經濟部能源局
BUREAU OF ENERGY, MINISTRY OF ECONOMIC AFFAIRS






Energy Situation and Power Infrastructure in Chinese Taipei

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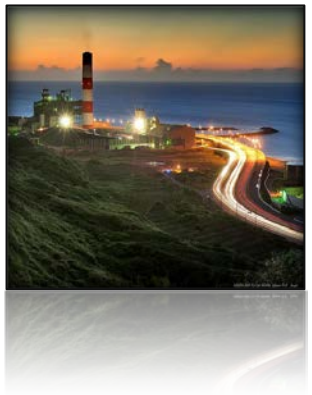
Outline

I. Energy Situation

II. Power Infrastructure Issues & Solutions

III. The Quality of Power Infrastructure

IV. Concluding Remarks



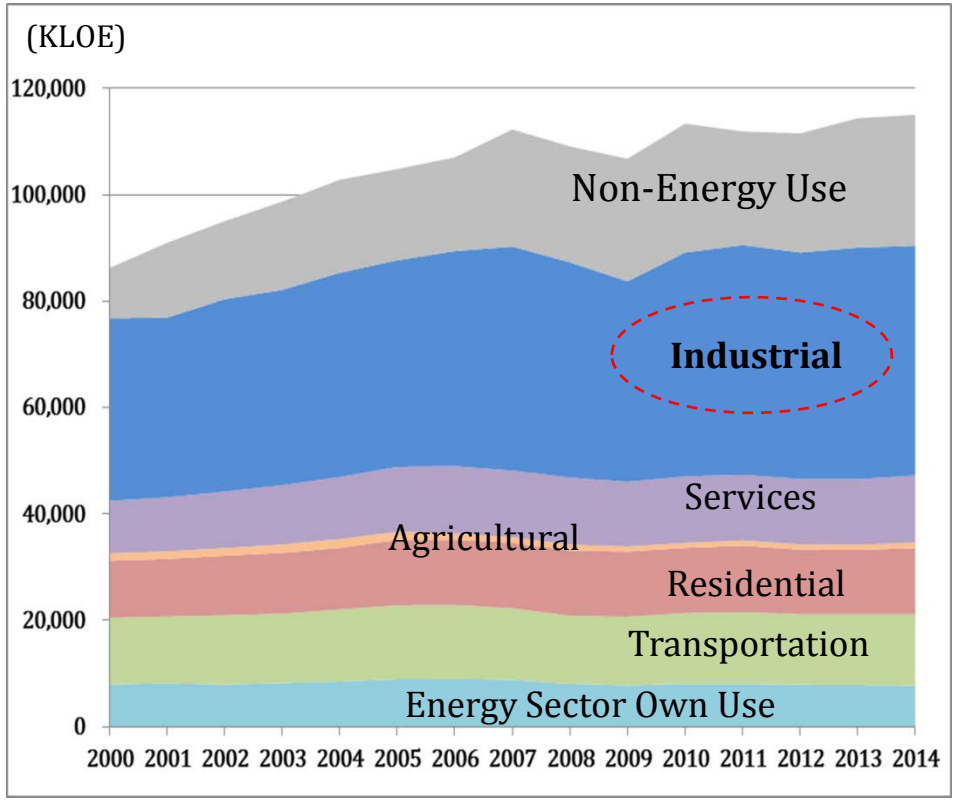
Part I

