GE VERNOVA

POWER PLANT SOLUTIONS FOR DATA CENTER DECARBONIZATION*

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July 2025

* Decarbonization as used herein is intended to mean the reduction of carbon emissions on a kilogram per megawatt hour basis

Gas Power at GE Vernova

WE ARE GE VERNOVA

POWER

Gas Power
- Heavy Duty Gas Turbines
- Aeroderivative Gas Turbines
- Steam Turbines/Generators

Steam Power
- US Nuclear, Global Coal
- Steam, Generators, Boilers

Hydro
- Hydro Turbines/Generators
- Pumped Storage

Nuclear
- Boiling Water Reactors
- Fuel
- Small Modular Reactors

WIND

Onshore Wind
- 2 - 3.5 MW platform
- 5 – 6 MW platform
- Services & repowering

Offshore Wind
- Haliade-150 (6 MW)
- Haliade-X (14 MW)

Wind Power
- ONW blades
- Haliade X blades

ELECTRIFICATION

Grid Solutions
- Transmission
- Transformers
- Grid Automation

Power Conversion & Storage
- O&G Electrification
- Naval Electrification
- Microgrids
- Inverters
- Energy Storage

DIGITAL

- Grid Software
  - Opus One Plat.
- Manufacturing
- Power and O&G

FINANCIAL SERVICES

Financial Services
- 3rd Party Financing Support
- Direct Financing though Equity

ACCELERATORS

Advanced Research
- Differentiated Technologies
- External Partnerships

Consulting Services
- Power Market Assessments
- Investment Decision Analysis

PURPOSE BUILT FOR THE ENERGY TRANSITION

The World Needs More Power that's Sustainable, Affordable, Reliable & Secure

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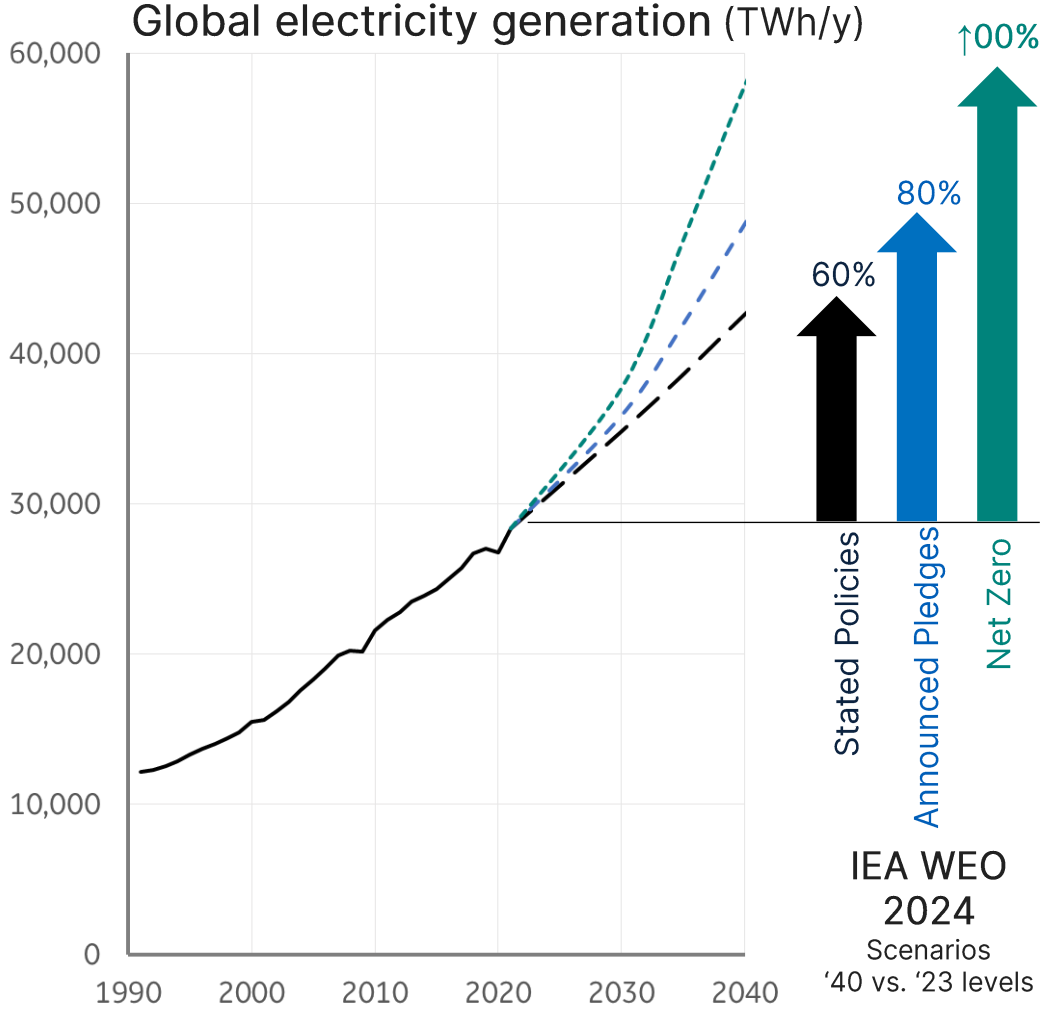
Electricity demand growth continues

