



Nuclear Power in Taiwan

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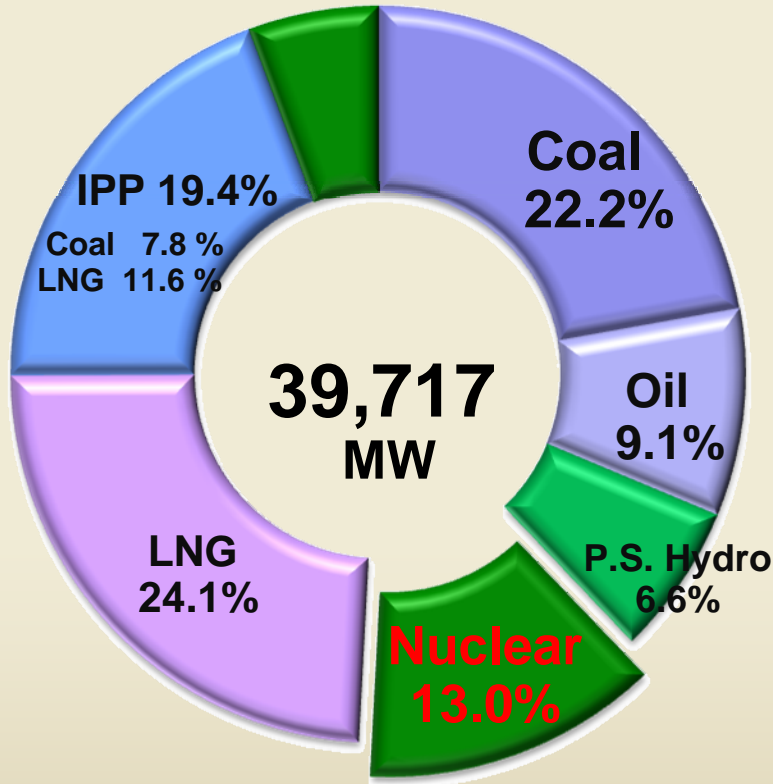
Corporate Highlights

- **State-owned Electric Power Company**
- **16th Largest Utility in Installed Capacity in the World**
- **The Only Utility Which Distributes Electric Power to Customers in Taiwan**
- **Total Assets : US \$ 50 Billion**
- **Number of Employees : 26,921**
- **Customers : 12 Million**



