple and flexible

Typical projects



600MW units—Pingwei Project



300MW units—Guixi Project



1000MW units—Shanghai Waigaoqiao Project

Power Plant – low emission with urban integration



China is indulging in significant R & D in the development of power generation schemes that can be safely integrated with urban communities – eg: here in Beijing



Power Plant - HYDRO



Hydro-electric power in China has given the double benefit of clean energy plus the better control of water flows – avoiding urban flooding & helping agriculture





By 2015, China intends to have approximately 1/3 of its power generation from renewable sources



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Our Business scope

- Investment
- Financing
- International EPC contract
- Engineering consultation and supervision
- Equipment and material procurement



Our Advantages

- Customer-oriented Solutions
- Fully supported by Chinese government
- Sufficient financial and financing capability
- Rich EPC project experience
- Close partnership with design institutes , equipment suppliers and construction team



Our Business Mode: Partnership



AVIC INT'L

**Design
Institute**

**Project
supervision**

**Construction
Team**

**Power Unit
Manufactory**



China Power Investment Group (CPI)

- Core business: thermal power generation, nuclear power generation and power transportation
- Registered capital: 12 billion RMB and over 80,000 staff
- 169 member companies and institutions, 15 participating companies
- Total controllable capacity reached 43,000 MW (as of the end of 2007)



Construction Partner Zhejiang Thermal Power Construction Company (ZTPC)

- Focused on the development of energy and related business
- Total capacity up to 37,000MW and more than 160 units until 2009
- 2006, the 1st million kilowatts of ultra-supercritical thermal power units in China
- 2009, the 1st AP1000 nuclear unit in the world



Hunan Electric Power Design Institute (HEPDI)

Business areas:

- Electric power system planning
- Dispatching and Communication Engineering
- Ultra high voltage power grid projects,
- Large-scale thermal power plant design
- Certificated by State Development and Reform Commission