- >80% growth projected over the next 2 decades
- ~750 M people lack access to reliable electricity
- Key enabler of economic growth, health & prosperity
- Electrification of transportation, industry and heat to decarbonize non-power sectors

GE Vernova's technology base helps generate ~25% of the world's electricity

- ▶ we must help electrify the world
- ▶ while decarbonizing it with lower-carbon technology
- ▶ that is sustainable, affordable, reliable & secure



Source: IEA World Energy Outlook 2024

CHALLENGE

- More efficient and sustainable operations
- Decarbonization goals and objectives
- Industrial electrification

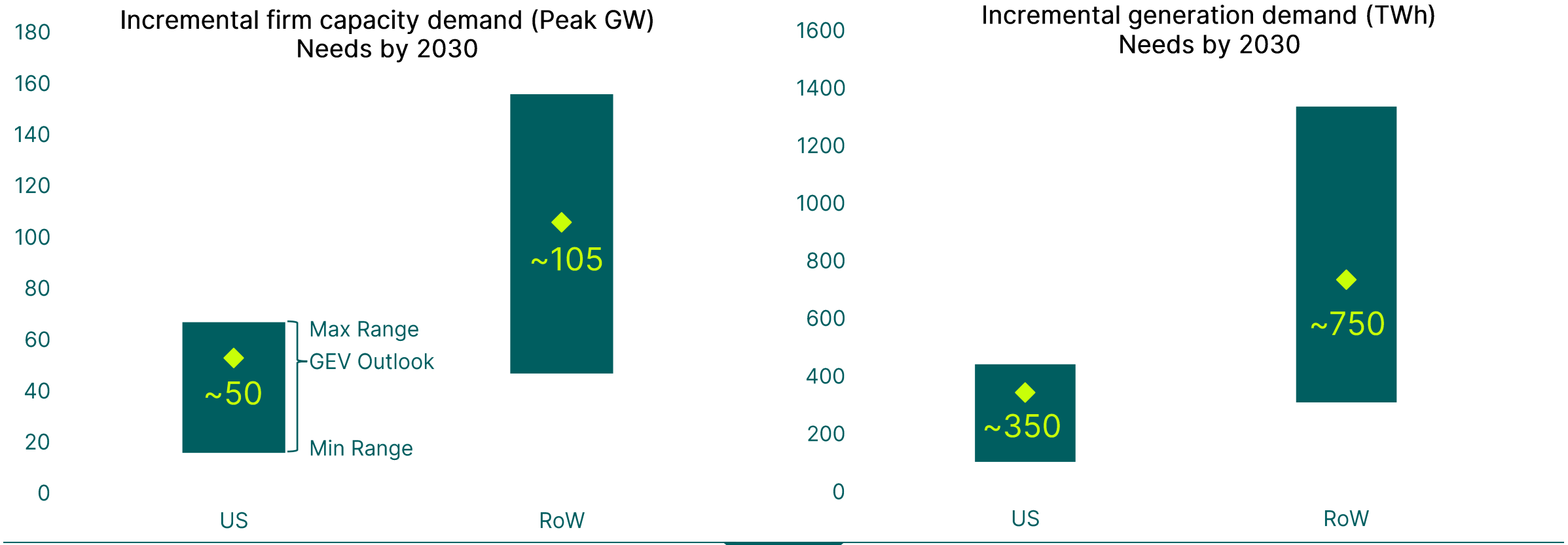
Dramatic increase in:

- Artificial intelligence
- Machine learning

Data centers and world need

Sustainable, fast, reliable power

Hyperscaler Data Center Power Needs



New global firm power demand for data centers alone nearly equals Brazil's total consumption in 2024

Note: Data Center demand is only one portion of the load growth challenge; electrification of transport and buildings, reshoring and electrification of manufacturing, economic growth, etc. will also add tailwinds to power demand; 2024 US electricity consumption estimated at ~4300 TWh | Sources: Goldman Sachs, IDC, IEA, EIA, S&P Global, Wells Fargo, Bank of America, Lawrance Berkley National Lab, GE Vernova VOC

Data Center Power Priorities

- Availability of Power (Speed & Reliability)
- Quantity
- Cost Effective
- Regional Procurement
- Low Carbon Intensity

Challenges

- Long grid interconnection queues
- Rate payer pushback
- Increased regulatory scrutiny

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IEA
Electricity 2024 report

"Electricity consumption from data centres, artificial intelligence (AI) and the cryptocurrency sector could double by 2026."

