5th Annual STERG SolarPACES Symposium

12th – 14th July 2017

SOLARRESERVE®

SolarReserve Overview

Leading global integrated solar power business with a high quality development pipeline, differentiated proprietary technology and a proven track record of success

Development

- **Development pipeline of over 13 GW** across the world's most attractive solar markets includes CSP, PV and solar hybrid plants, leverage proprietary CSP storage technology with low-cost PV
- Developed projects and secured long-term power contracts for **625 MW representing US$2.9 billion** of project capital, with an additional **2,000 MW of projects under award**
- **Global presence** with HQ in California and 7 international offices strategically located in Africa, the Americas, the Asia-Pacific region, the Middle East, and Europe
- **Experienced management team** with over 27 GW and US$48 billion of combined transaction experience in 25 countries

ThermaVault™ Technology

- **Commercialized world's most efficient and lowest cost CSP with integrated storage** that solves the intermittency issues experienced with other renewable energy sources
- Unmatched proprietary CSP technology allows solar to operate as **baseload generation** and deliver power into **peak demand periods**, at a fraction of other storage technologies
- Portfolio of **108 U.S. and global patents and patent applications**, plus in-house 'know how' protects technology lead
- Ownership of technology enables **equipment supply opportunities and development advantage**

Operations

- More than **US$1.8 billion of projects in operation globally**
- **Flagship 110 MW Crescent Dunes CSP project** in Tonopah, Nevada with 10 hours of storage – in 2015 achieved commercial operation under the Power Purchase Agreement, a 25-year full offtake contract with NV Energy
- Company has **been awarded 346 MW of projects in South Africa**, with 246 MW currently operating
- Full **asset management capabilities**, includes supervision of operations, environmental compliance, lender and investor relations, and power offtake contract management

Global Reach Across Six Continents

Development portfolio of 13 gigawatts across the world's most attractive, high growth renewable markets

USA
SANTA MONICA, CA (HQ)

CRESCENT DUNES
Tonapah, Nevada
110 MW +
1,100 MWh storage

SANDSTONE
Nevada
2,000 MW +
20,0000 MWh storage

CHILE
SANTIAGO

COPIAPÓ
Atacama Region
260 MW +
3,400 MWh storage

TAMARUGAL
Tarapaca Region
450 MW +
5,800 MWh storage

LIKANA
Antofagasta Region
390 MW +
5,100 MWh storage

SOUTH AFRICA
JOHANNESBURG

REDSTONE
Northern Cape, 100 MW +
1,200 MWh storage

LESEDI
Free State, 75 MW

LETSATSI
Free State, 75 MW

JASPER
Northern Cape, 96 MW

HERTZOGVILLE
Free State, 50 MW

ROOIPUNT
Northern Cape, 150 MW +
1,800 MWh storage

KOTULO TSATSI
Northern Cape, 150 MW +
1,800 MWh storage

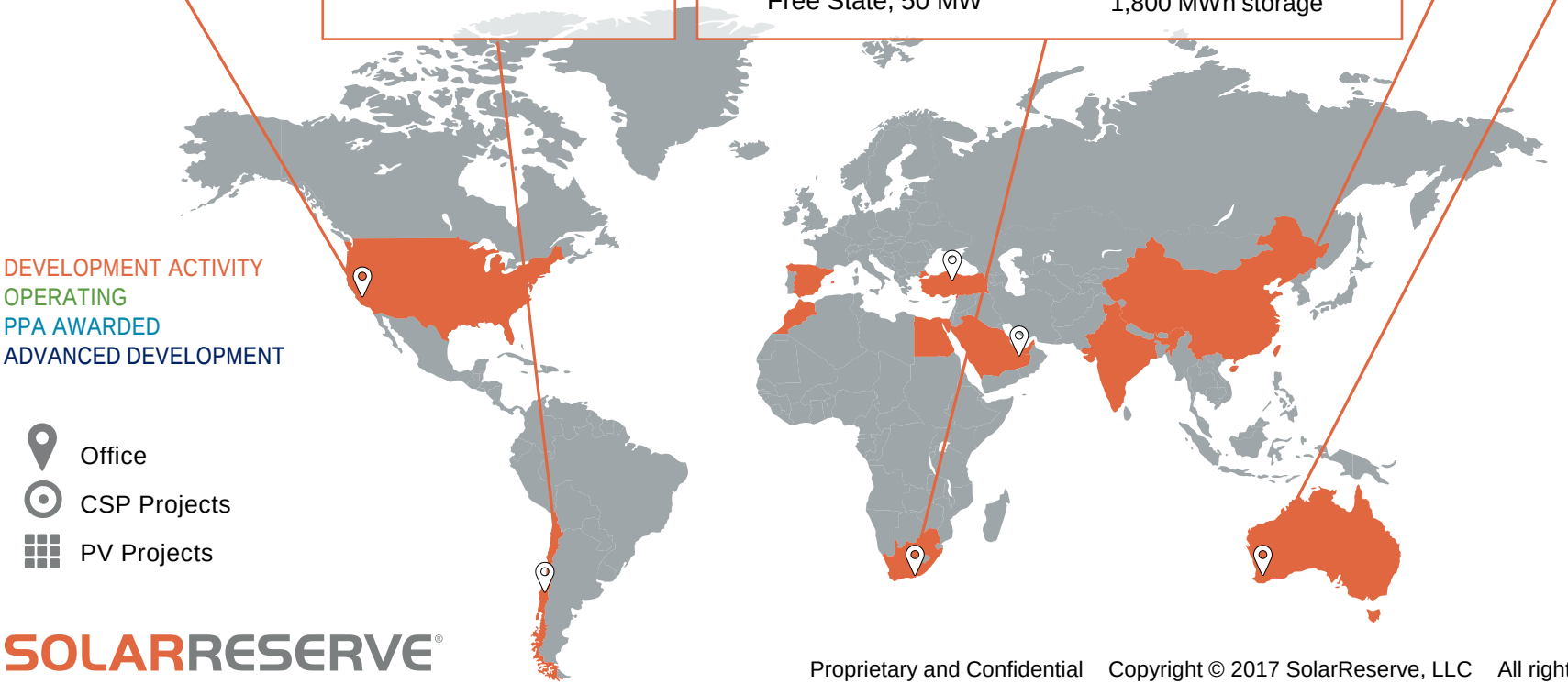
ARRIESFONTEIN SOLAR PARK
Northern Cape
75 MW - Wilger
75 MW - Arriesfontein