Energy Situation

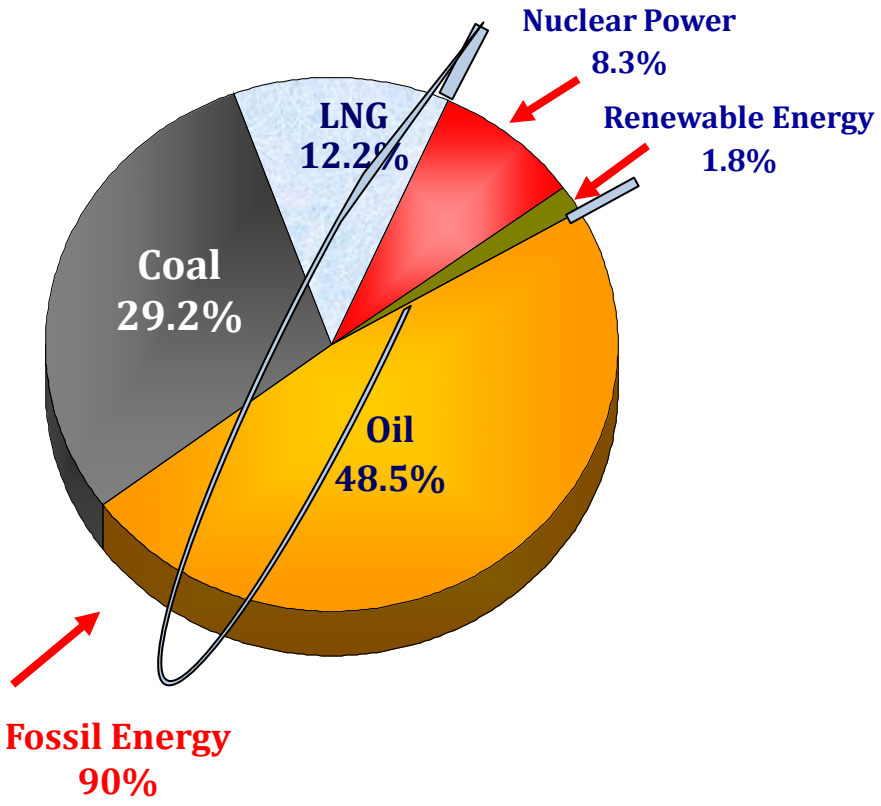
Energy Situation

- Industry sector has been the primary consumer of energy and electricity.
- Fossil energy accounts for nearly 90% of energy supply.

Domestic Energy Consumption (by Sector) from 2000-2014



Energy Supply Structure in 2014 (147.45 MKLOE)

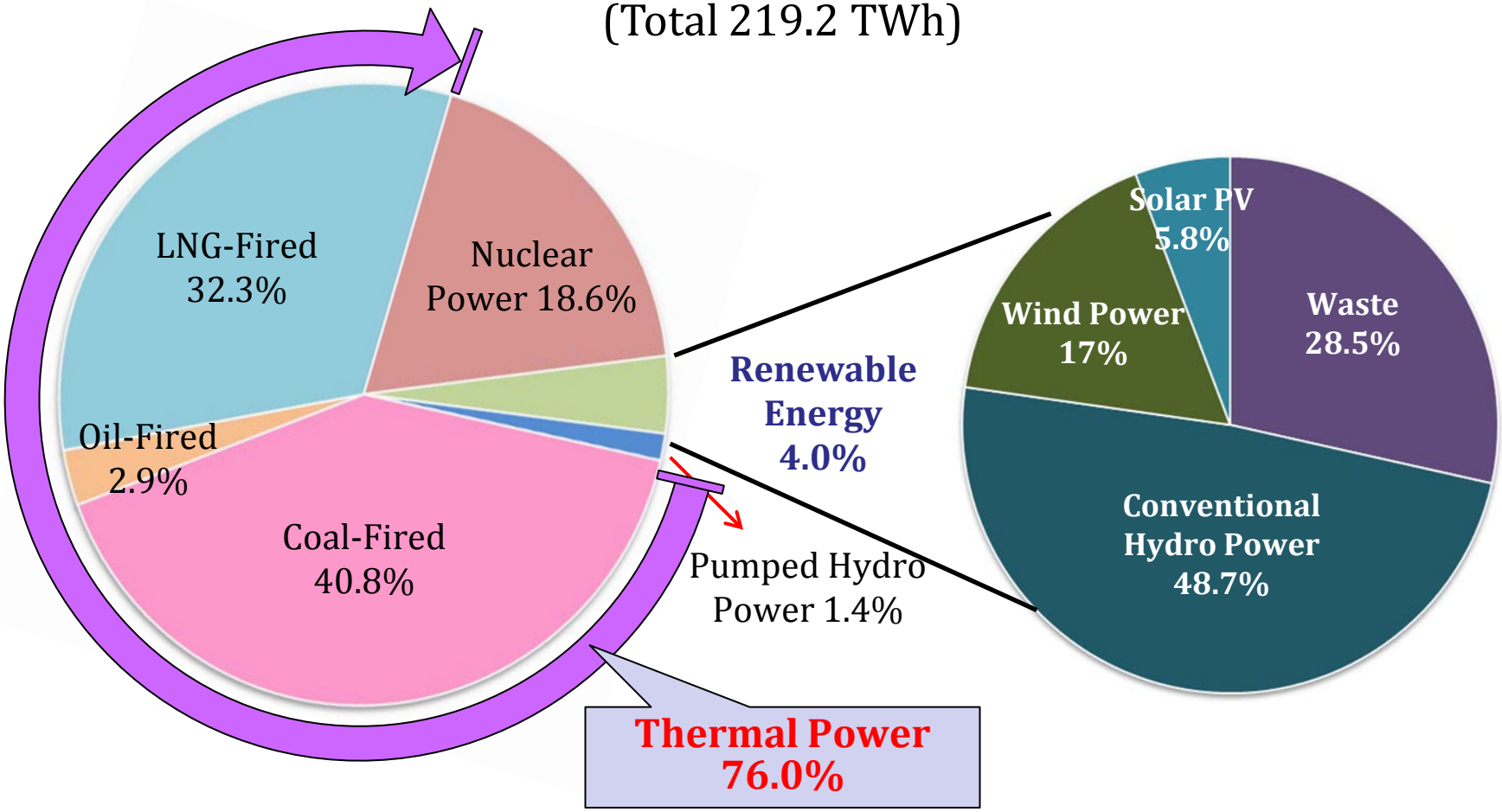


Source：Chinese Taipei Energy Monthly Statistics, 2015.

