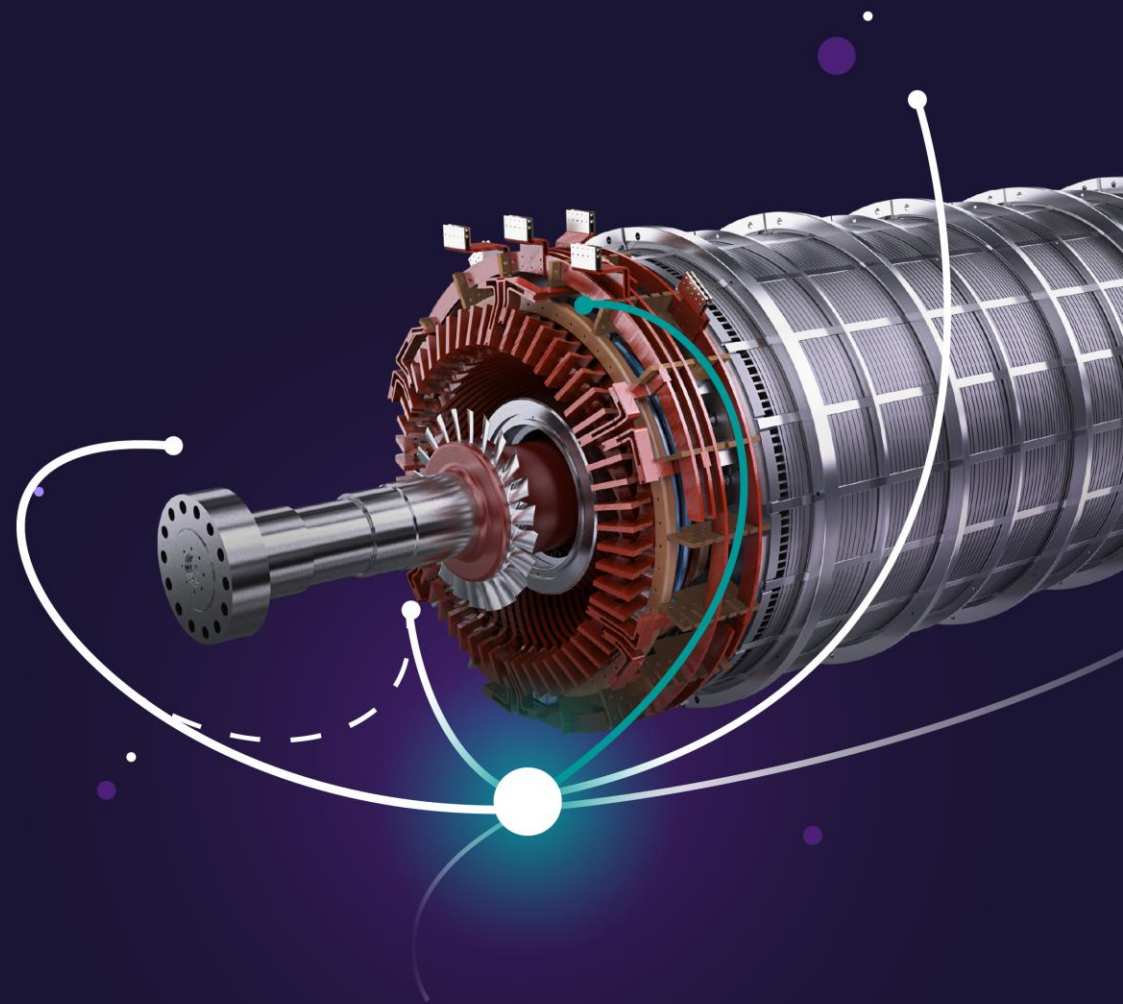


Rotating Grid Stabilizer Conversion Solution with Flywheel

Avoid power system blackouts with additional inertia and unlock new revenue streams by transforming existing power plant assets. Intended to enable a high share of renewable power infeed into the grid.



