

Grid Modernization





Agreement : Relieve Constraint

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Thailand Power System Flexibility Study

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-- Contractual Flexibility --

- Reduce the **minimum-take obligations** in **power and fuel purchase agreements** for new contracts.
- Adjust the **Power Purchased Agreement** from **Firm contracts to be more flexible.**
 - RE Forecast
 - RE Controllable
- Set **VRE Curtailment rules** in Policy, Regulatory, System Operator, and VRE producers.
- Manage fuel (Procurement Portfolio) both short-term and long-term and Consider the LNG contract as an alternative.

Technical

Commercial

Legal



Investment : Reduce The Impact

---- Cost Benefits Analysis ----

- Generation**
 - Fast Response / Flexible Power Plant
 - Hybrid Gen. (RE Controllable)
- Transmission**
 - FACTs Device
 - Static Synchronous Compensator
 - Synchronous Condenser
 - HVDC / HVAC
 - Digital Substation (IEC 61850)
- Energy Storage**
 - Battery Energy Storage System
 - Pumped Storage Hydro
 - Hydrogen Energy Storage System
 - Flywheel

Flexibility

Ancillary Service



Management : More Controllable

---- Virtual Power Plant Control Platform ----

**** **Aggregator Business Model** ****

- Demand**
 - Demand Response
- Electric Vehicle (EV)**
 - EV Smart Charging
- Virtual Power Plant**
 - Renewable Energy
 - Battery Energy Storage
 - Prosumer / IPS
 - V2G

Real-time Pricing

Incentive



Thank You