KALKAAR
Free State, 150 MW +
1,800 MWh storage

CHINA
4,000 MW of
Preliminary Agreements

AUSTRALIA
PERTH

AURORA
Port Augusta, SA
110 MW +
800 MWh storage



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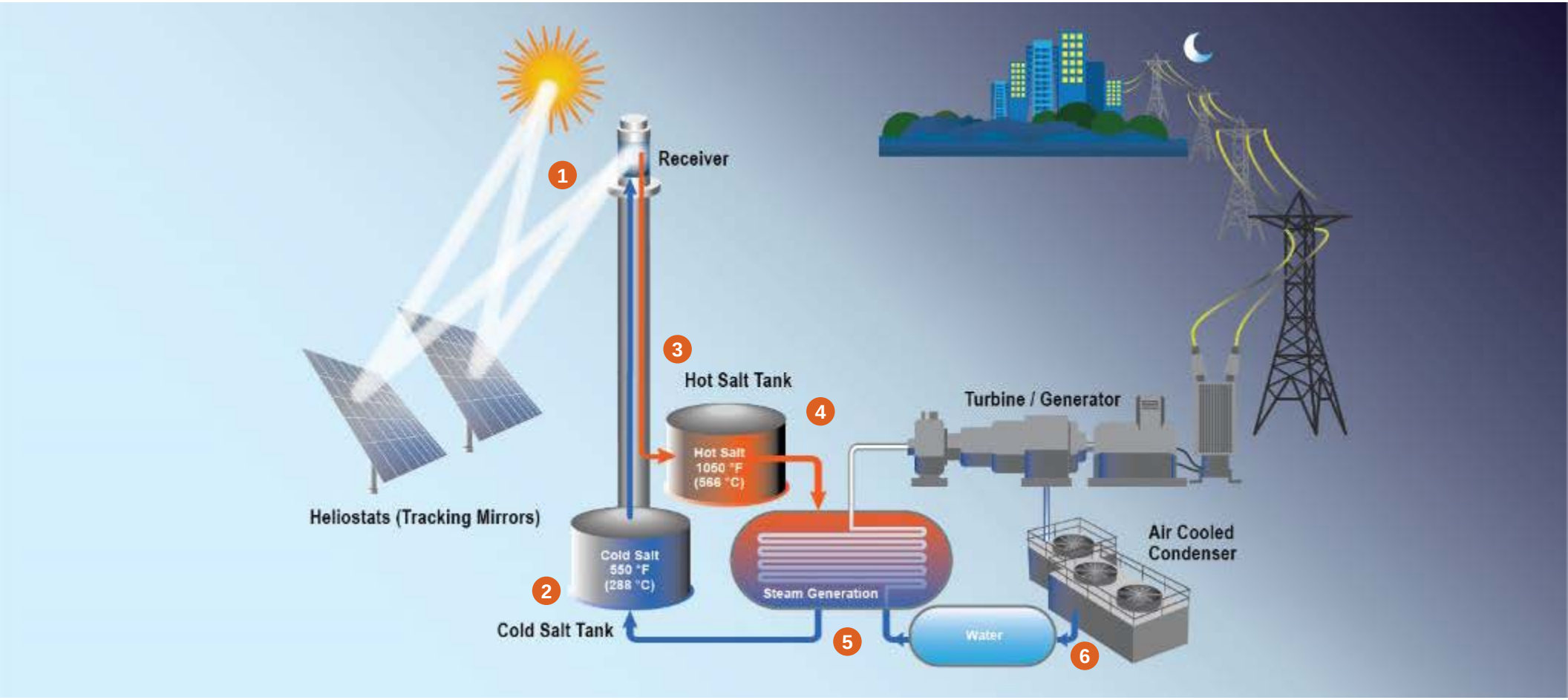
DIFFERENTIATED TECHNOLOGY

The solution for solar energy to operate reliably day and night, as a viable alternative to coal, oil, natural gas, diesel and nuclear

Unmatched Proprietary ThermaVault™ Energy Storage Technology

Sunlight heats the molten salt directly, resulting in the most efficient and economical energy storage solution

1. Sunlight is concentrated and directed from a large field of heliostats to a receiver on a 640 foot tower
2. Liquid salt from the cold salt tank is pumped through the receiver where it is heated to 1050°F (566°C)
3. The heated salt from the receiver is stored in the hot salt tank
4. Hot salt is pumped from the hot salt tank through a steam generator to create high temperature/high pressure steam, which drives a steam turbine, generating electricity
5. Cold salt at 550°F (288°C) flows back to the cold salt tank
6. Condensed steam from the steam turbine is recirculated for reuse



ThermaVault – “Next Generation” in Solar Technology

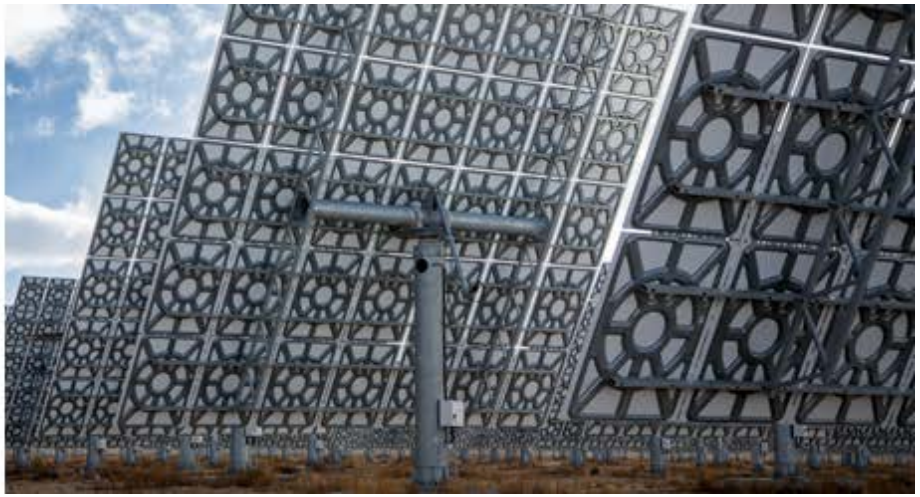
The most advanced solar energy storage technology available today

- Firm, non-intermittent supply of solar energy – day or night
- Fully integrated storage technology – not ‘bolt on’ style storage
  - Minimizes complexity and lost efficiency
  - Minimizes tanks and salt volumes
  - Minimizes transfers between mediums
- No requirement for natural gas or oil ‘back up’ to prop up the system
- Low-pressure, single phase flow receiver with atmospheric pressure storage tanks
- Can efficiently utilize dry cooling for steam cycle
- Large scale ‘bulk’ storage (+1000 MW-hours) with lowest capital cost energy storage system – far cheaper and more efficient than battery storage

The Benefits of ThermaVault Technology

Other than CSP with storage, no other solar technology can operate like a conventional power plant

- Operates like a conventional power generation asset with no back-up fossil fuel system required
- Load-shifting to peak periods, ancillary services and zero fuel price risk over project life provides significant value
- A more stable and secure output alleviates intermittency issues and more fully utilizes transmission assets
- Integrated molten salt in tower configuration stores energy more efficiently and cost effectively than other solar thermal storage solutions
- Storage technology provides large scale solar storage option (+1000 MW-hours) at a fraction of the cost of utility scale battery storage
- Produces twice the output of similar sized solar projects without storage



SolarReserve's solar thermal with storage facility deploys the only commercially viable renewable technology that can displace fossil fuel generation