Est. Lead time
15 months



Min. event type
Other



Fleet experience
> 5 units

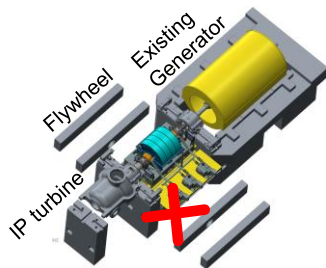
Basic Rotating Grid Stabilizer Conversion Solution

Intended Benefits



Grid stabilization becomes increasingly important with the rising share of renewable power generation that leads to a lack of short-circuit power and inherent inertia in the grids worldwide. Our solution is targeting the following benefits:

- Avoid black outs in volatile grids by significantly increasing system inherent inertia via adding rotating mass by means of a flywheel #4D217A
- Secure economic advantages in contracts with the Transmission System Owner (TSO) by optimization of frequency stabilization capabilities
- Secure future economic operation by reusing existing power plant equipment, grid connection and permits
- Site transformation to unlock new revenue streams and thereby avoid stranded generation assets
- Dynamic voltage control via reactive power compensation
- Ensure grid resilience by short circuit power contribution



Sustainability



- Enabler for Energy Transition
- Grid Resilience

Availability



- Improve Asset Utilization

Power



- Reactive Power Contribution

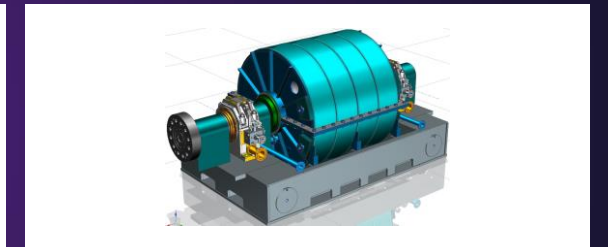
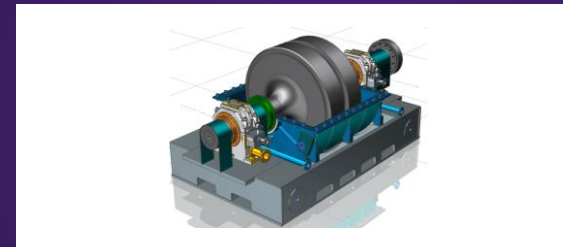
Scope



Siemens Energy provides tailor-made turnkey Rotating Grid Stabilization Conversion Solutions to address your needs based on our proven technology and execution experience.

Existing turbo-sets in thermal power plants can be converted to rotating grid stabilizers with increased inertia contribution:

- Analysis of existing assets including life time assessment
- Decommissioning and dismantling of turbine components
- Integration of a flywheel with scalable and customized design into the existing shaft configuration
- Adaptation of the foundation to enable installation of the additional flywheel including its auxiliary systems
- Installation of a hydro motor with a SFC or a pony motor with a VFD for startup and accelerating the generator
- Upgrade of the I&C and protection systems as well as integration into the existing plant electrical systems



Legal Disclaimer

Full Disclaimer

This is not an offer to sell. Prices, if any are stated, are not firm and are estimates for indicative purposes only. Among other things, this indicative price is based upon certain assumptions, such as availability of resources, existing plant, configurations, and other factors, and excludes any insurance, escalation, currency exchange risk, duties, tariffs, taxes of any kind, mobilization/demobilization, and other charges.

Lead times, event types and suggested minimum outages are estimates only as of the date of this document and may differ substantially if and as part of any quotation by Siemens Energy. Under no circumstances shall this Concise Page establish any obligation or liability of Siemens Energy or be considered to be a firm or binding offer by Siemens Energy.

The features and attributes of the product enhancements described in this Concise Page are based upon the applicable product(s) as-manufactured or as-delivered by Siemens Energy. For products manufactured, installed and/or serviced by third parties, those features and attributes may vary substantially and/or may not apply.

Siemens Energy is trademark licensed by Siemens AG.