

# Paris Session 2022



## The Korea Power System operational monitoring Tools to prepare Extreme condition

C2 – System Operation and Control

PS2

(Q2.9) What new or additional tools will power system operators need in order to be able to foresee, prepare and react to extreme operating conditions?

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## Question 2.9: What new or additional tools will power system operators need in order to be able to foresee, prepare and react to extreme operating conditions?

### ◆ Resonance Monitoring System (SSR, SSTI, SSCI)

#### ■ East Coast Power System in Korea

- o N-6 sequential line trip occurred because of wildfires near the 5.9GW Nuclear site ('22.03.04)
- o TCSCs are installed in 2 routes: SSR relays pick up in Samcheok Generator(1.2s) during trips

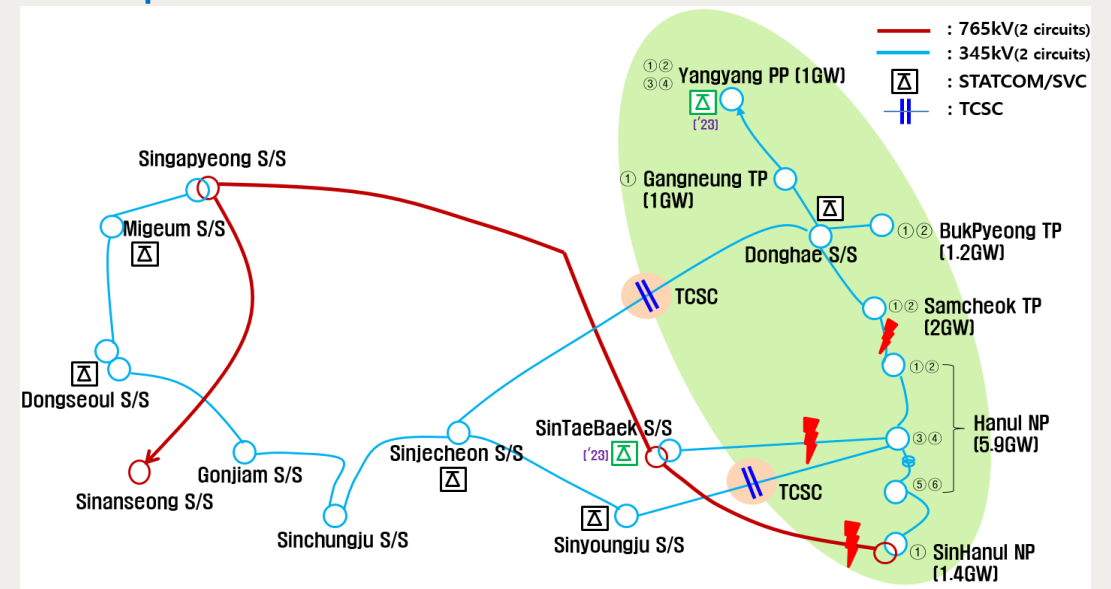
#### ■ 2 HVDC links which connect East coast sites to Metropolitan Area will be built in '2025~'26

→ **“Generator & HVDC & TCSC” interaction**  
will be expected in the near future

#### ■ To analyze the expected system effects, KPX will introduce

- 1) The on-line SSR analysis Tools  
(DSA SSAT – SSR module)
- 2) Oscillation monitoring system using PMU

Group Discussion Meeting



## Question 2.9: What new or additional tools will power system operators need in order to be able to foresee, prepare and react to extreme operating conditions?

### ◆ Acceptable PVs Trip Capacity Monitoring System

- Jeju Island Power System(renewable generation penetration is very High)
  - o Jeju Island Demand/Supply (Load 550~1,100 / Conventional Gen: 900, Wind: 300, PV : 619, 2HVDC : 150\*2, 200\*2, MW)
  - o 4~7 Must-run conventional Generators are needed to preserve Frequency against PVs Trip.
    - **350MW(w/o LVRT)** will be tripped in 619MW PV total - Set up Max. Acceptable PV Trip Cap.

#### ▪ What KPX will do

1) Monitoring Real time Acceptable PVs Trip Cap. → Inc./Dec. Must-run GENs.

2) Expansion to mainland → Apply Regional Acceptable PVs Trip Cap.(south-west are: 9GW, 43%)