Three main domestic generator unit providers

- Dong fang Electric Corp
- Shanghai Electric Corp
- Harbin Electric Corp



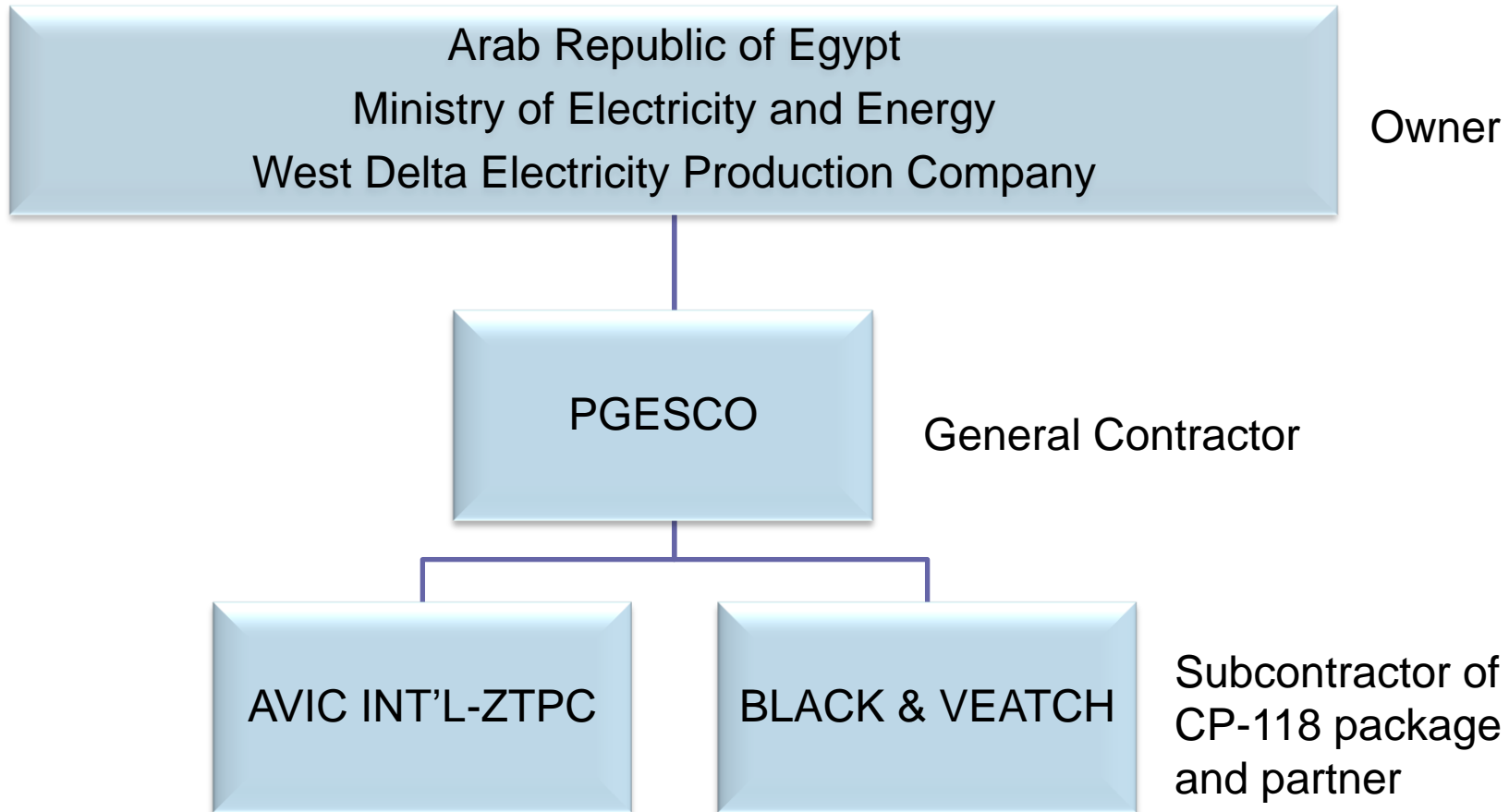
- **Egypt**

Abu Qir Power Plant CP-118
(MECHANICAL EQUIPMENT/PIPE INSTALLATION)

- **Turkey**

(1+1)x600 MW Atlas Thermal Power Plant

Business mode



AVIC INT'L-ZTPC

- The consortium was awarded with ABU QIR CP-118 contract on Jan 18, 2010
- The local registered company in Egypt for the contract implementation

Working Scope of AVIC INT'L

- Project Overall Management including coordination with the Owner
- All aspects of project management for Engineering, Procurement and Construction
- Exclusively Management of the financial issues.
- Procurement & Engineering Management

Egypt Abu Qir Power Plant



Onsite Office



Field construction

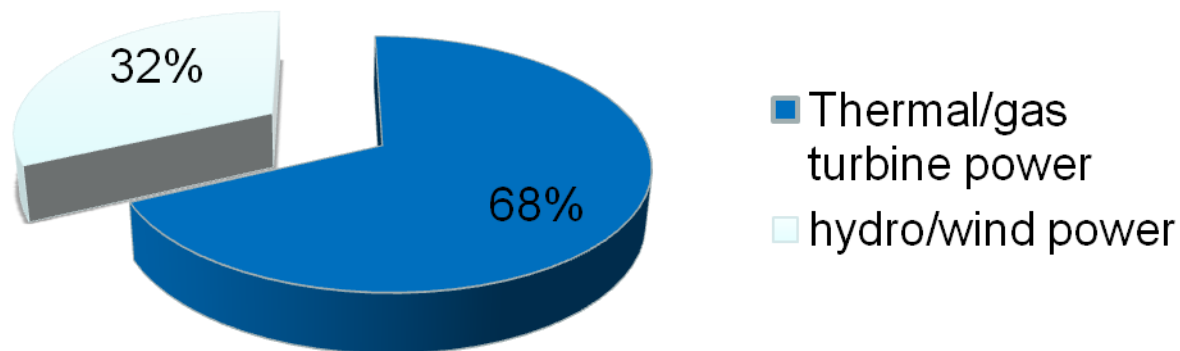


Field construction

Turkey power market

- GDP average annual growth rate--6%
- Power average annual growth rate--8%
- The shortage of power will last until 2015