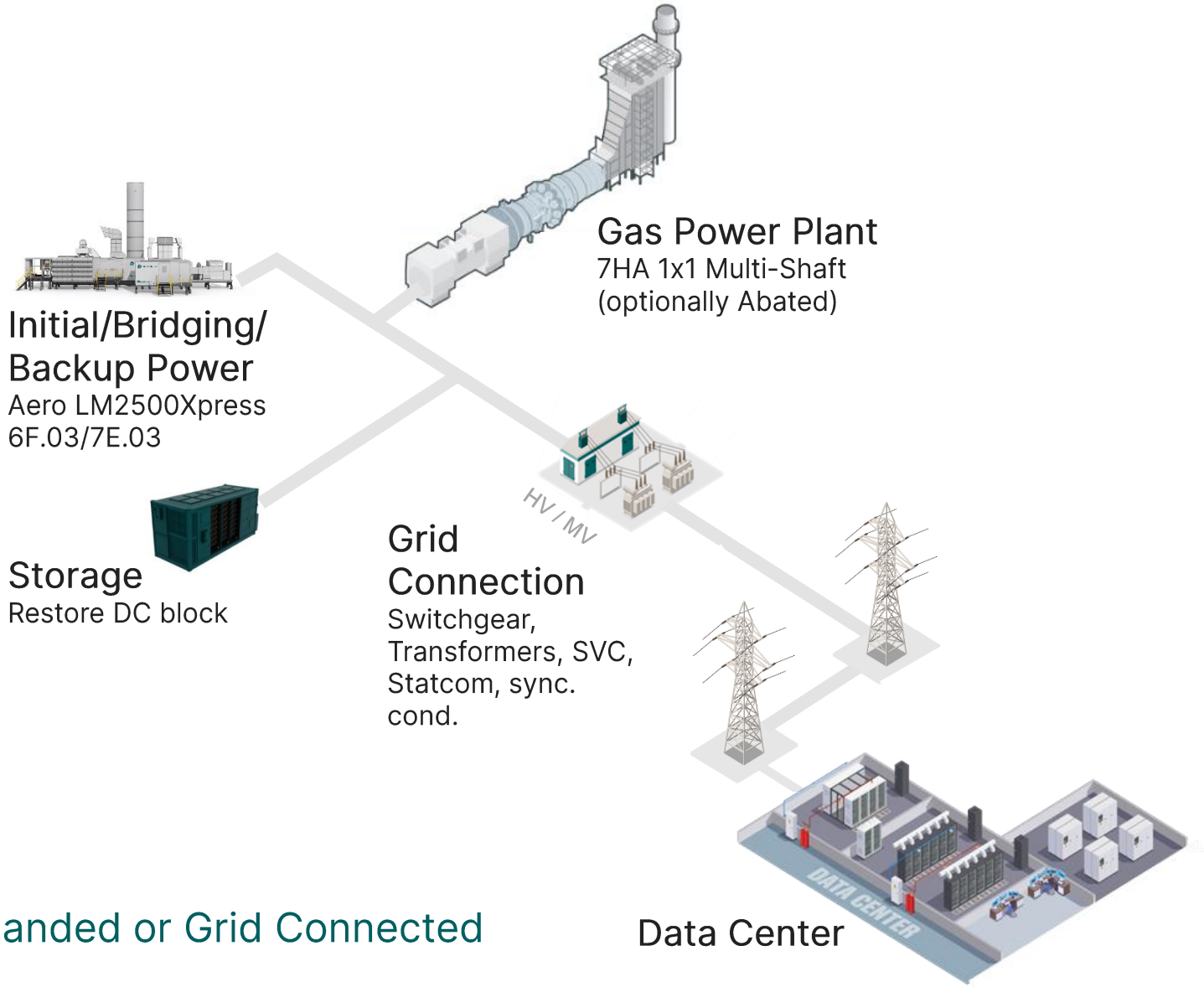
Google

"Our net-zero goal is supported by an ambitious clean energy goal to operate our offices and data centers on 24/7 carbon-free energy"

PJM
US Regional Balancing Authority

"Rising energy demand in the region PJM serves is increasingly driven by the development of data centers throughout the PJM footprint, combined with the accelerating electrification of transportation and industry."