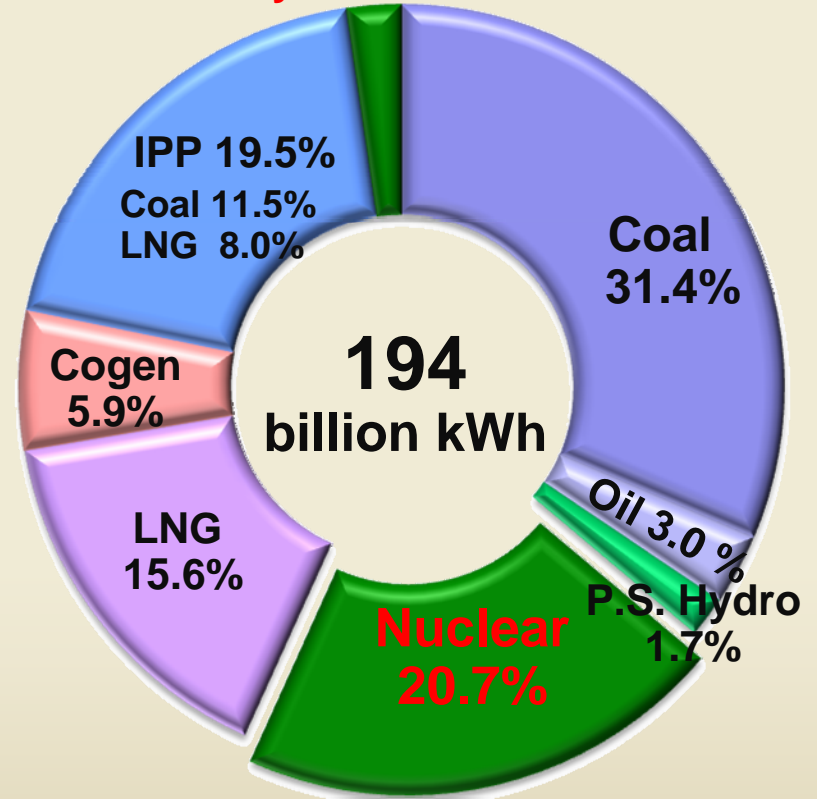
Taiwan Power System

Renewable 5.8%
Wind 0.9% Hydro 4.9%



Installed Capacity
In 2009

Renewable 2.3%
Wind 0.4 % Hydro 1.9 % Solar 0.0006%



Electricity Generation
In 2009

Nuclear Power Plants in Taiwan

GE BWR-4 636 MWe x 2
Commercial Operation Date :
1 Dec. 1978
2 July 1979



Chinshan

Kuosheng



GE BWR-6 985 MWe x 2
Commercial Operation Date :
1 Dec. 1981
#2 Mar. 1983

In 2009
Nuclear Installed Capacity
5,144 MW



Lungmen

GE ABWR 1350 MWe x2
(Under Construction)

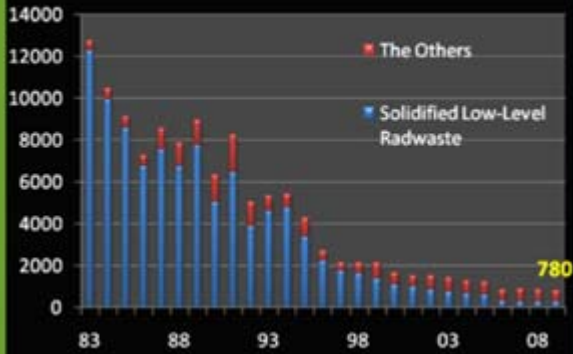
Westinghouse PWR 951 MWe x 2
Commercial Operation Date :
1 July 1984
#2 May 1985

Maanshan

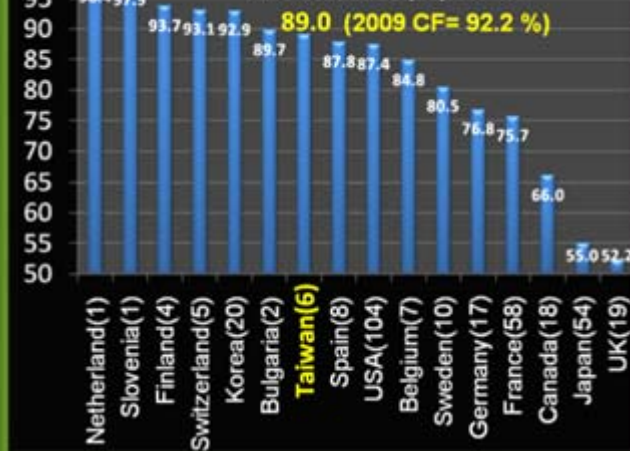


Nuclear Performance in 2009

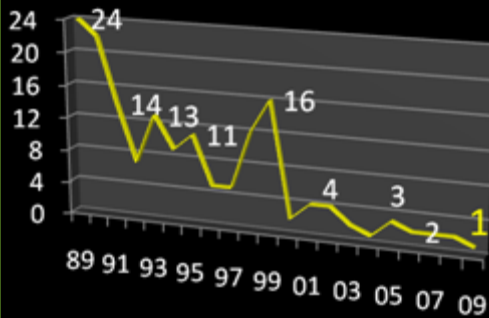
Low-Level Radwaste (Drum)



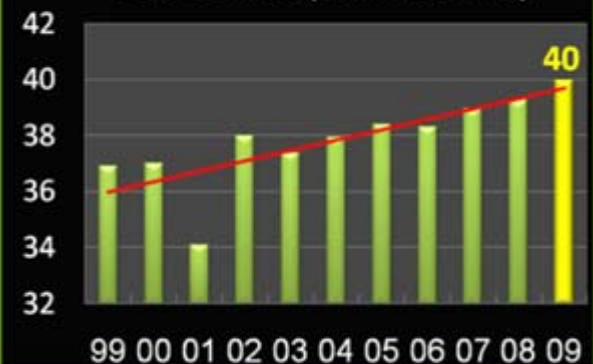
NEI 2008 CF(%) Rank



Scram (#)



Generation (Billion KWh)