Total Capacity

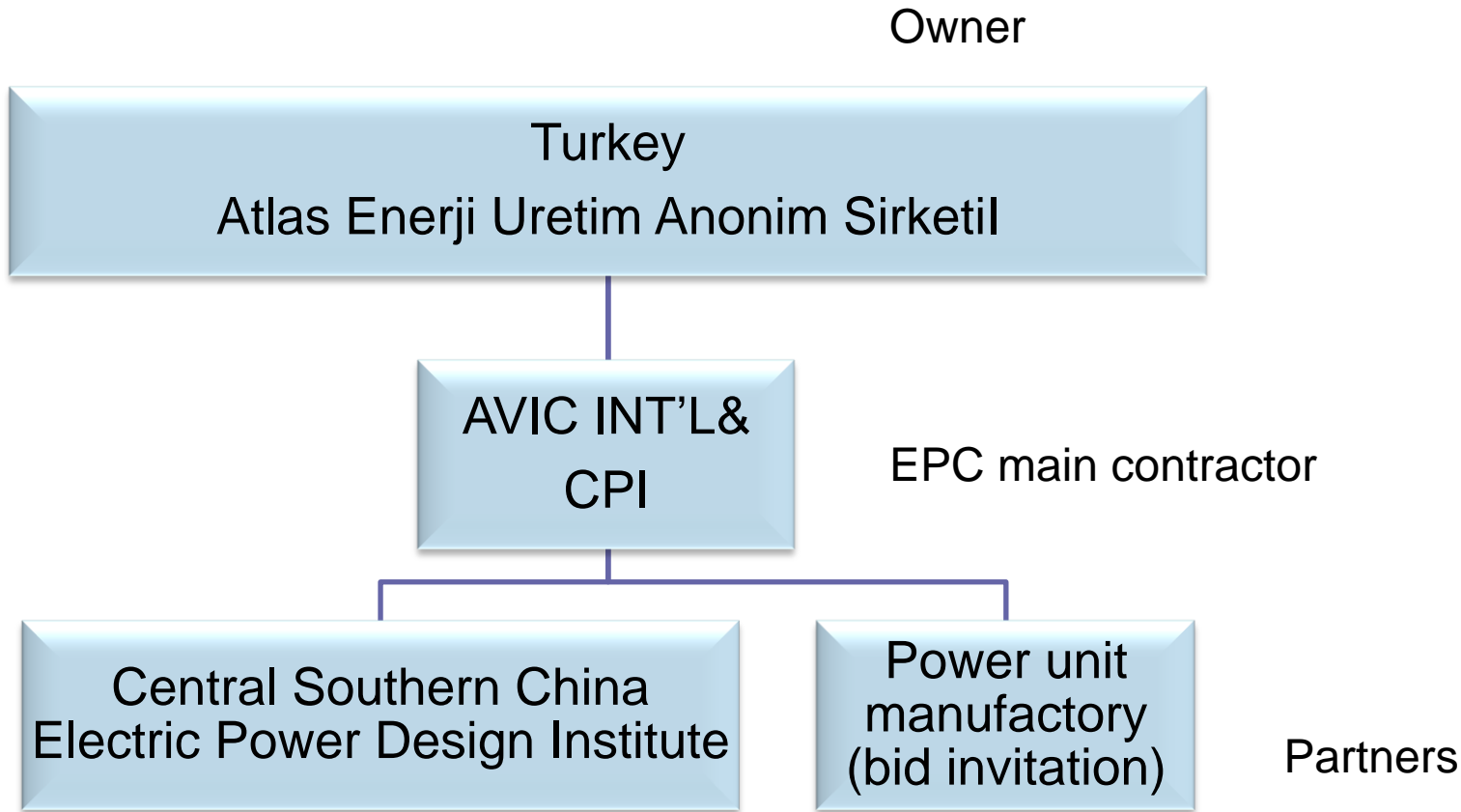


Turkey (1+1)x600 MW Atlas Thermal Power Plant

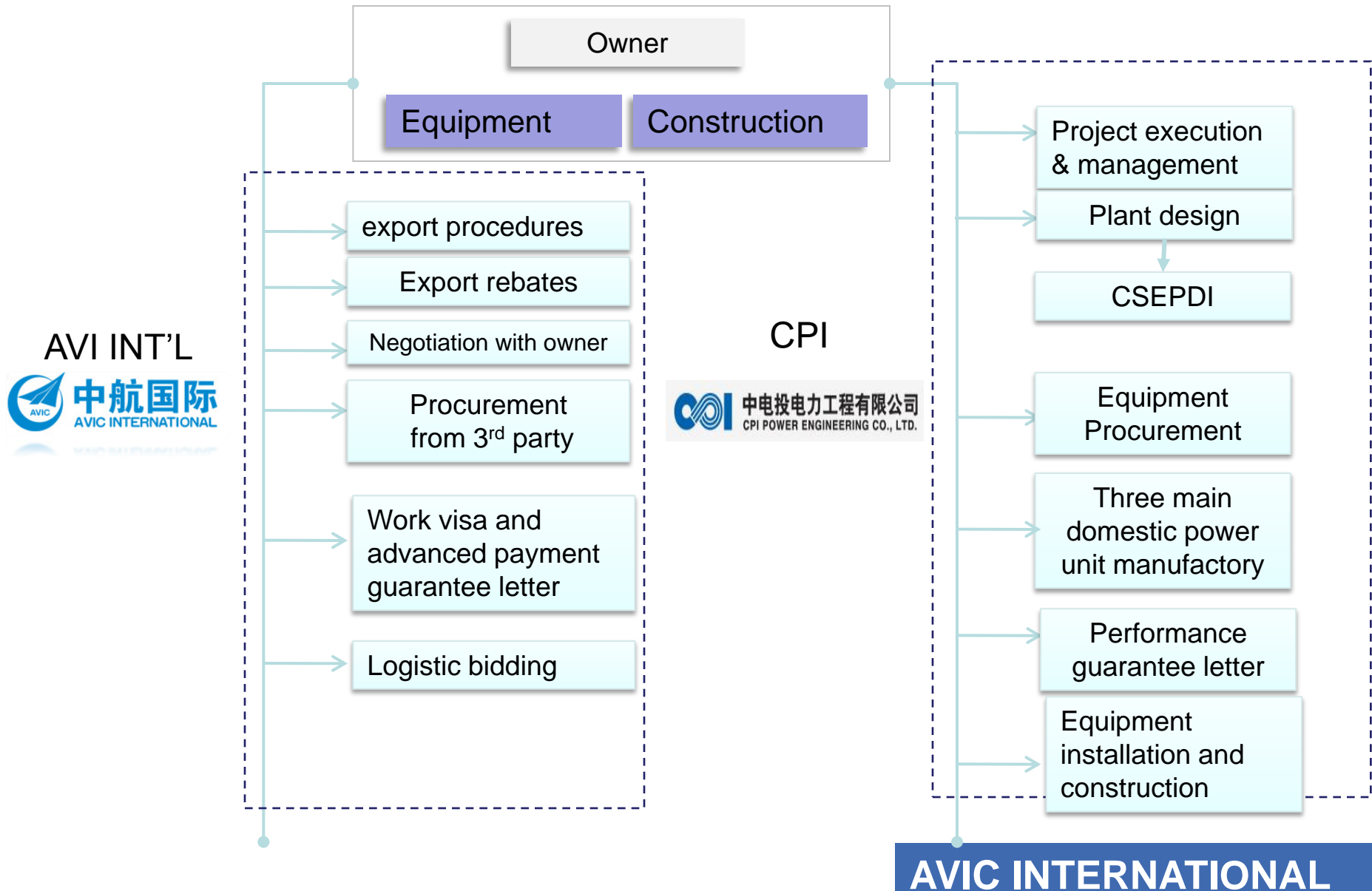


➤ **Total Contract Value : 700 million USD**

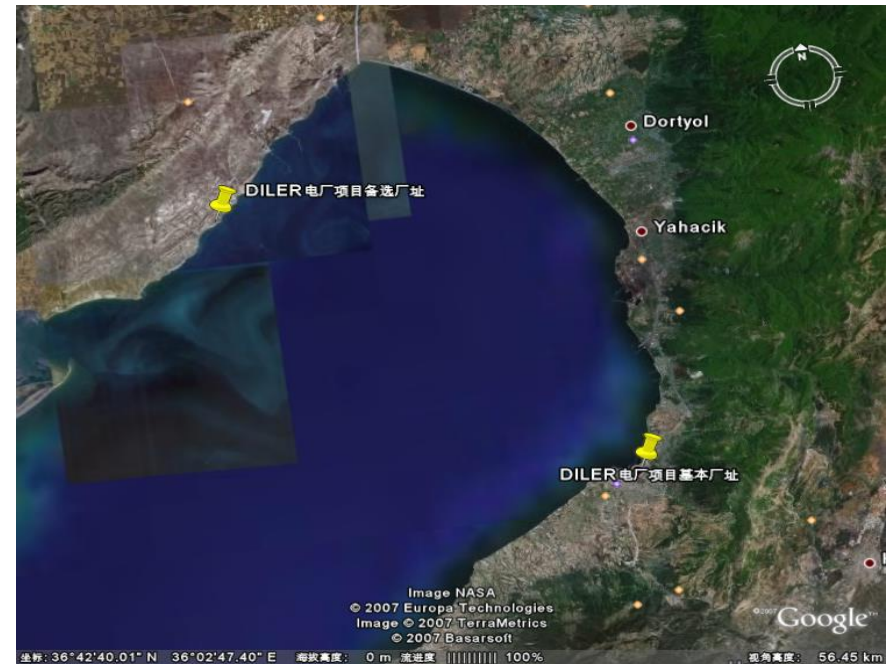
➤ **Business Scope**



Responsibility of consortium



Turkey (1+1)x600 MW Atlas Thermal Power Plant



**(1+1)x600 MW Atlas Thermal Power Plant in Turkey
EPC Contract by AVIC-Intl/CPIPEC with the Chinese finance**

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Financing Solution