Tailored Power Solution for Data Centers



Islanded or Grid Connected

INITIAL CONFIGURATION ANALYSIS

Stability & Torsional Studies

Solution Architecture Recommendation

INITIAL/BRIDGING/BACK-UP POWER

Aeroderivative Gas Turbines

Small Heavy Duty Gas Turbines

PRIMARY POWER

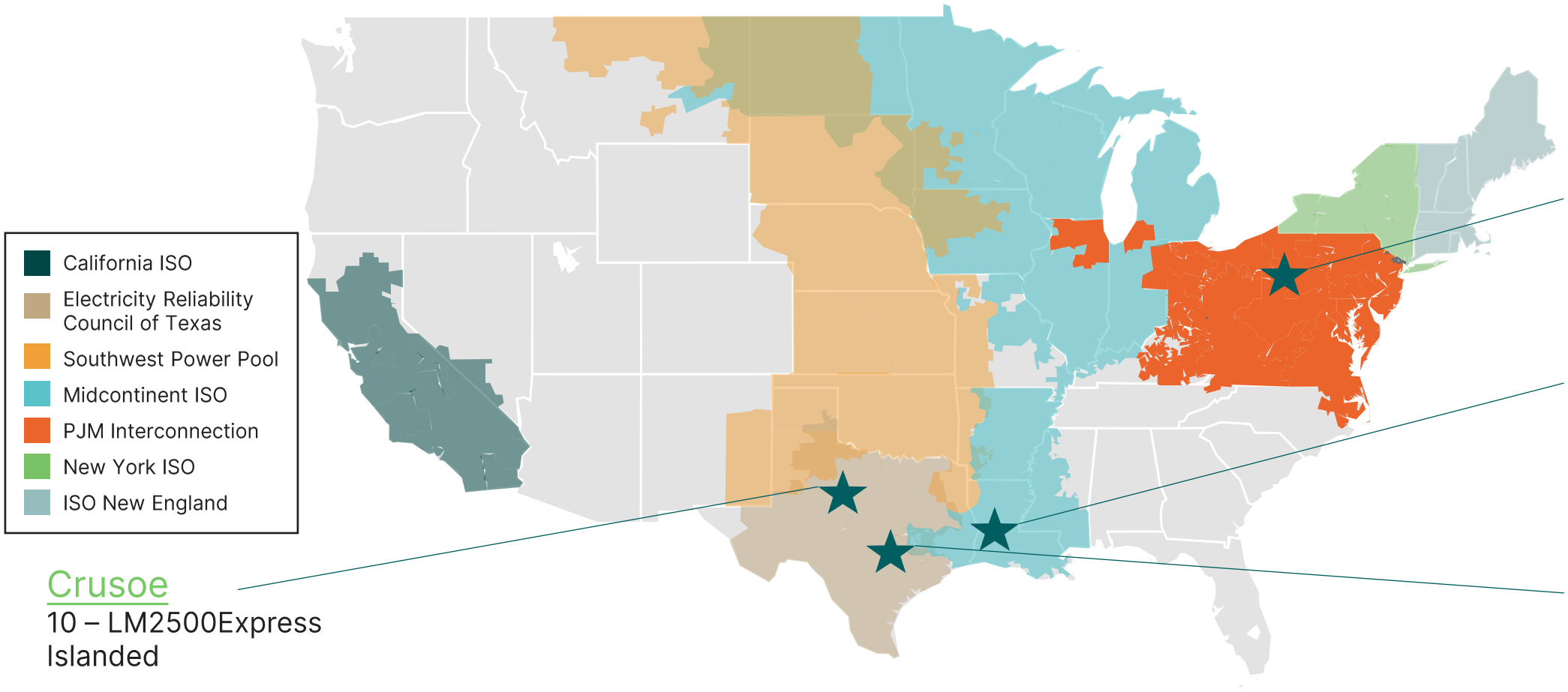
Heavy Duty Gas Turbines
in Combined Cycle

POWER SOLUTION ENABLERS

Power Conversion & Storage

- Energy Management System & Battery Energy Storage
- Super Capacitor, Load Banks, Statcoms

Recently Announced US Co-Located Data Center Experience



Homer City
7 - 7HA.02
Grid Connected

Chevron & Engine No. 1
7 - 7HA.02
Islanded

NRG
2 - 7HA.02
Grid Connected

Crusoe
10 – LM2500Express
Islanded

Multiple ways to decarbonize* existing & future gas power plants

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Pre-combustion

Use a near zero or carbon neutral fuel

- Hydrogen (blue, green, pink)
- Synthetic (renewable) methane
- Ammonia (NH_3)
- Biofuels

Post-combustion

Remove carbon from the plant exhaust

State of the Art
- Liquid Solvents

Emerging
- Solid Sorbents
- Cryogenics
- Membranes

*Decarbonization as used herein is intended to mean the reduction of carbon emissions on a kilogram per megawatt hour basis.

