



Central inverter 1500V technology for PV Power Plants

GE Power Conversion

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Imagination at work

WE BRING TECHNOLOGY

Cost-Effective

Higher Productivity

Long-term Support

Building On

20+Years

Expertise in Renewables

34GW

Renewables

Installed Globally



UTILITY-SCALE SOLAR CHALLENGES

Deliver reliable & efficient solutions beyond government support & CAPEX reduction



PROFITABILITY PRESSURE

Reducing **tariffs** and **subsidies** impacting investor's return



GRID STABILITY

Solar PV expected to represent **29%** of total power by **2040**



GROWING INSTALLED BASE

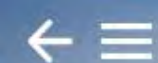
Expected to grow from **272GW** to **522GW** globally by **2020**

Delivering **sustainable, reliable** and **profitable growth** needs focus on **LCOE**



View GE's
SOLUTION





FULL SYSTEM SOLUTIONS

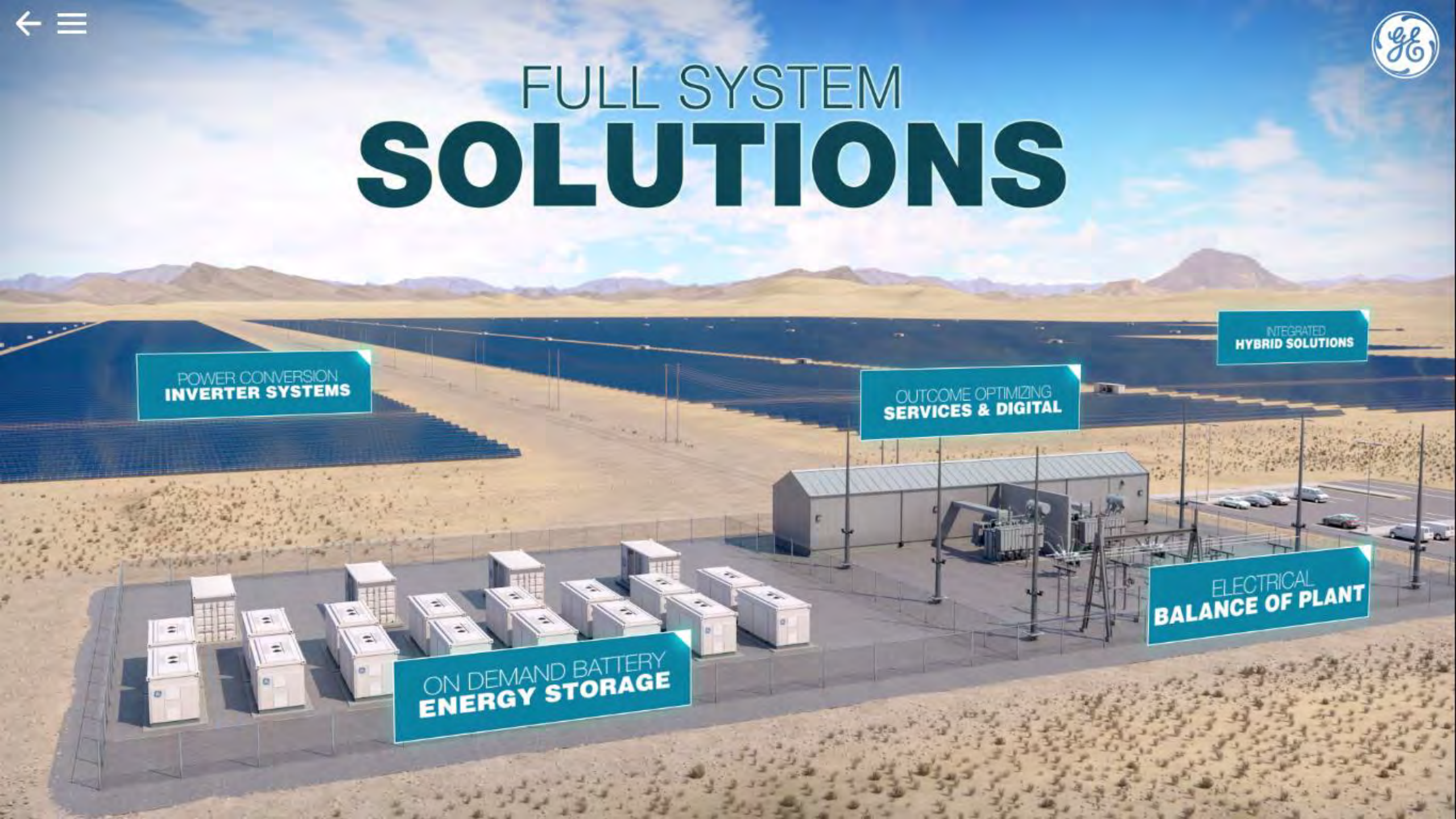
POWER CONVERSION
INVERTER SYSTEMS

OUTCOME OPTIMIZING
SERVICES & DIGITAL

INTEGRATED
HYBRID SOLUTIONS

ON DEMAND BATTERY
ENERGY STORAGE

ELECTRICAL
BALANCE OF PLANT

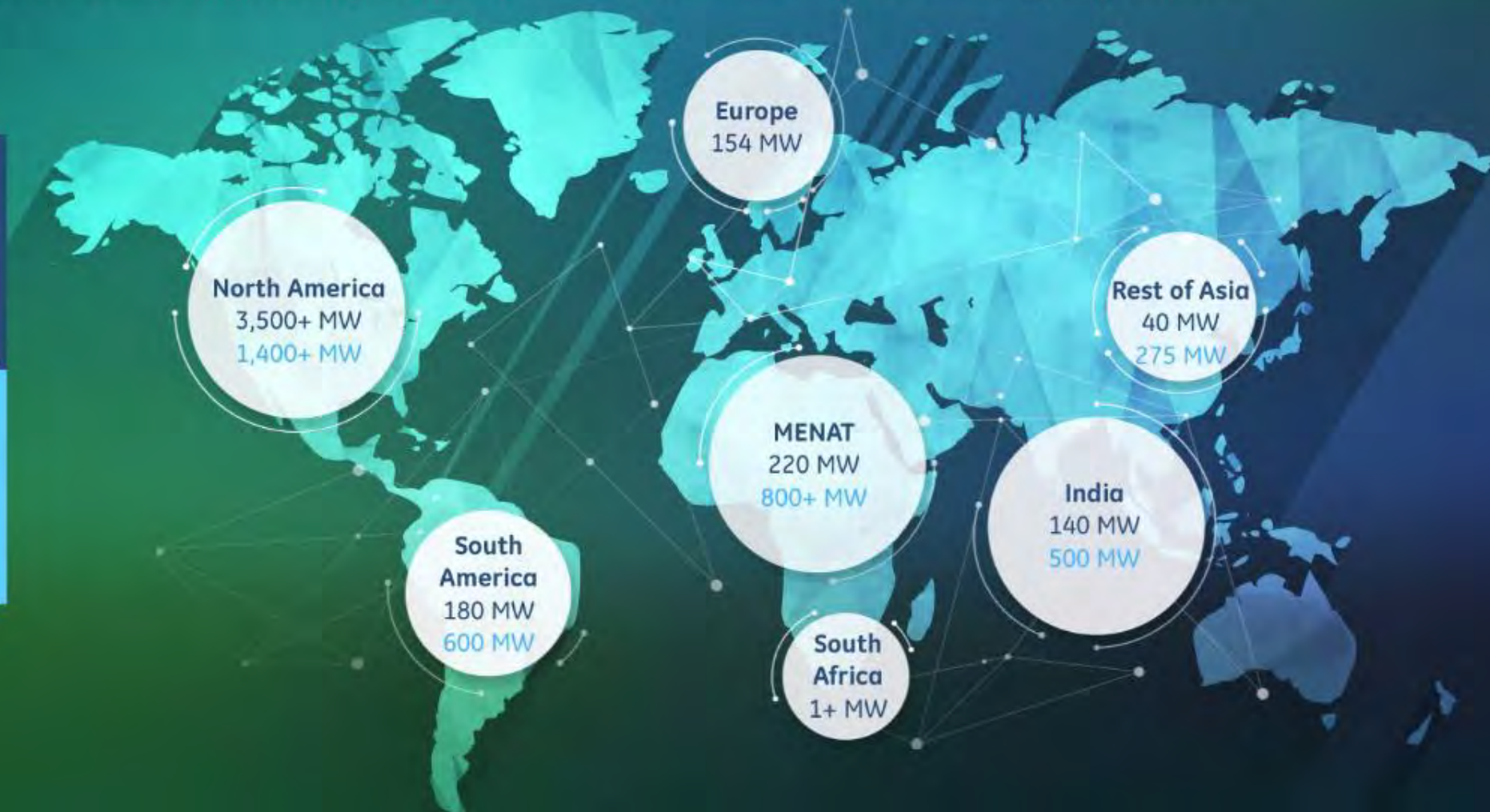


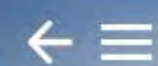
Serving Global Customers with Local Expertise