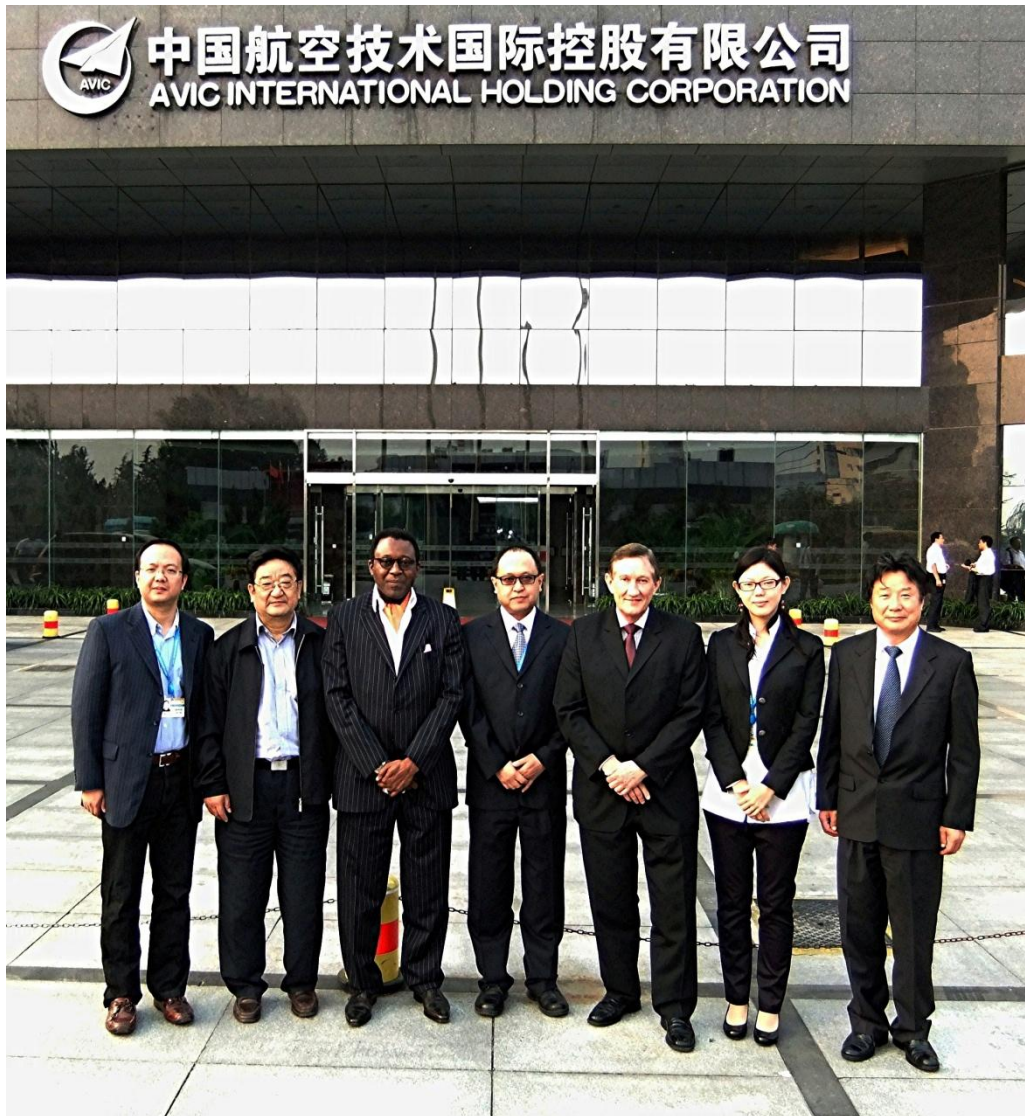


- Chinese Concessional Loan
- Preferential Export Buyer's Credit
- Export Buyer's Credit
- Export Seller's Credit

AVIC's Main Partners for Financing Solutions

- The Export-Import Bank of China (China Eximbank)
It was established in 1994. Fully owned by the Chinese government and under the direct leadership of the State Council. It's main business scope is to extend Chinese Government Concessional Loan & Preferential Export Buyer's Credit
- China Export & Credit Insurance Corporation (SINOSURE)
It's China's only policy-oriented insurance company specializing in export credit insurance. It began operations on December 18, 2001. SINOSURE's main products include short-term export credit insurance, medium- and long-term export credit insurance, investment insurance and bonds & guarantees. It's also a crucial agency for applying the Export Buyer's Credit & Export Seller's Credit.

AVIC – INTERPHARM TECHNOLOGIES PARTNERSHIP



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AVIC thank you