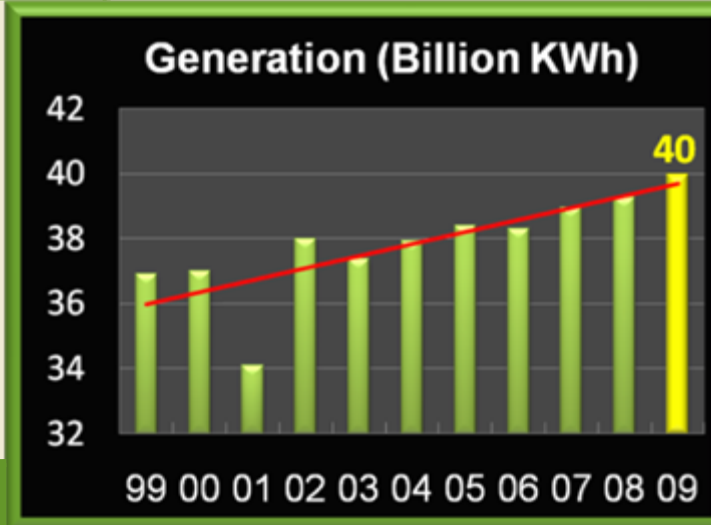


Nuclear Performance in 2009

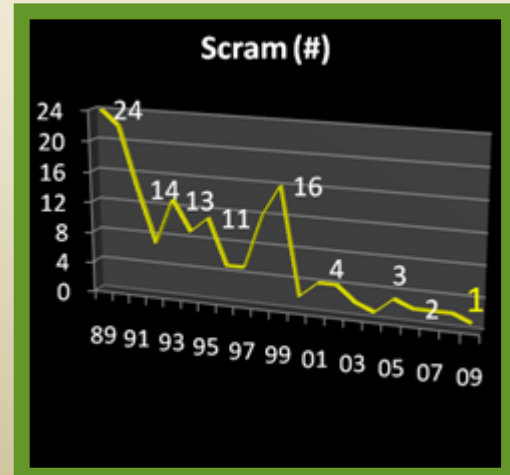
**Longest Continuous
Operation : 542 days**

MUR : Measurement Uncertainty Recapture

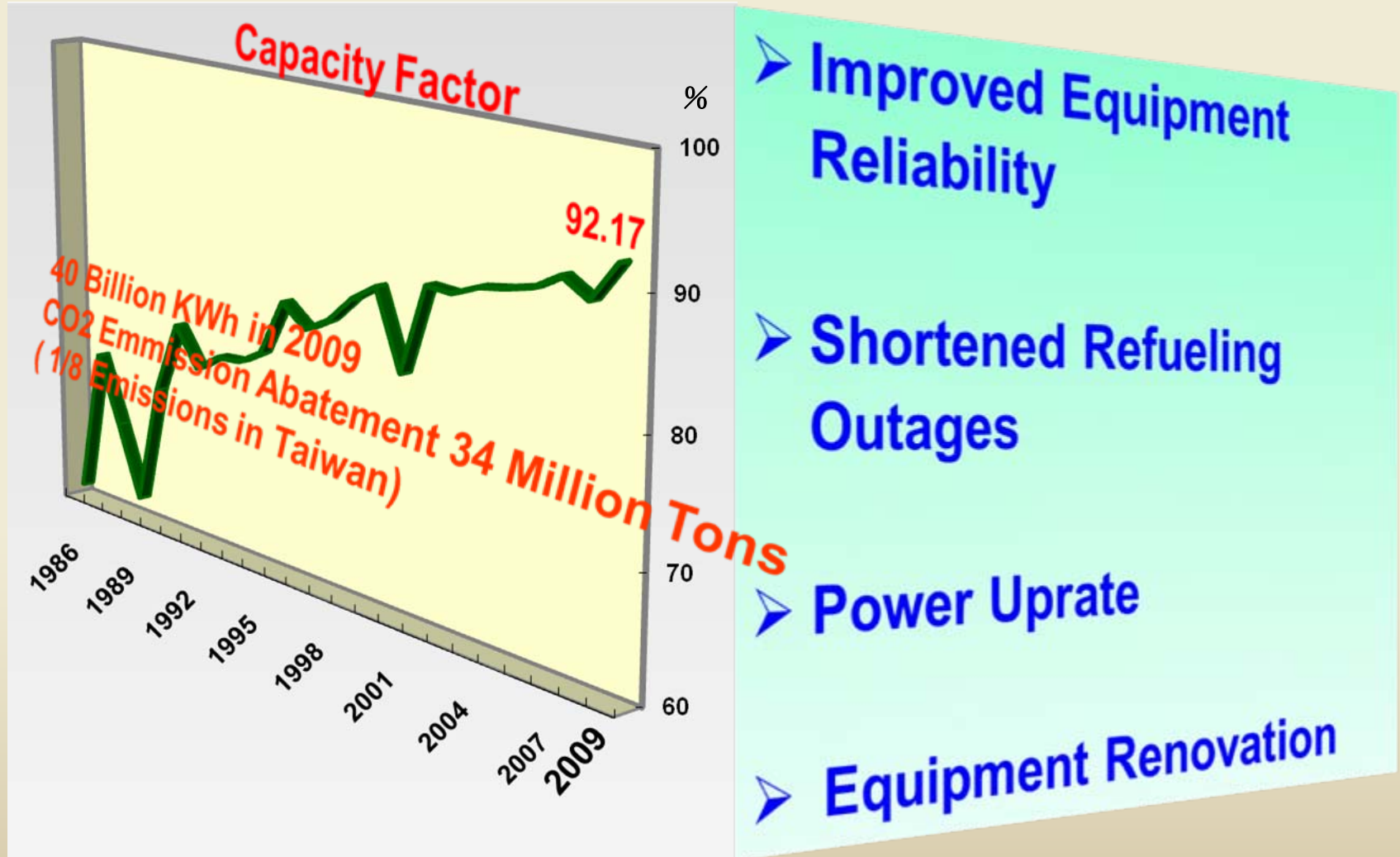
**MUR Power
Uprate
2007~2009
55.64 MWe
400 Million KWh**