GE has been an experienced key partner in the solar industry since early 2000 with a proven track record in energy infrastructure, grid connections and utility scale solar PV with local manufacturing capabilities

4.2+ GW
Global installed
base of Solar Inverters

3.5+ GW
Global backlog
in Solar Inverters





FULL SYSTEM SOLUTIONS

POWER CONVERSION
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SOLAR INVERTER SYSTEMS

LOWERING THE COST OF ELECTRICITY



LOWER OPERATING
EXPENSES
1500V REDUCES NUMBER
OF MV TRANSFORMERS

up to
15%

**LOWER
SYSTEM COST**
OPTIMIZING NECESSARY
EQUIPMENT

up to
3%

up to
99.2%
**SiC PEAK
EFFICIENCY**
MAXIMIZES YIELD

MAXIMIZED EFFICIENCY
SOLAR INVERTERS



LOWER TOTAL INSTALLED COST
CONTAINER SOLUTIONS





INVERTER

SOLUTION HIGHLIGHTS



LV5

1.X / 2.X / 3.X MW

- 98.5% CEC efficiency
- Optimized power block and mounting
- W x H x D: 2.8M x 2M x 2M

LV5+

2.5 MW

- 99% CEC efficiency
- Based on SiC power electronics
- W x H x D: 2.4M x 2.9M x 2.0M

MAXIMIZE EFFICIENCY

LV5 SERIES

Features & Benefits



1.5kV Utility Scale Inverter

GE was first to introduce cost-effective 1.5kV



Higher CEC Efficiency

From 98.5% up to 99% (LV5+)



Robust Air Cooling System

With sediment separators for hot and harsh environments and reduced maintenance