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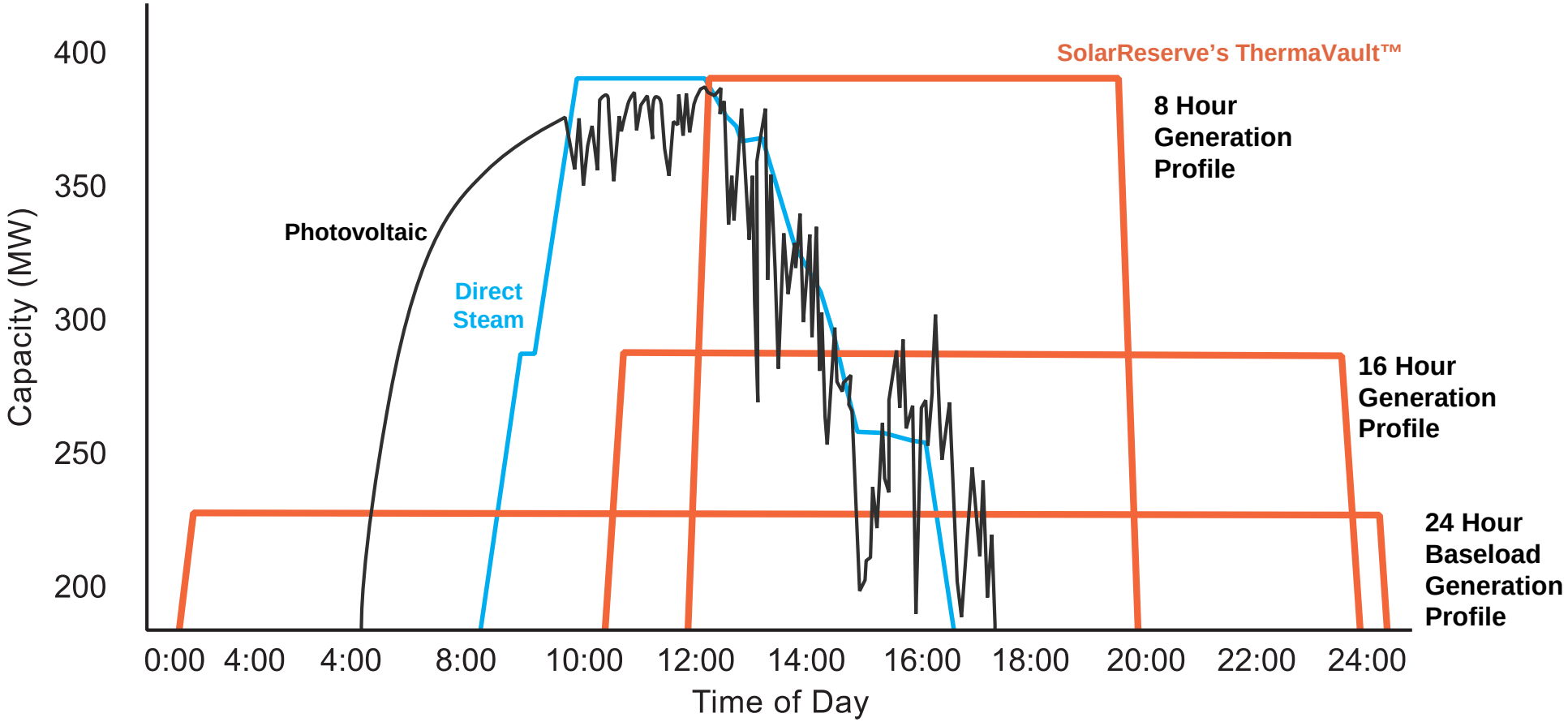
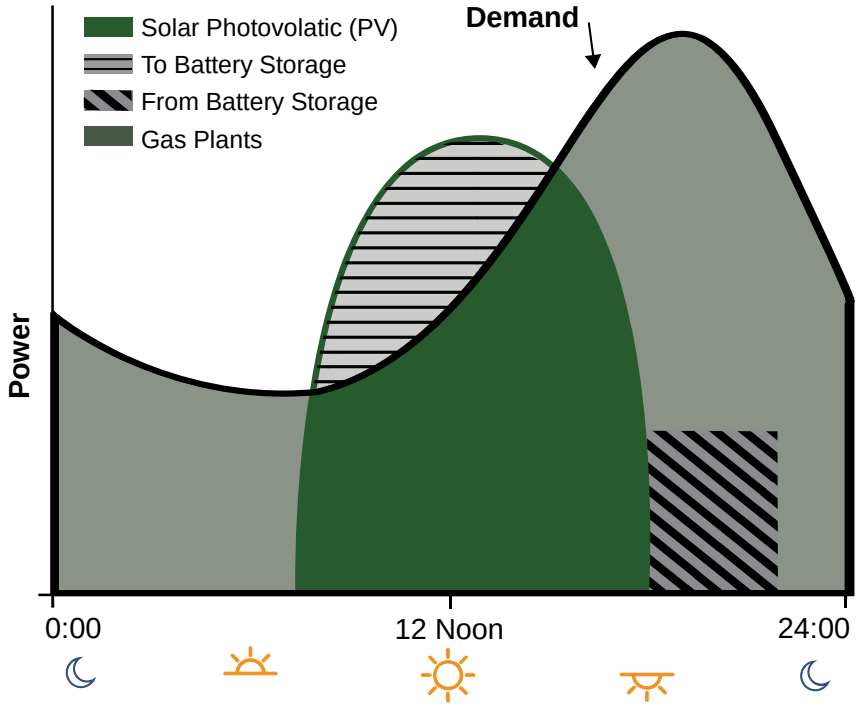
Dispatchable Generation Delivers Firm Output On Demand

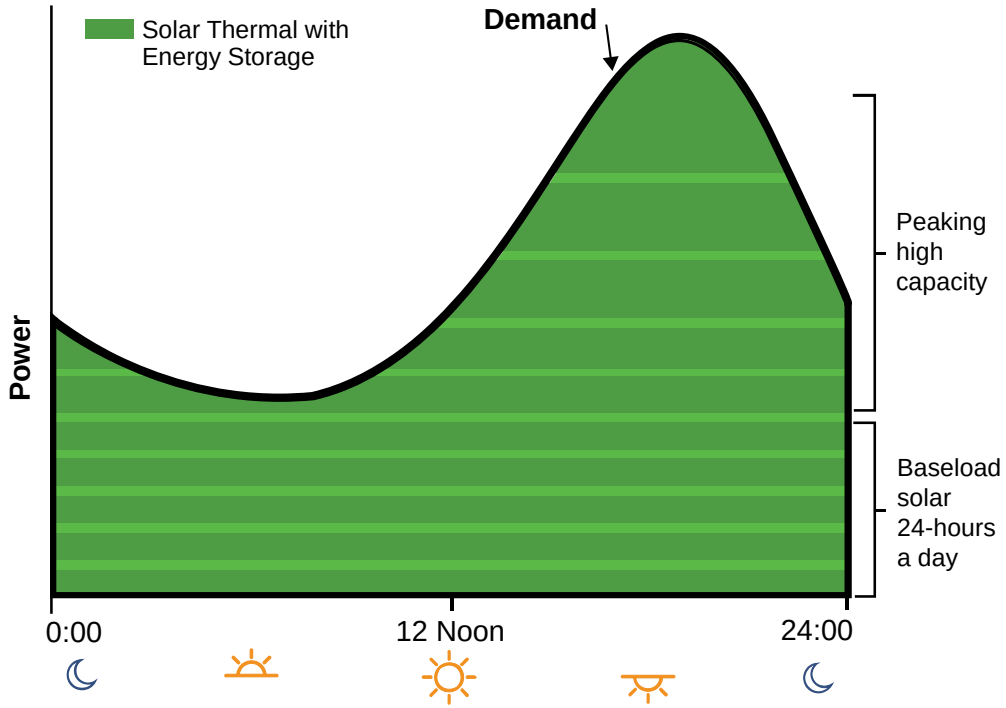


Integrated energy storage provides the ability to shift electricity generation to meet different profile needs and deliver firm reliable power at high capacity value

