Forging a Climate-Resilient Future:

PLN's Bold Transition In Energy Sector

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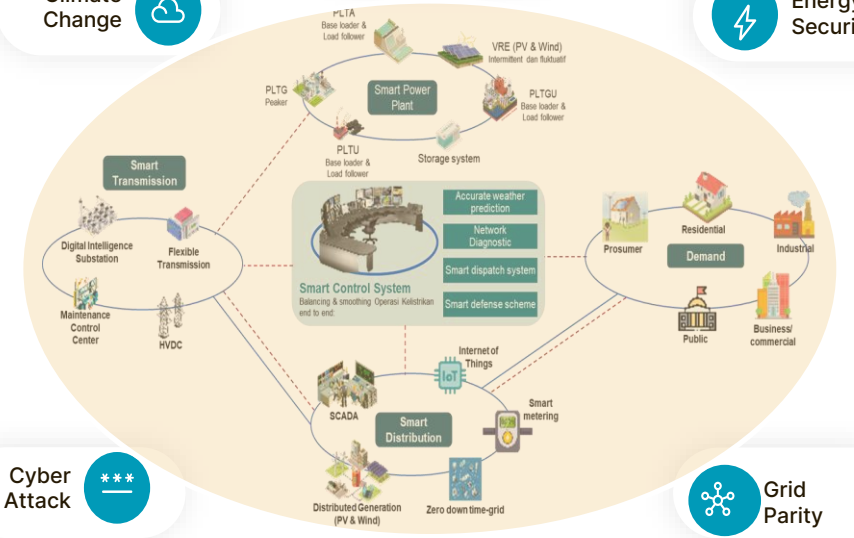
Why Should Power Utilities Move Towards Resilience?

Accelerated Aging

Climate Change

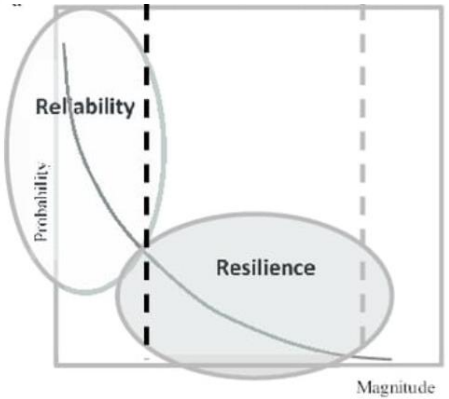
Energy Security



Cyber Attack

Grid Parity

Emerging Risks Affecting Future Grid

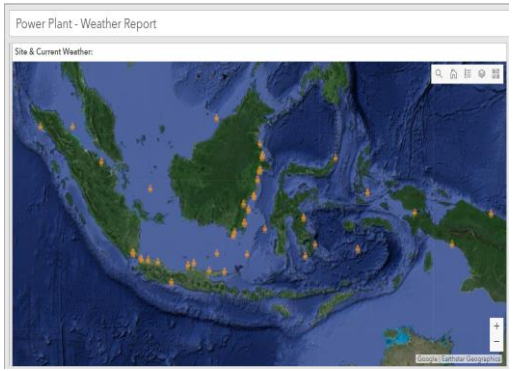


Key Resilience Inisiatives

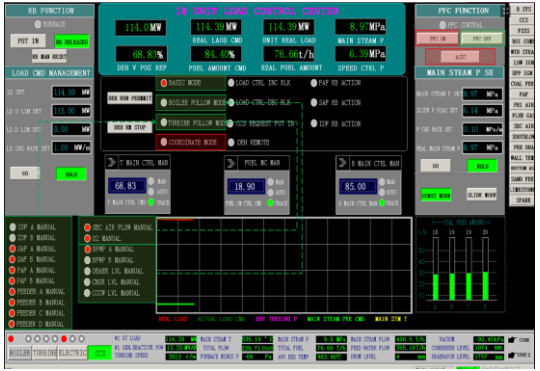
- Climate-resilient design
- Flexible Generation
- Predictive Maintenance
- Resources Sharing
- Zero Downtime
- Customer Excellent
- Robust Cybersecurity

PLN has established a sound weather forecasting system and Automatic Generation Control (AGC), to improve its resilience in primary energy supply chain and flexible generation ready to embrace energy transition