**Shortest outage duration
: 28.48 days**



Key Contributors to Capacity Factor Improvement



Challenges and Prospects

Challenges

- ▶ Diverse Digital Control Issue
- ▶ Vendors Support Issue
- ▶ Systems Interface Coordination

Lungmen Project

Prospects

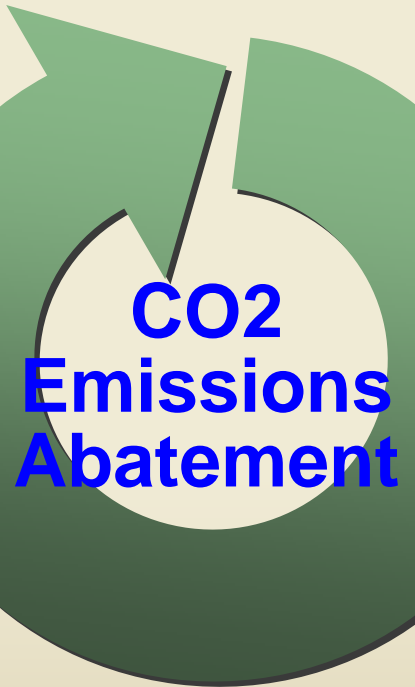
- ▶ Contractors' Assistance
- ▶ Technology and Manpower Support