Predix Ready

Predictive maintenance and advanced diagnostics for optimal performance monitoring



Integrated Solution

Available as skid or eHouse solution



POWER CONVERSION SOLUTION HIGHLIGHTS



LV5 Compact Skid Solution

1.X / 2.X / 3.X MW

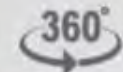
- 2.2MW, 2.5MW, 3.125MW, 4.4MW, 5MW or 6.25MW
- Integrated MV step-up transformer
- Factory pre-tested outdoor solution



LV5+ eHouse Solution

Maximizing lifetime value

- 1-2% more AEP
- Plug & Play 20' ISO container
- Main transformer sleep feature

 360° Explore

LOWER TOTAL INSTALLED COST

CONTAINER/SKID SOLUTIONS

Features & Benefits



Plug & Play

Pre-tested at the factory and ready to install at site technology



Highly Flexible

2 to 5MW containerized or skidded solutions, for UL and IEC



Option for AEP Maximization

1-2% Annual Energy Production increase with LV5+ and SiC



Predix Ready

Predictive maintenance and advanced diagnostics for optimal performance monitoring


HV SUBSTATION



PRIMARY EQUIPMENT




GE offers a comprehensive portfolio of High Voltage and Medium Voltage substation equipment and technical expertise to ensure efficient and reliable interconnection of solar generation.

