

# Grid Forming Solutions for Renewable Energy Dominated Electric Power System

The Key Technology to Enable Stable Grid for Future 100% Renewable Generations



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With more than 30 GFM reference projects and 800MW GFM PCS supply, NR Electric is leading this development towards renewable energy dominated electric power system with the advanced Grid Forming Solutions for energy storage plants.

### Grid Forming Energy Storage

NR Grid Forming Solution provides stability for power systems to ensure future energy supply from 100% renewable generations.

### Inertia Support

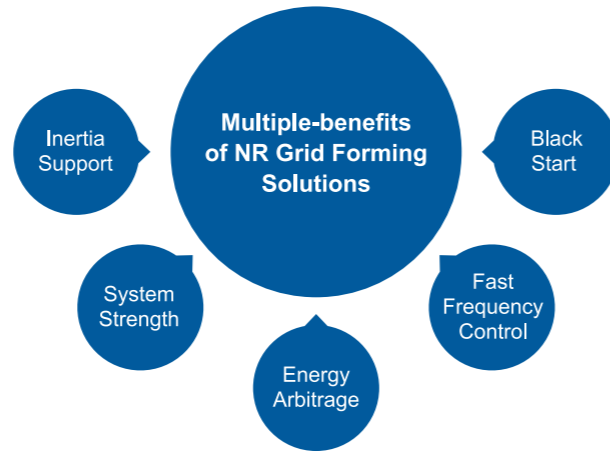
With less synchronous generators and more renewable generations, inertia has to be provided by inverter-based resources such as energy storage plants. NR Grid Forming Solutions provide the necessary inertia support to maintain frequency stability and thereby ensure that the power grid is robust and stable during network disturbances.

### System Strength

NR Grid Forming Solution increases short-circuit power level and system strength, thus enabling a stable and resilient power system. This will allow high penetration level of renewable generation, even 100% renewable generation integration to the power system.

### Energy Storage System Reference

Key to a 100% green, stable and resilient power supply



### Black Start

NR Grid Forming Solution is able to energize the local network rapidly and safely during the challenging conditions of a blackout, and to assist with the restoration process of the power grid. Island operation is also feasible with NR Grid Forming Solution.

- Total project reference (GFL and GFM): **500+**
- Total Capacity: **7GW+**
- Typical Project Reference:
  - UK BESS 100MW / 100MWh
  - South Africa BESS 283.5MW / 1140MWh
  - Saudi Arabia BESS 500MW/2000MWh

### Grid Forming Reference Projects for Integrated Source / Grid / Load / Storage Solution



Project	Ejina Integrated Source / Grid / Load / Storage Project
Application	On and Off-Grid Operation / Black Start / Frequency Regulation / Voltage Control
Size	GFM BESS Storage ( 25MW / 25MWh )
In service Date	2023.05
Feature	30 PCS parallel operation in Grid Forming Mode, Black Start Capability, On/Off-Grid seamless transfer



Project	Laguocuo Integrated Source / Grid / Load / Storage Project
Application	Off-Grid Operation / Grid Forming Control / Inertia Support / Black Start / Frequency Regulation / Voltage Control
Size	65MW / 130MWh
In service Date	2024.04
Feature	The largest off-grid 100% renewable based power system based on GFM BESS