Energy Situation

- The thermal power accounts for 76.0% and nuclear power accounts for 18.6 of electricity supply.

Structure of Electricity Generation in 2014
(Total 219.2 TWh)



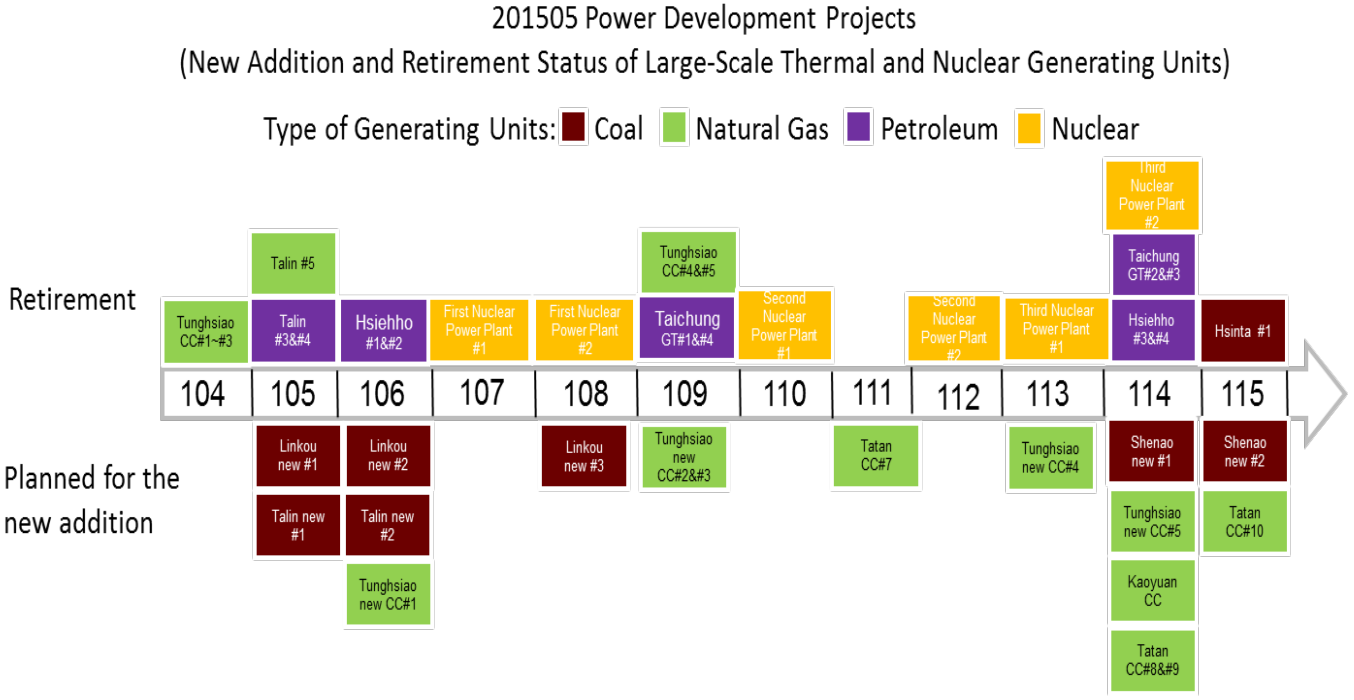
Source：Chinese Taipei Power Company, 2015

Part II Power Infrastructure Issues & Solutions

Power Infrastructure Issues & Solutions

Background

- Through continuous economic development and the increase in the ratio of household electricity usage, the overall electricity consumption in Chinese Taipei has been hitting its record high.
- Power development is becoming more difficult.
  - ✓ The new addition of 17 generating units.
  - ✓ The existing 17 units will gradually be retired.



Power Infrastructure Issues & Solutions

Issues

Due to environmental issues and the nature of politics, power development faces many challenges that have never been experienced before

- Inability to operate finished power facilities (such as the Fourth Nuclear Power Plant).
- Delay in the ongoing power construction schedule.
- Increase in the cost of operation and maintenance of generation (facility).

Solution

- Taipower's Department of Power Development aim to minimize pollution and increase the efficiency of power generation from fossil fuel, which is regarded to cause high levels of pollution.