GE Vernova's Integrated NGCC+CCS Solutions

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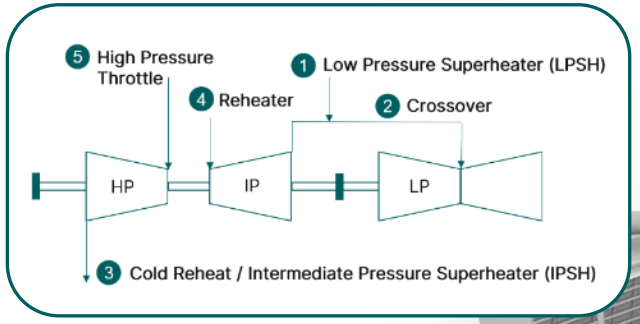
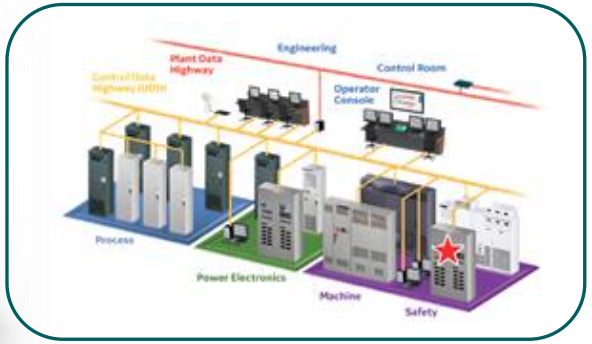
Steam Integration

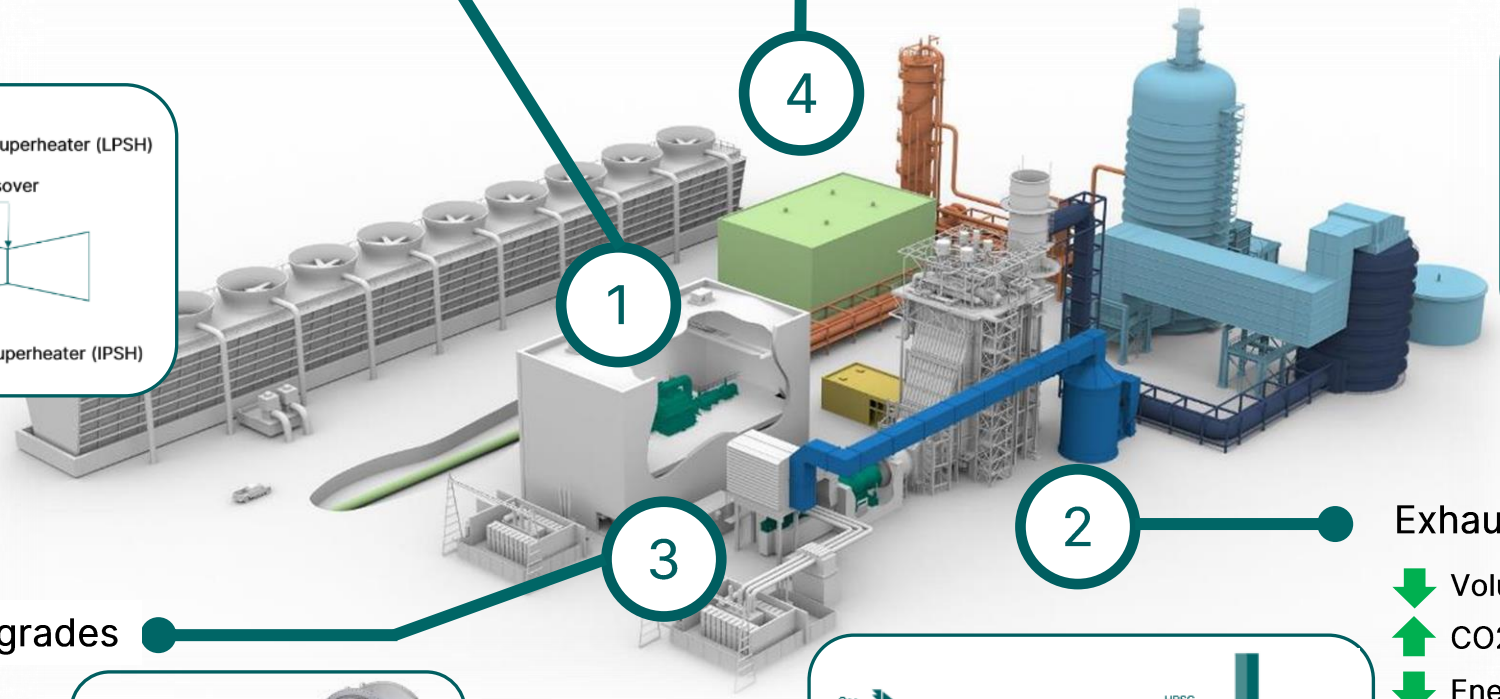
- CapEx
- CCS Plant Size
- Plant Efficiency