PES Monitoring & Control



Weather Forecast for Coal Supply Chain Management

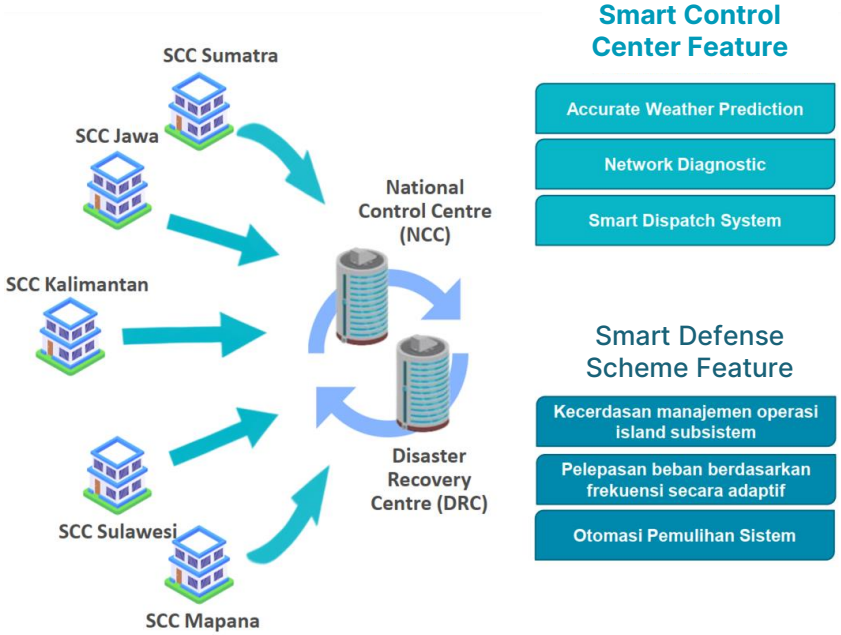


AGC Mode Available

The implementation of weather forecast system to manage PLN's coal fleet scheduling to **maintain Primary Energy Stock (PES) in all power plant** to ensure the sustainable electricity provision to PLN customers in 17 thousands island.

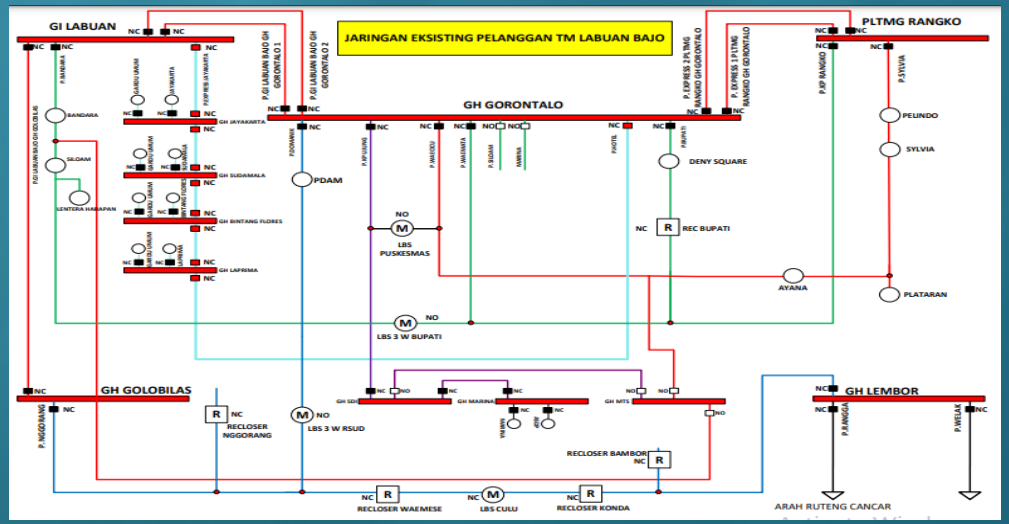
As more clean generators enter the grid, there is a need for a flexible generation with reliable ramping up and down capabilities, supported by AGC systems especially when there is supply from renewable energy sources

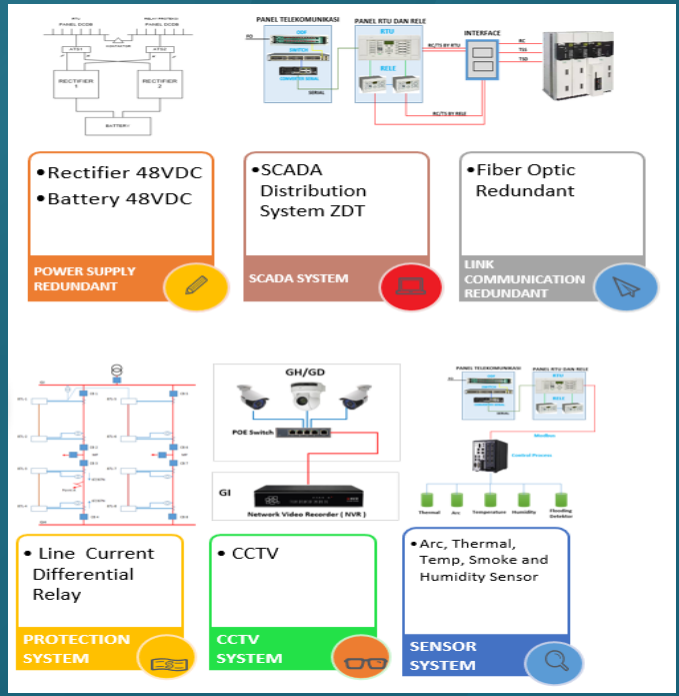
In its efforts to enhance resilience in PLN's system operation, PLN would establish redundancy among System Control Centre (SCC), National Control Centre (NCC) and Disaster Recovery Centre (DRC)