- In the procurement aspect, while demanding most advanced generation technology and equipment, and increasing the penalty in the case of violating regulation, the companies of the power industry are driven to provide highly efficient generation equipment to reduce pollution emissions.

Part III

The Quality of Electric Power Infrastructure

The Quality of Electric Power Infrastructure

Background

- All of Chinese Taipei's existing coal-fired generating units in commercial operation are subcritical types.
- Currently 5 ultra-supercritical generating units are being installed, and the highest generating efficiency will be up to 45.59% (LHV, Gross).

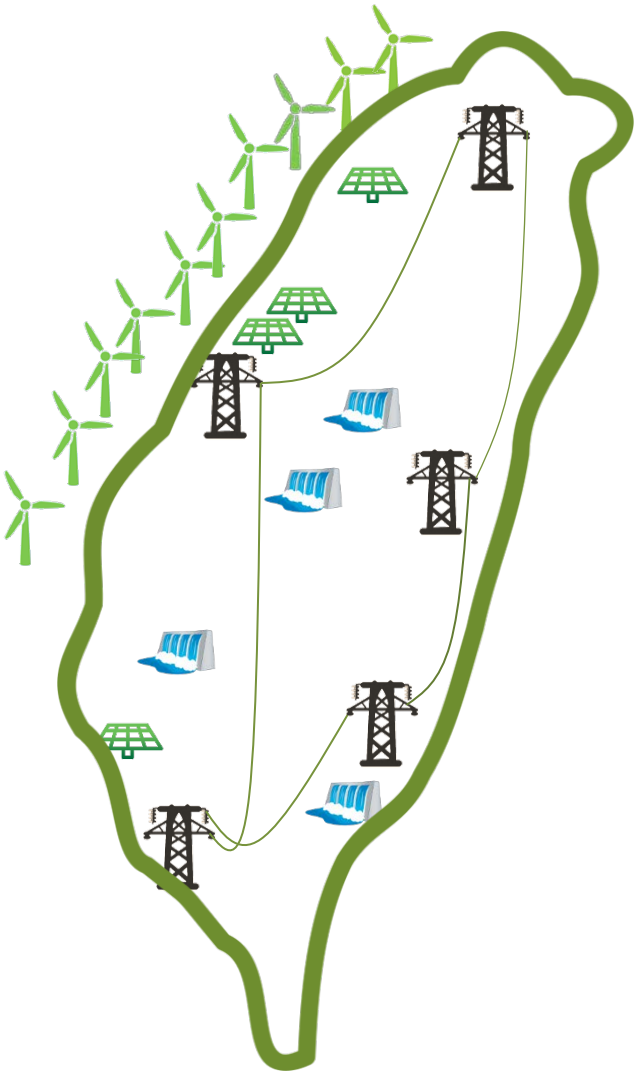
Elements

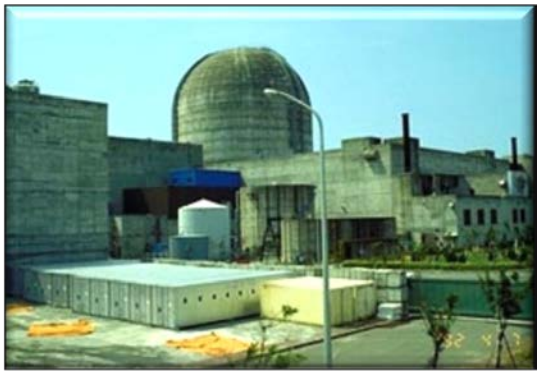
- To raise the standards on increasing generation efficiency and decreasing pollution emissions, it is necessary to continue advancing and improving the techniques involved in power generation and pollution control equipment. This would mainly rely on the people to accomplish.
- After all, the quality of the power facility is, determined by the knowledge and operations capability of the professionals, involved in design, manufacturing and installation of the equipment.

The Quality of Electric Power Infrastructure

Implementation

- Quality of personnel : The educational training of the personnel at Taipower is an important topic.
- SOPs : To establish Standard Operating Procedures (SOPs) under ISO Quality Management System
- To establish core techniques for the personnel to follow.
- It is the responsibility of Taipower to ensure that the power plant can be operated independently and that all techniques and experiences have been passed to the personnel.





Part IV

Concluding Remark

Concluding Remarks

- Chinese Taipei is highly dependent on imported energy and fossil fuels, and therefore, the future of Chinese Taipei will have many challenges in the face of global warming and mothballing of the Nuclear Power Plant 4.
- Under the atmosphere of increased environmental awareness, we are looking forward to cleaner ways of generating power that would allow for commercial application and of significant scale. For example, that would be Integrated Gasification Combined Cycle(IGCC).
- Today's meeting is a good opportunity to exchange views with all members, let us work together to reduce the conflict between economic development and power development efforts.

Thanks for your attention