Integrated Control System

- Reliability



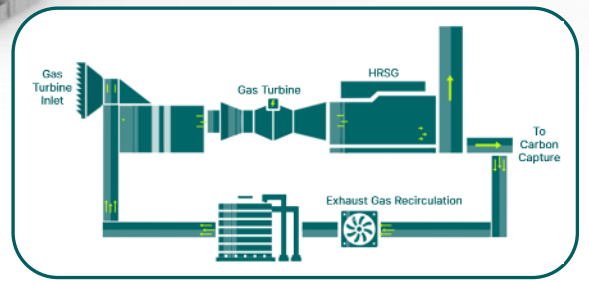


Equipment Upgrades

- CapEx
- Plant Efficiency
- Plant Output

Exhaust Gas Recirculation (EGR)

- Volumetric Flow of Flue Gas
- CO2 Concentration
- Energetics
- CapEx



Integrated NGCC+CCS solutions can improve NGCC efficiency & reduce CCS cost (CapEx & OpEx)

NZT Power

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GE Vernova + Technip Energies WILL LEAD THE INTEGRATION OF THE

world's first CARBON CAPTURE and COMBINED-CYCLE power plant

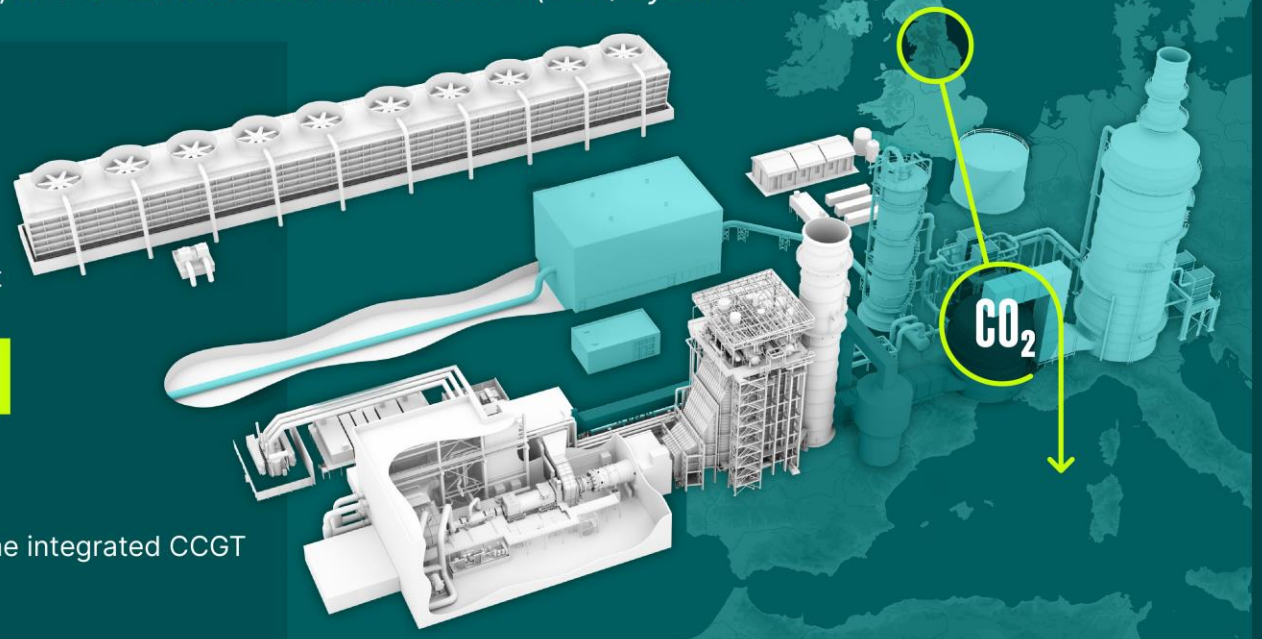
The plant will be powered by GE Vernova's advanced 9HA.02 gas turbine, a steam turbine, a generator, a Heat Recovery Steam Generator, and an Exhaust Gas Recirculation (EGR) system.