ThermaVault Technology Reduces the Need for Batteries

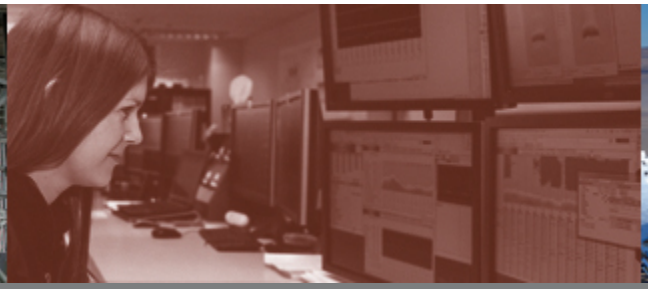
Solar thermal with energy storage reduces the need for expensive batteries or gas peaker plants





Solar PV is only able to serve daytime load, often over-generation during the middle of the day. Even if excess generation is captured by batteries, costs will limit the ability to serve 24-hour demands

SolarReserve's ThermaVault technology can address the entire range of grid demands, with solar that delivers 24-hour baseload power as well as meets peak load – providing clean peak and baseload resources for utilities


CRESCENT DUNES SOLAR ENERGY FACILITY – TONOPAH, NEVADA

SolarReserve's ThermaVault technology at its Crescent Dunes facility is the next generation of solar energy generation and storage, incorporating decades of molten salt tower experience

Crescent Dunes: Project Highlights

10,347 Heliostats

640 Foot (195 Meter) Tower

Power Block

1.75 Mile (2800 Meter) Diameter

- **Electricity Production:** 110 MW of generating capacity and 10 hours of storage capacity generating more than 500,000 MW-hours annually
- **Energy Storage:** Market leading energy storage provides 10 hours of full load electricity generation (1100 MW-hours of storage)
- **Generation Profile:** Will generate power for 16 hours during summer months, powering 75,000 Las Vegas customers late into the night
- **Equity Investment:** $260 million of private equity from SolarReserve (managing partner), ACS Cobra and Banco Santander
- **Debt Financing:** Debt supported by U.S. Department of Energy Loan Guarantee Program
- **Power Purchaser:** 25-year power contract with NV Energy, Nevada's largest utility, for 100% of output at a fixed price with 1% annual escalation, regardless of world fuel prices

Located in Tonopah, Nevada, Crescent Dunes is the world's largest operating CSP with integrated molten salt storage project

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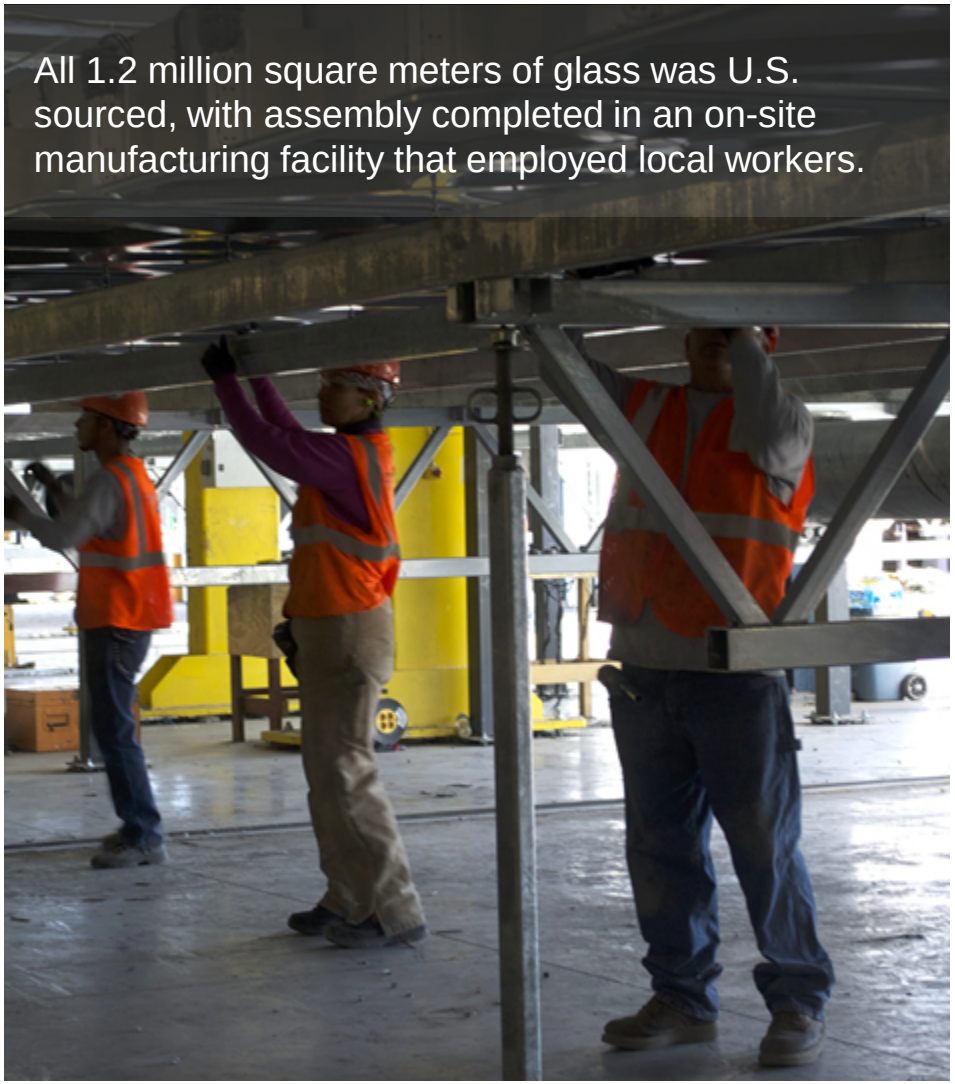
Local Economic Benefits in all Project Locations

Crescent Dunes provides model for future projects

- **Job Creation**:
  - 1,050 construction workers on site at peak period
  - 4,300 direct, indirect and induced jobs created by the project during construction
  - 26 U.S. states provided equipment and services
  - 60% of project subcontractors Nevada based
- **Tax Revenues**: Project forecasted to generate more than $73 million in local and state tax revenues over first 20 years of operation
- **Operating Expenses**: During the 30+ year operating life, the project will expend more than $10 million per year in salaries and operating costs, much of this spent in the region
- **Capital Investment**: Project will generate in excess of $750 million private capital cost investment in Nevada