 [Explore](#)

MONITORING & DIAGNOSTICS



Maximize the life of critical substation assets with advanced sensors to monitor, manage and detect issues before it results in equipment failure or damage.


 [Video](#)

INTELLIGENT DIGITAL SUBSTATIONS



GE offers advanced digital solutions built on a secure, standards-based communications architecture (IEC 61850).

Digital communications minimize labor, physical interfaces, substation complexity, and footprint.

 [Explore](#)

AUXILIARY SYSTEMS



PROTECTION & CONTROL

Integrated, Modular Automation Panels



GE offers a comprehensive portfolio of protection, control and automation solutions delivered within pre-engineered and tested panels minimizing installation and commissioning requirements.



Explore

IEMS

Integrated Energy Management



GE's Integrated Energy Management Solutions deliver tailored software visualization tools and services focused on maximizing power system reliability and stability.



Brochure

SUN IQ

Monitoring & Controls



GE's SunIQ monitoring and controls are design for mounting in solar farm control rooms. Designed with real and reactive power controls which manage solar park shut-down and start-up.



Brochure

OUTCOME OPTIMIZING **SERVICES & DIGITAL**

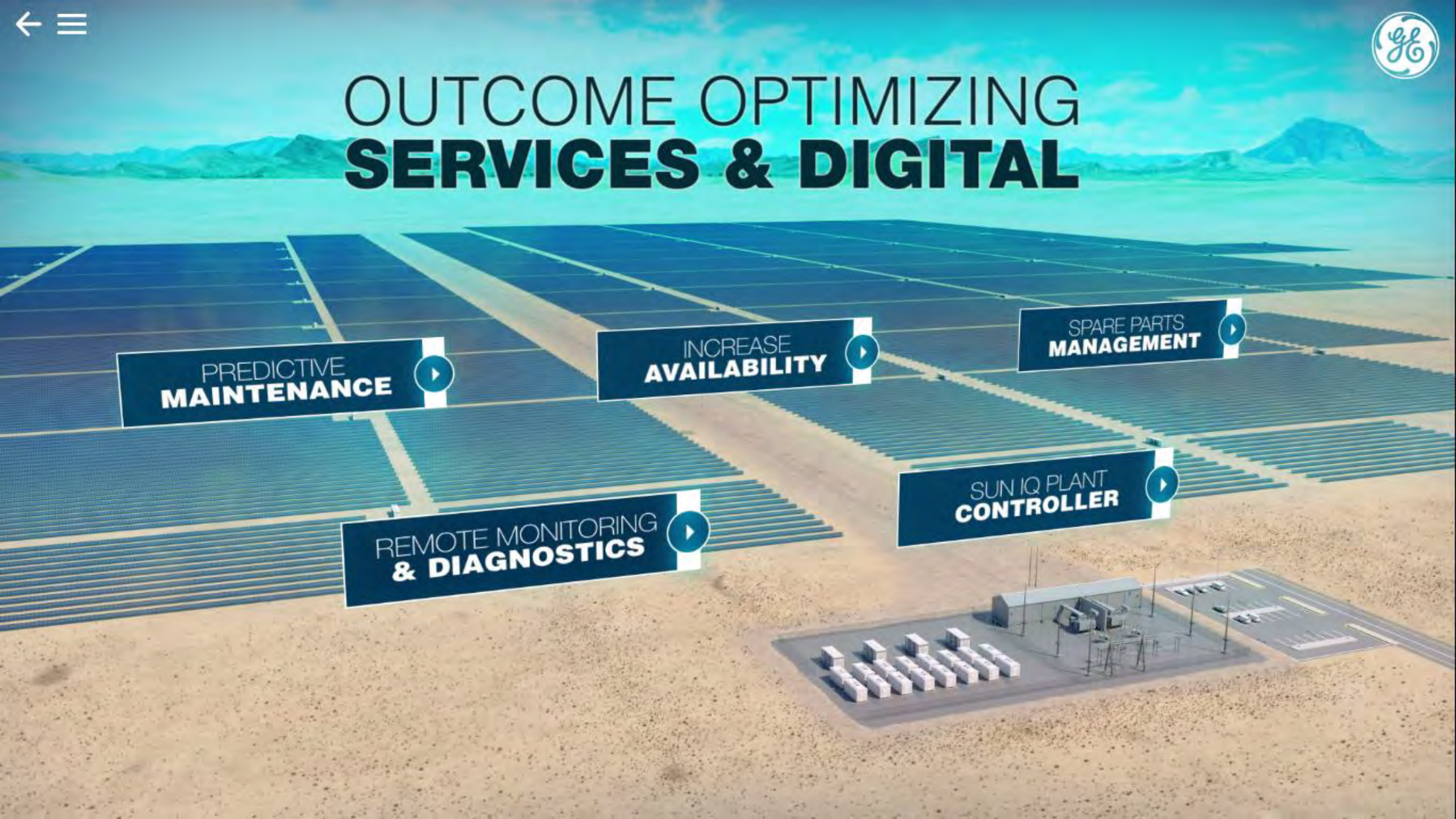
PREDICTIVE
MAINTENANCE

INCREASE
AVAILABILITY

SPARE PARTS
MANAGEMENT

REMOTE MONITORING
& **DIAGNOSTICS**

SUN IQ PLANT
CONTROLLER



INTEGRATED HYBRID SOLUTIONS

CLEAN, RELIABLE, & PREDICTABLE POWER

CUSTOMERS CAN
REDUCE
MORE THAN

66 % OF CO₂
EMISSIONS
PER YEAR

From individual components to an integrated solution, our flexible offering ranges from pre-feasibility studies to final plant commissioning.

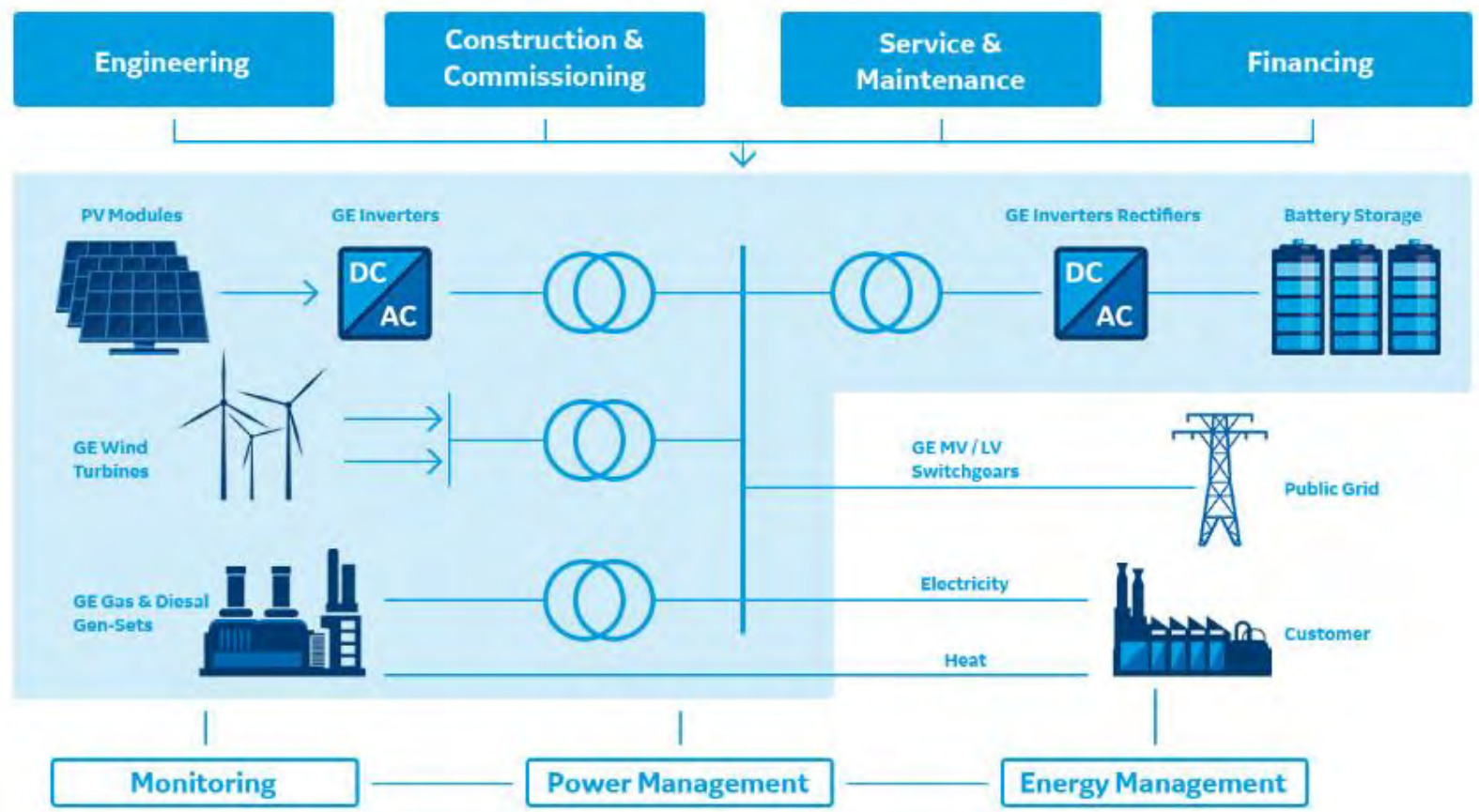
Solutions include GE technology and service agreements, and can help meet CO₂ ambitions of the Paris agreement.