The plant will feature the 1st commercial use of **GE Vernova's EGR technology**, which:

1. Recycles CO2-rich flue gas back to the turbine inlet
2. Increases the concentration of CO2 in the exhaust

Potential benefits of the EGR system:

- Reduced overall carbon capture plant cost
- Improvements in performance/emissions for the integrated CCGT
- Reduced solvent usage



Expected to capture
UP TO
2 MILLION
TONNES OF CO2 ANNUALLY
+
Power the equivalent
OF
1 MILLION
HOMES
WITH
FLEXIBLE
DISPATCHABLE
LOWER CARBON
POWER

vernova.is/ccs-nzt

Carbon Capture Capable Power Island

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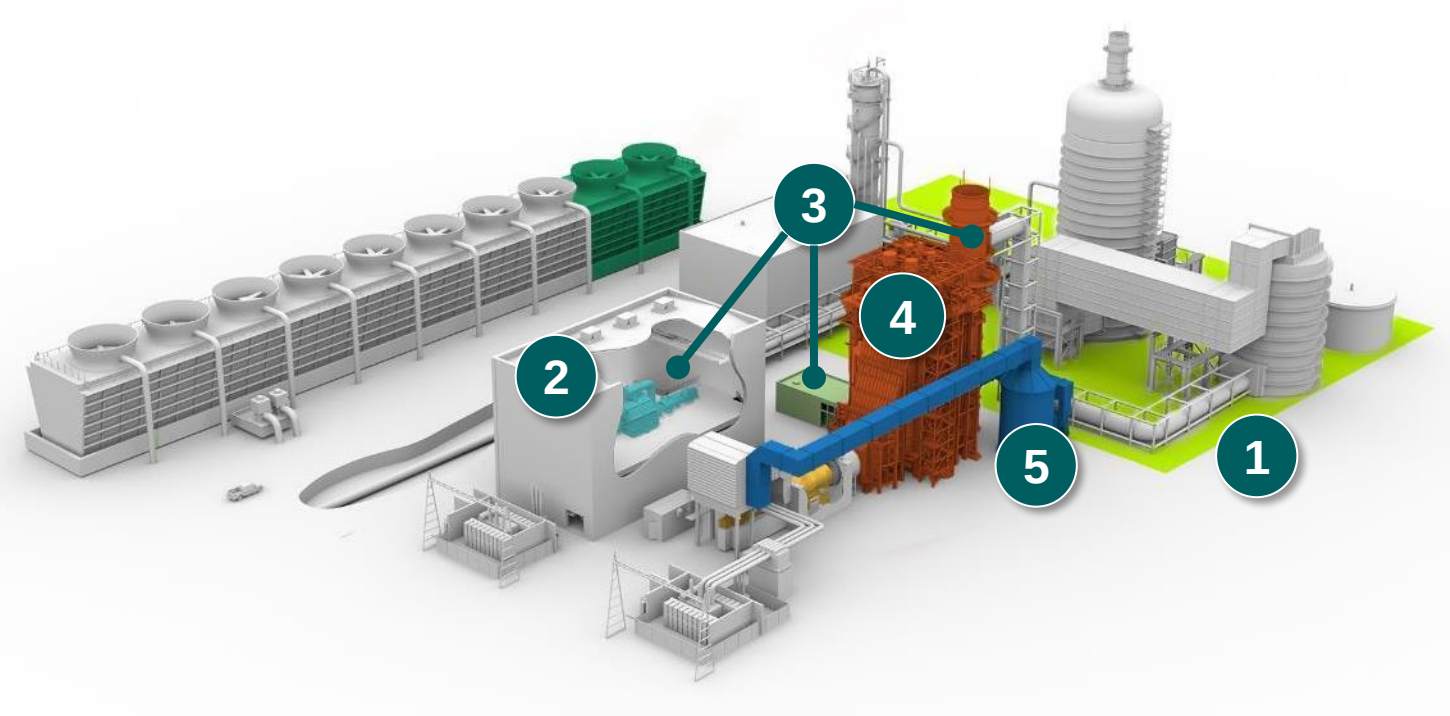
Configure the Power Island to support future integration with a Carbon Capture Island without significant modification or outage

