

The Economic Performance of Fusion Power Plant on Future Deregulated Electricity Market by S. Takeda et al.

- ✓ This study pioneered a vital new area for the economic assessment of fusion power plants: the economic performance of the plants **on deregulated electricity markets**.
- Conventional metrics such as **Levelised Cost of Electricity (LCOE)** may not represent **the market value of power plants** on future deregulated electricity markets.
- The operation of future fusion power plants has to be discussed in terms of how to maximize the monetary value of the plant through the deregulated market mechanisms.
- ✓ A simplified deregulated electricity market model, the **Simplified PJM Model**, was constructed.

✓ The results show that:

1. **The economic performance of fusion power plant has higher sensitivity to the unplanned outage frequency (including plasma disruption) on deregulated electricity market;**
2. **The unplanned outage frequency target should be lowered to 0.3 times/year on deregulated market to achieve economic rationality of future fusion power plants.**

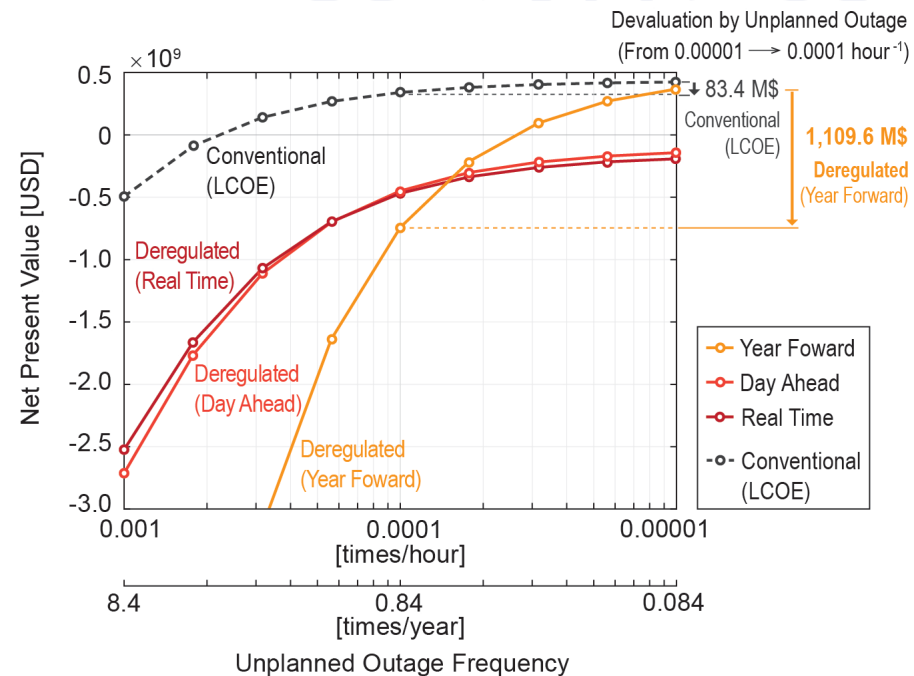


Fig. 2 Net Present Value of Fusion Power Plant on Deregulated Electricity Market vs. Conventional Market.