BERLIN HYBRID
POWER PLANT



HYBRID SOLAR
ARCHITECTURE





IN
HYE
CLEAN,

CUSTOMER
REDU
MORE T

From individ
ranges from

Solutions inc
meet CO₂ an

BERL
POW

BATTERY ENERGY STORAGE SYSTEMS



GUARANTEED PERFORMANCE

Energy to meet your specific requirements



MODULAR & INTEGRATED

Equipment & Software Solutions

PURPOSE-BUILT ENCLOSURES



PROVEN Li-Ion TECHNOLOGY



GE AS A SOLAR PARTNER



TECHNOLOGY
LEADER



PERFORMANCE
GUARANTEE



COMMERCIAL & PROJECT
FINANCING



GRID INTEGRATION &
ENERGY CONSULTING

GRID INTEGRATION & ENERGY CONSULTING

TWO DECADES OF RENEWABLES INTEGRATION EXPERIENCE



120+

EXPERTS ACROSS
5 CONTINENTS



100

PATENTS IN THE
LAST 30 YEARS



4

IEEE LIFE
FELLOWS

GE's energy consulting experts provide **techno-economic** consulting services, **planning software** tools, and **training** to help overcome **renewable integration** challenges.





PERFORMANCE GUARANTEE



ACHIEVE

INVESTIBLE RETURNS

WITHOUT COMPROMISING QUALITY & PERFORMANCE



OPTIMAL

DEVELOPMENT COSTS

GUARENTEED PERFORMANCE & BANKABLE EQUIPMENT

TECHNOLOGY

PARTNER MODEL

- Performance ratio guarantee
- Decision on the PV module technology
- Optimization for the competitive tariff or capital cost or O&M or IRR

[VIEW MODEL](#)

BILATERAL

PARTNERSHIP MODEL

- Technology partner model
- Equity investment up to 40%
- Project development expertise
- Lower cost debt financing

[VIEW MODEL](#)

TURNKEY

PARTNERSHIP MODEL

- Bilateral Partnership model
- Construction, civil & installation works
- Project Lifecycle partner
- Project derisking with single interface

[VIEW MODEL](#)

TURNKEY MODEL

TYPICAL TURNKEY PARTNERSHIP MODEL

SCOPE & RESPONSIBILITY SPLIT



GE will provide financing and equipment for FAS PROJECT, 50 MW solar PV plant in EGYPT for EETC..

... construction works and a favorable payment scheme will help kick off the project and enhance the plant's bankability.