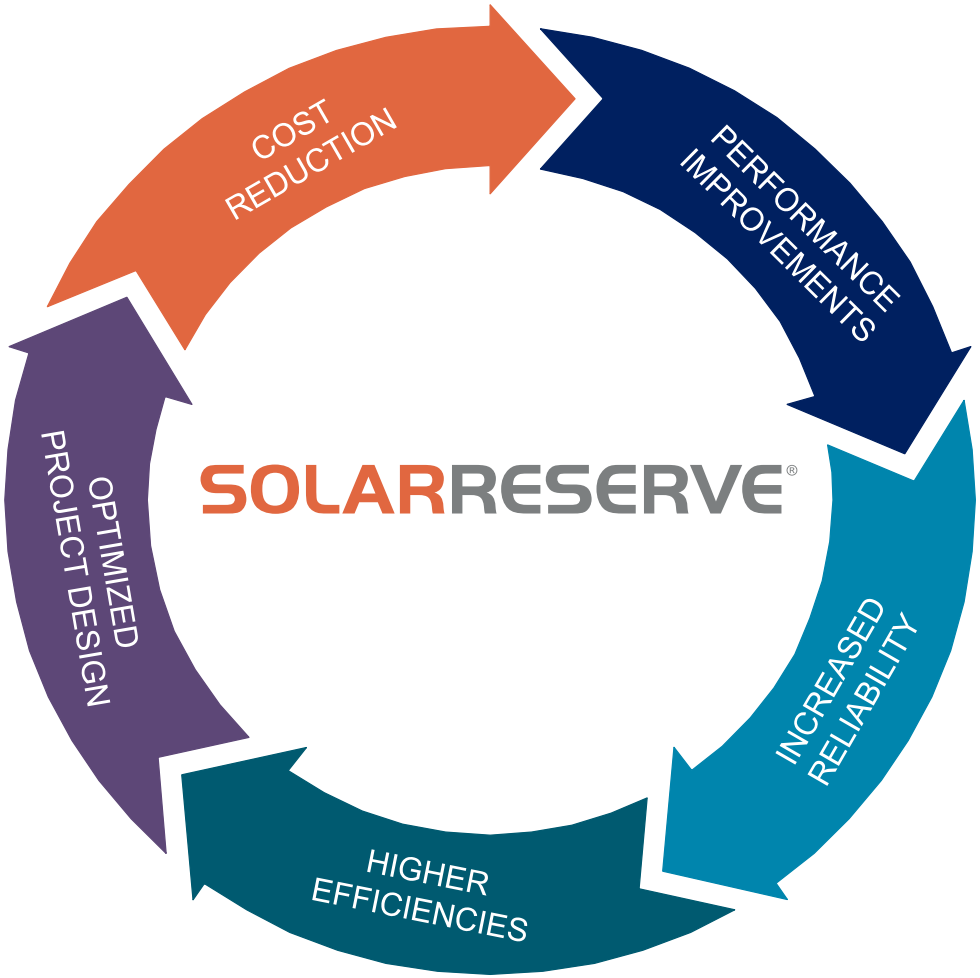


SolarReserve's CSP projects provide local economic benefits including a high level of content & service localization

Technology Innovations and Project Optimizations

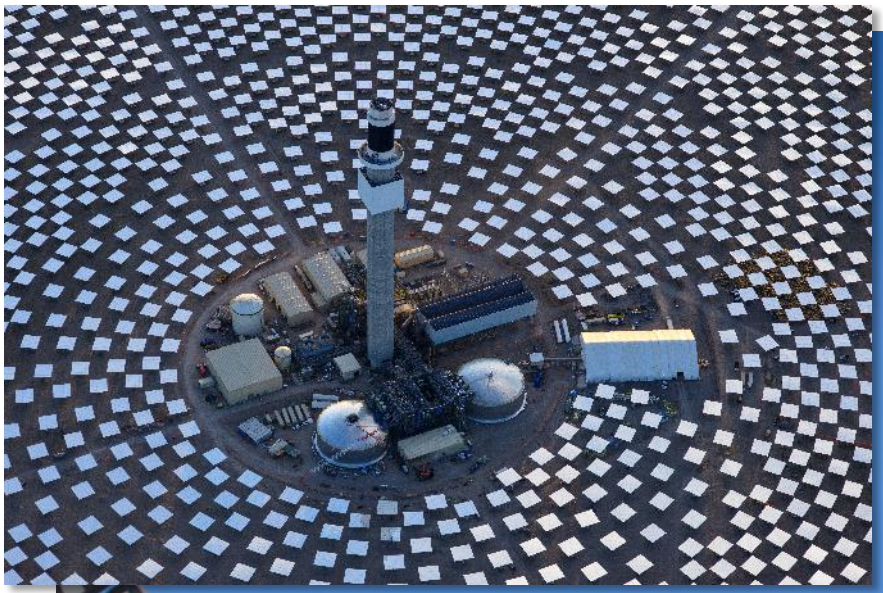
Leveraging lessons learned at Crescent Dunes, along with continued R&D

- Next generation molten salt receiver
  - Higher thermal capacity (765 MWth)
  - Alternate tube materials and increased coating efficiency
  - Elimination of BCS targets and lower cost heat shields
  - New methods of directly measuring solar flux on receiver
- Molten salt system optimizations
  - Higher HTF upper temperature (600 °C)
  - Improved molten salt circuit design
  - Alternative wide temperature range, lower corrosivity salt combinations
- Collector field advancements
  - Optimized collector field size
  - Wireless and self-powered heliostat options
  - Patented closed loop feedback control
- Power generation system advancements
  - Higher steam inlet temperature and pressure
  - Compact, once-through steam generation



The Crescent Dunes facility has provided the SolarReserve team with unmatched real-world know-how that has led to innovations toward higher efficiency and performance, while simultaneously reducing capital cost