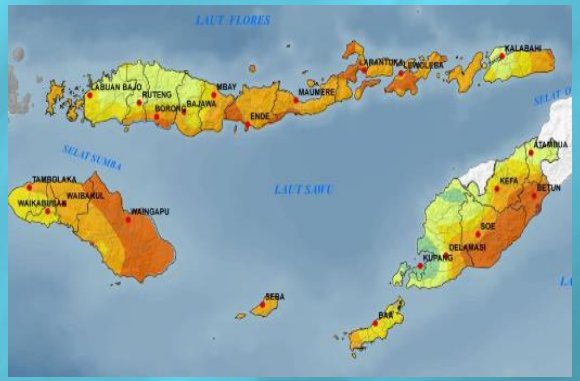
"While SCC becomes the aggregate control center in each big island, NCC would become a centralized control center for the whole nation which is fully backed-up by DRC located in different geographical location"

PLN demonstrates its resilience in distribution network by establishing Zero Down Time (ZDT) system, by undergrounding the MV lines, looping topology, advanced automation and protection supported by Fiber Optic communication media





USE CASE : CYCLONE “SEROJA” IN EASTERN NUSA TENGGARA - APRIL 2021



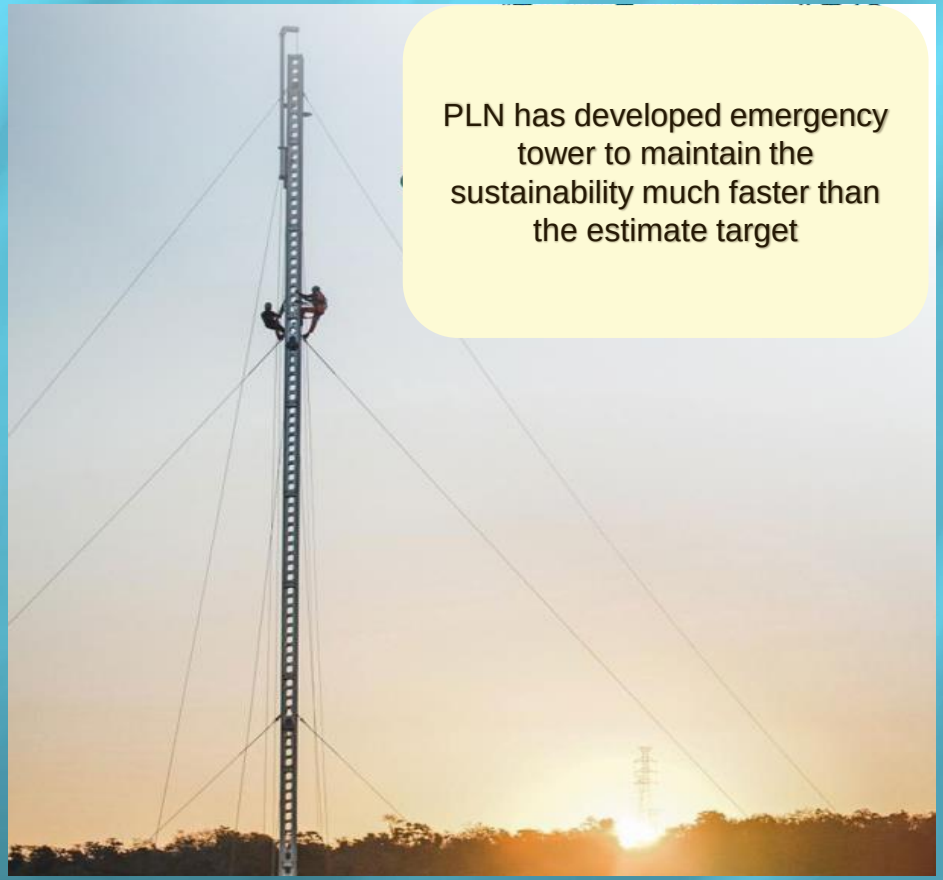
The cyclone had a great impact to the shortages of electricity which had completely shut down 2887 distribution transformer which led to total blackout experienced by 467.897 consumers.

PLN carried out strategic recovery steps to gradually restore power 100% to consumers within 5 days (4 – 9 April 2021).

USE CASE : CYCLONE “SEROJA” IN EASTERN NUSA TENGGARA - APRIL 2021

PLN has deployed manpower to restore the electric infrastructures which consist of 723 manpower from; 26 Distribution Units across the nation, and its subsidiary as well (Icon Plus, PLN Tarakan, and PLN Haleyora)

USE CASE : EMERGENCY TOWER DEVELOPMENT



PLN has developed emergency tower to maintain the sustainability much faster than the estimate target

Foto : Kegiatan Pendirian Kolom Tower *Emergency*

Foto : Kegiatan Pendirian Kolom Tower *Emergency*

Emergency tower of 70 kV transmission lines established was the highest tower even been set up with the height 61 meter.

Thank You

Digital Management Division