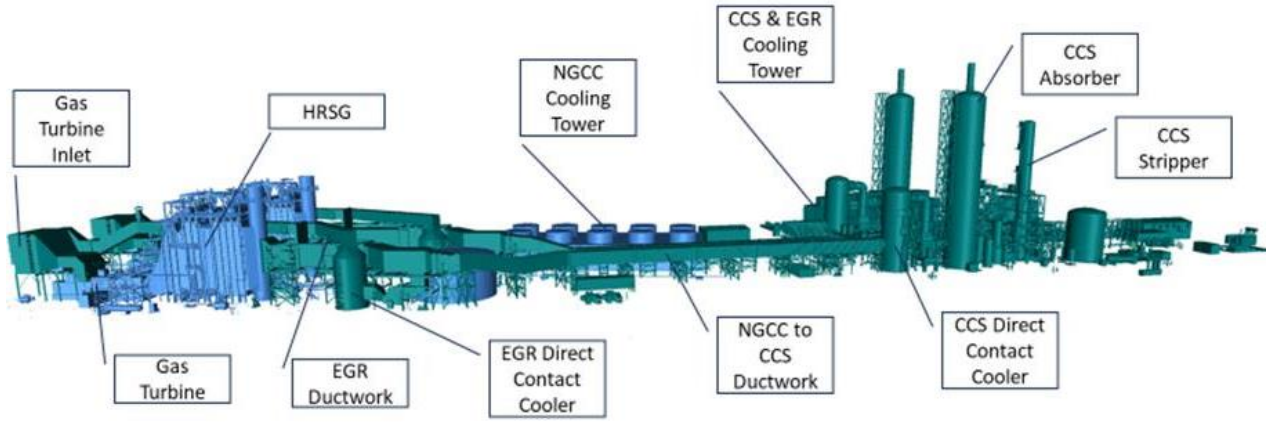
	Item	Benefit
1	Estimated Footprint for Carbon Capture	Improved land use
2	Steam Turbine Configured for Extraction	Improved performance during carbon capture operation
3	Integration Tie-ins (HRSG/ST/Electrical/ Controls)	Reduced planned outage during NGCC/CCS tie-in
4	Provisions to Eliminate Flue Gas Blower	Less CapEx; Less maintenance
5	Provisions for Exhaust Gas Recirculation	Reduced capture island CapEx and OpEx; Reduced airborne emissions; Improved part load efficiency



Enhanced CO_2 concentration with EGR

From Southern Company Plant Barry FEED study, due to EGR:

- ▼ 15% Solvent Makeup (reduced O2 results in reduced solvent oxidation)
- ▼ 4% Total Plant Cost CAPEX (CCS piping, absorber size and materials)
- ▼ 27% kg/hr reduction SOx (EGR eDCC mitigates SOx to atmosphere from absorber stack)
- ◀▶ No Change to plant auxiliary loads when EGR is added



Access the Barry report 'Retrofittable Advanced Combined Cycle Integration for Flexible Decarbonized Generation'

Note:
The estimated benefits for each site must be confirmed with the capture provider as part of a FEED study. Results will vary with the amount of exhaust gas recirculation.

GE Vernova is excited about the future and the role that gas turbines will play in decarbonizing* our society

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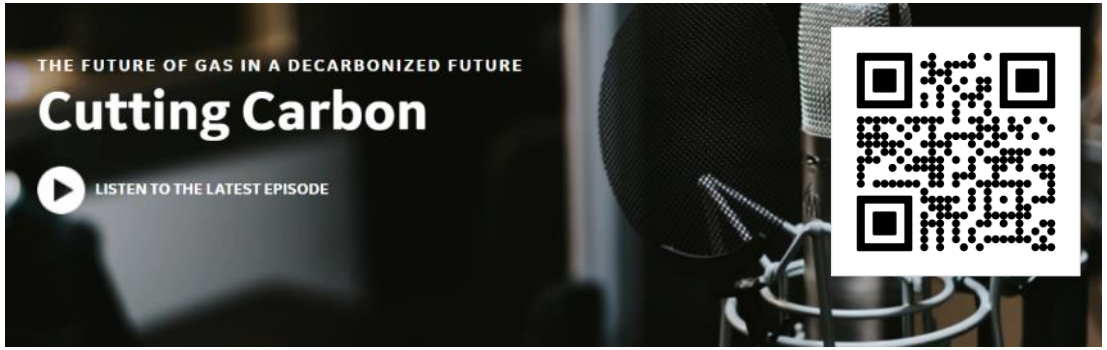
THE FUTURE OF ENERGY

Building a world that works

CUTTING CARBON PODCAST

7 seasons: conversations about our energy future



gevernova.com/gas-power/future-of-energy

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