Crescent Dunes – Receiver



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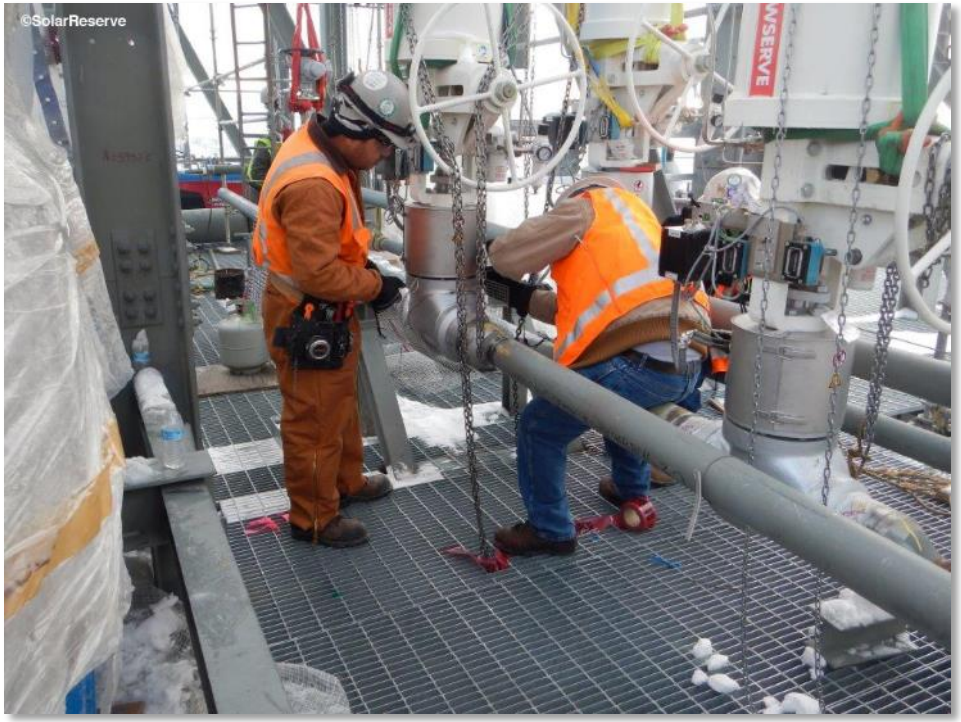
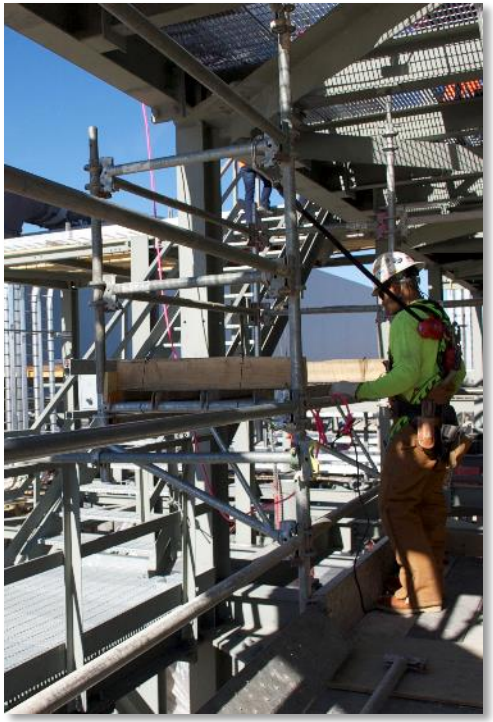
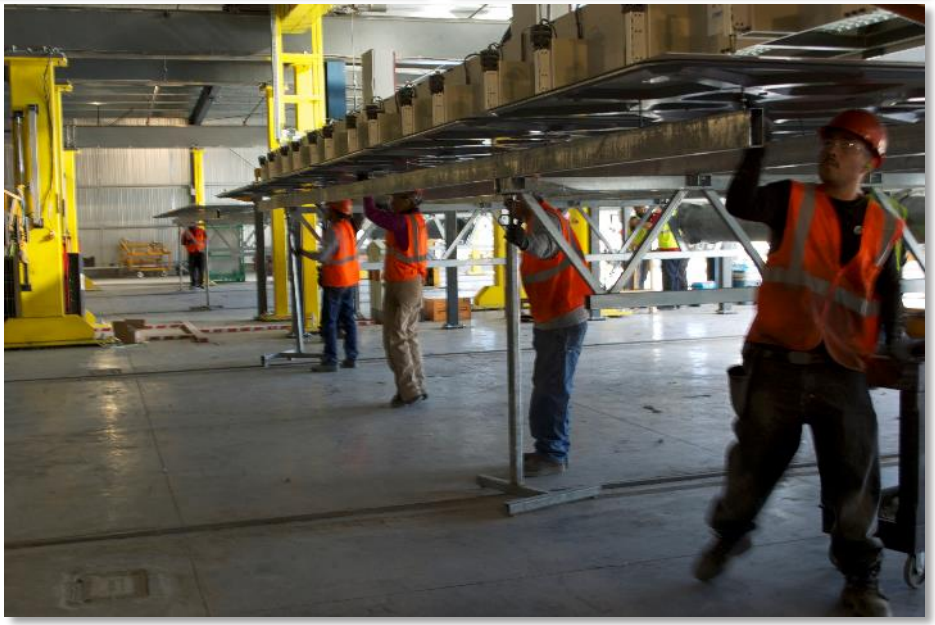
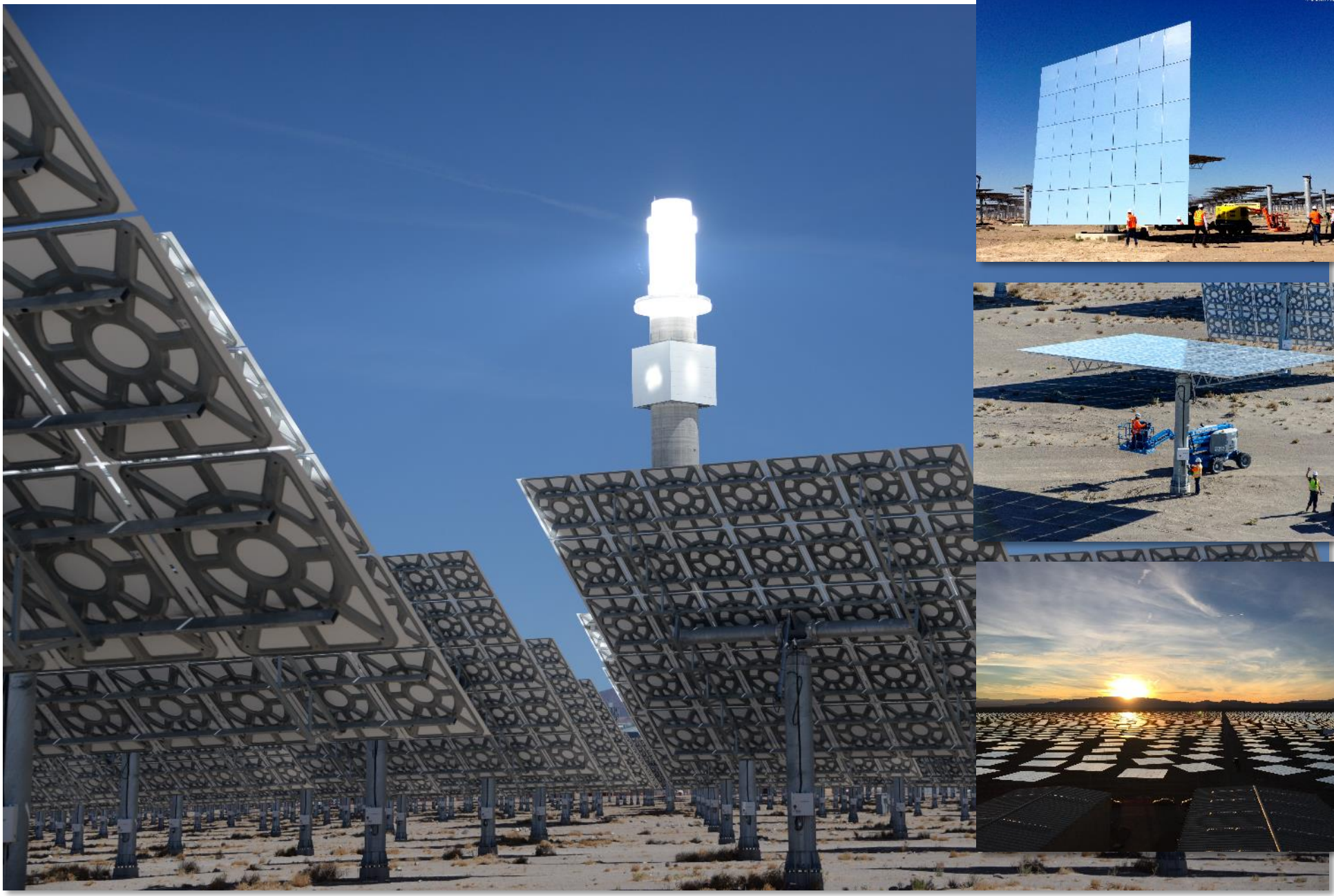
Crescent Dunes – Under Construction