Challenges and Prospects

Challenges

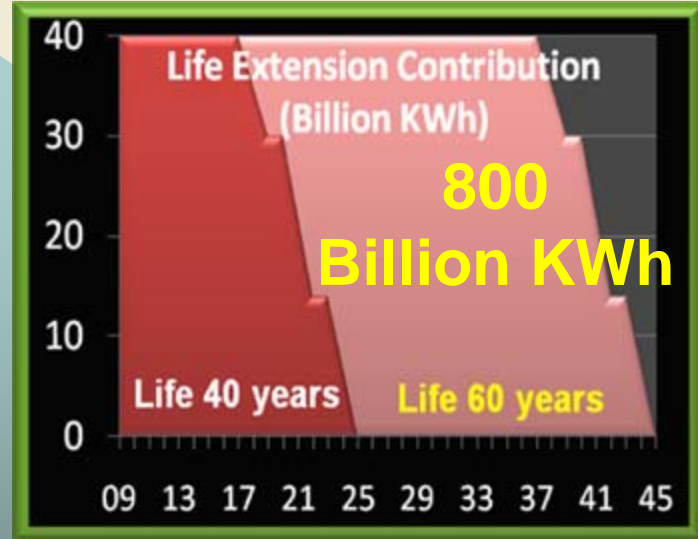
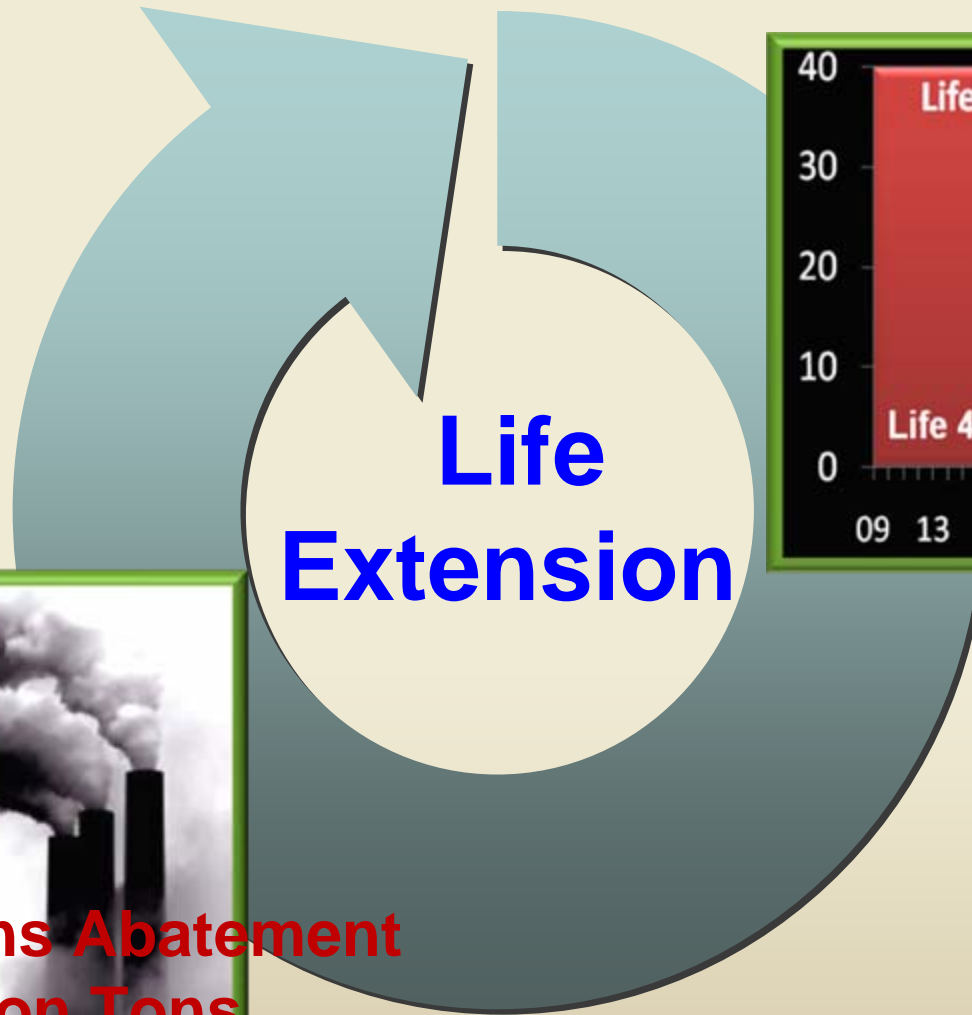
- ▶ Fossil Fuel Generates about 76 % of electricity
- ▶ Mitigation Action
- ▶ Carbon Cost
- ▶ Nuclear Phase Out



Prospects

- ▶ SPU(Stretch power up-rates) 3%
- ▶ Life Extension from 40 years to 60 years
- ▶ New Builds
- ▶ Efficiency Improvement

Prospects



Prospects

New Builds

Geographical Limit

- ▶ Even With Robust Growth for Renewables, Nuclear is Still Vital

Taiwan is an Isolated Island

- ▶ Few Natural Resources
- ▶ No way to Import Electricity





Conclusion

- It is clear that the safe operation of nuclear power plants is of utmost importance to the continued success and growth of the nuclear electric industry.
- The global clean-energy revolution can only avert catastrophic climate change by making an enormous investment in nuclear power, including contributions from India and Taiwan.



A panoramic night view of Taipei City, Taiwan. The Taipei 101 skyscraper is the central focus, illuminated with blue and white lights. The city below is a dense grid of lights from buildings and streets, with mountains visible in the background under a dark blue sky.

Thanks for Your Attention

A radiant night view of Taipei City