Crescent Dunes – Heliostat Field



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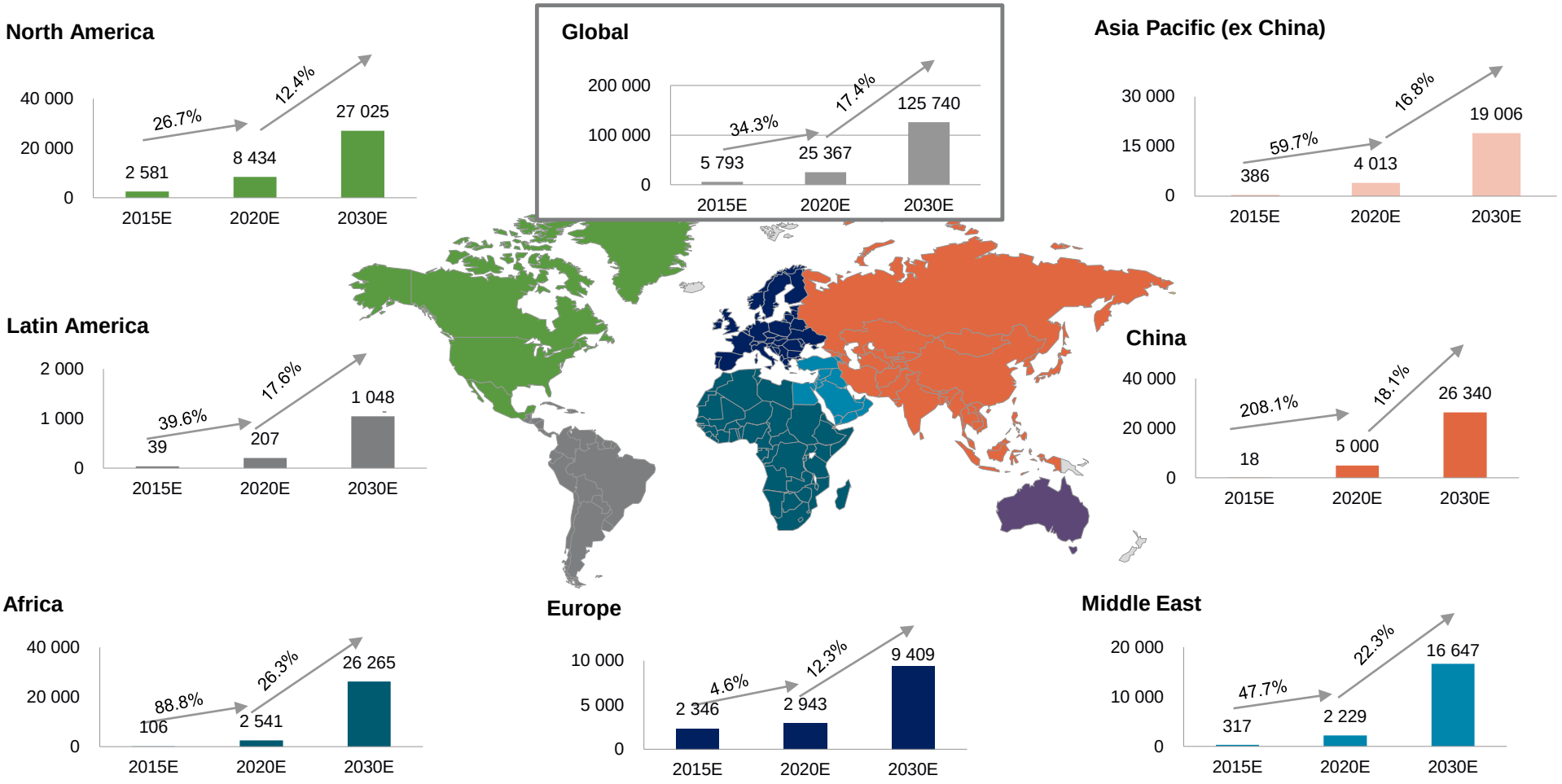
A strong track record of success
across rapidly growing global markets

Global Solar Market Trends for CSP

Installed Capacity by Region (MW)

- CSP is expected to record the highest growth amongst renewable technologies globally
- Forecasted increase of 20,000 MW by the end of 2020 and increase of 120,000 MW by the end of 2030



Sources: SolarPACES, Greenpeace, ESTELA Solar Thermal Electricity Global Outlook 2016; NEA

SolarReserve's Operating and Contracted Projects in South Africa

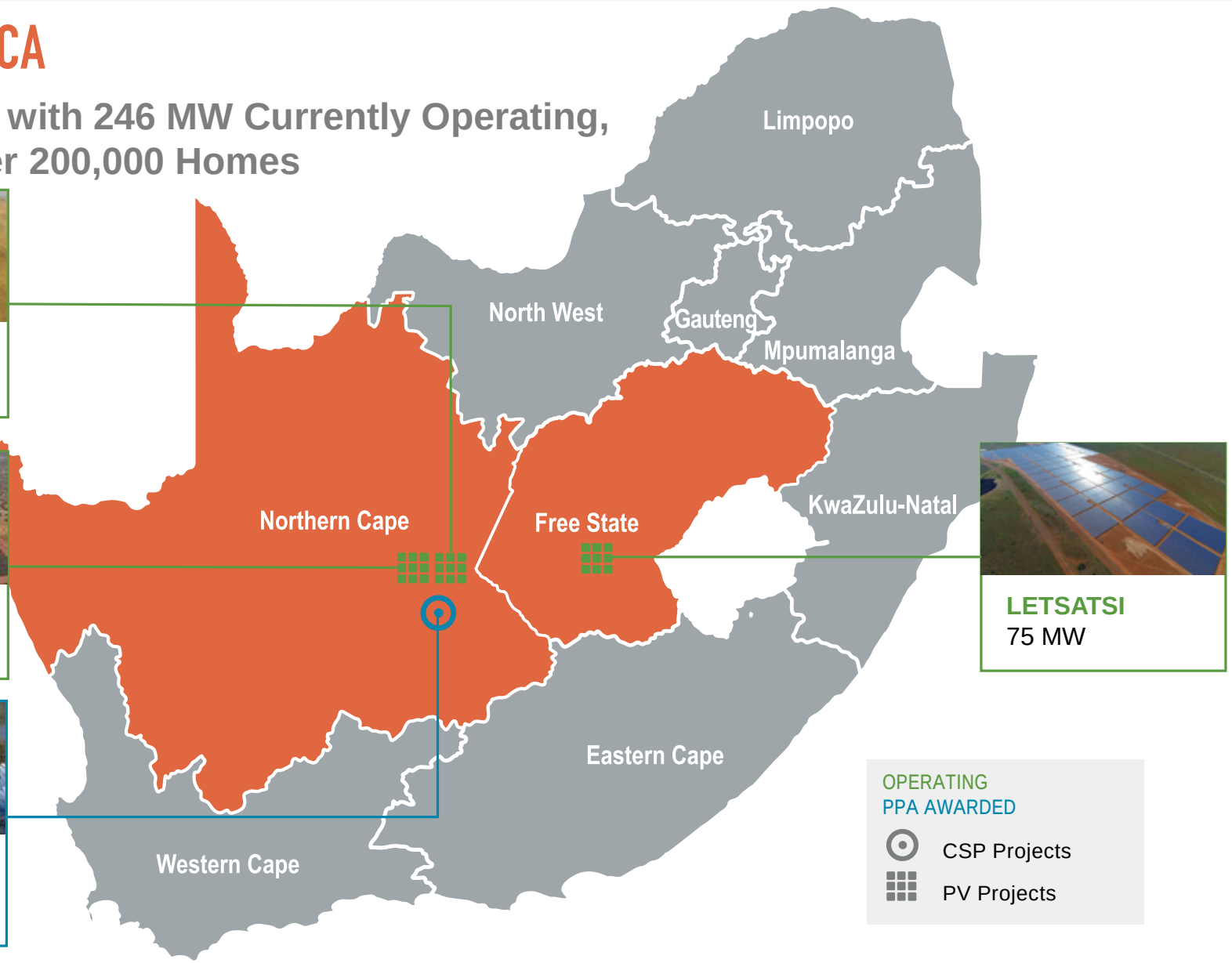
SOUTH AFRICA

346 MW Total with 246 MW Currently Operating, Powering over 200,000 Homes

LESEDI
75 MW

JASPER
96 MW

REDSTONE
100 MW +
1,200 MWh



LETSATSI
75 MW

Powering over 200,000 Homes

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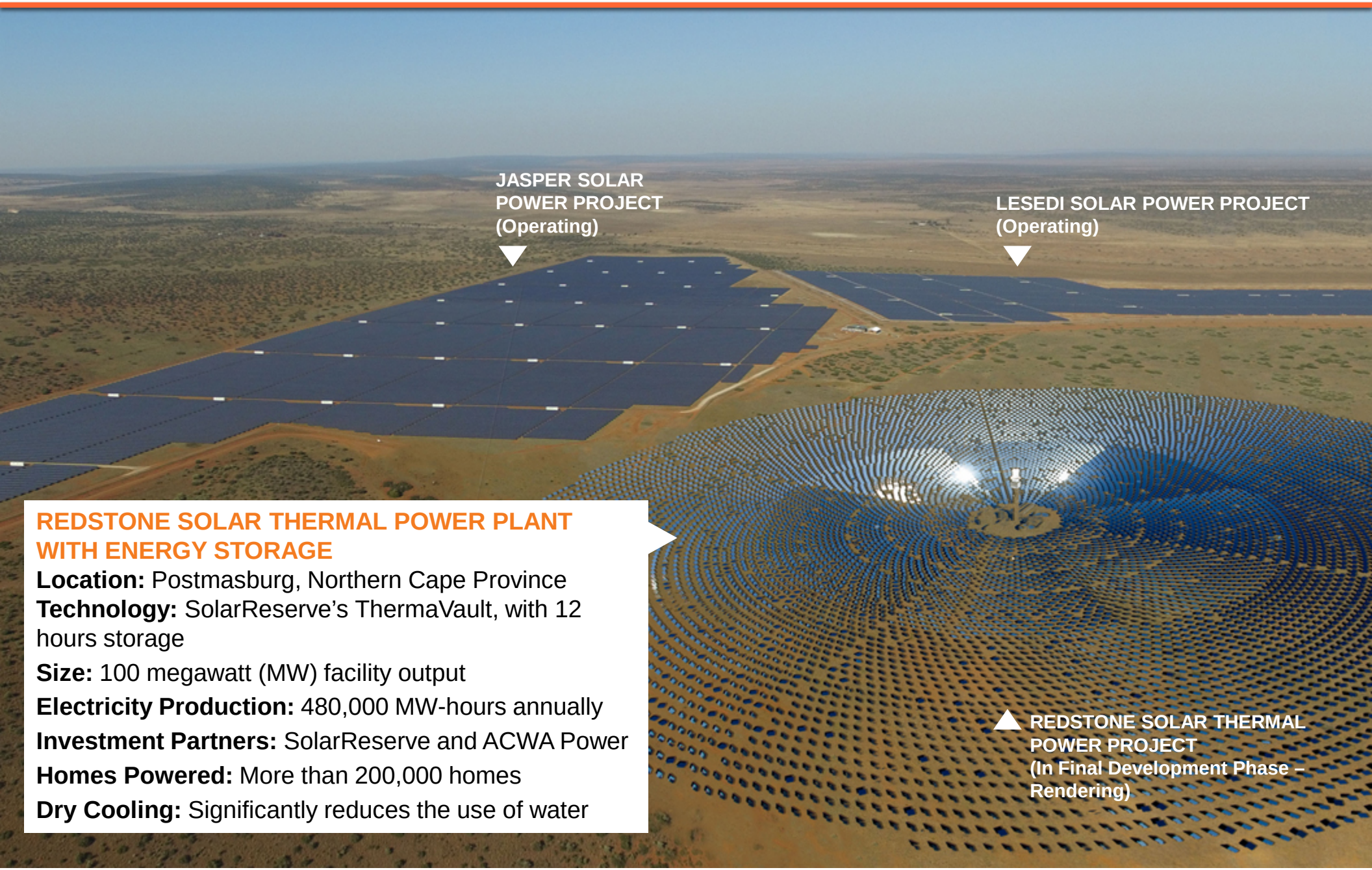
Letsatsi Solar PV Power Project – Operating since 2014

Lesedi Solar PV Power Project – Operating since 2014

Jasper Solar PV Power Project – Operating since 2014

Redstone Solar Thermal Power Plant with Energy Storage

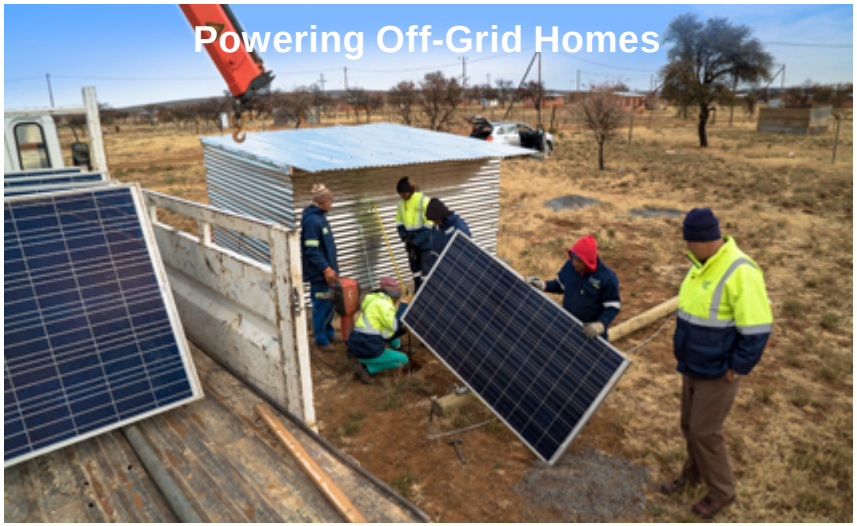


REDSTONE SOLAR THERMAL POWER PLANT WITH ENERGY STORAGE

Location: Postmasburg, Northern Cape Province
Technology: SolarReserve's ThermaVault, with 12 hours storage
Size: 100 megawatt (MW) facility output
Electricity Production: 480,000 MW-hours annually
Investment Partners: SolarReserve and ACWA Power
Homes Powered: More than 200,000 homes
Dry Cooling: Significantly reduces the use of water

Bringing Long Lasting Economic Benefits to Africa

A percentage of project revenue is set aside for enterprise and socio-economic development



Development of Local Communities

SolarReserve Summary

- Commercialized industry's most advanced CSP technology with integrated energy storage
- Success based on decades of research, technology development, field deployment, and lessons learned in real-world operation
- Crescent Dunes largest and only proven commercial scale CSP tower with integrated molten salt energy storage
- Increasing efficiency and performance, while reducing capital costs through lessons learned on Crescent Dunes and R&D activities
- Deep pipeline of over 13 GW positions SolarReserve to dominate the global solar thermal market, underpinned by China's CSP opportunity
- Experienced and committed management team with worldwide development and technology resume

SOLARRESERVE®

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