

Reliably Powering South Africa with Clean Solar Energy – Day and Night.

SolarReserve's game-changing technology captures and stores the sun's power to reliably provide electricity whenever it's needed most. Powering more than 200,000 South African homes during peak demand periods, even after dark. With zero emissions.



(Picture of SolarReserve's US project shown is representative of the future Redstone project)

Redstone Solar Thermal Power Plant

Postmasburg, Northern Cape, South Africa
Scheduled to Start Construction in 2015

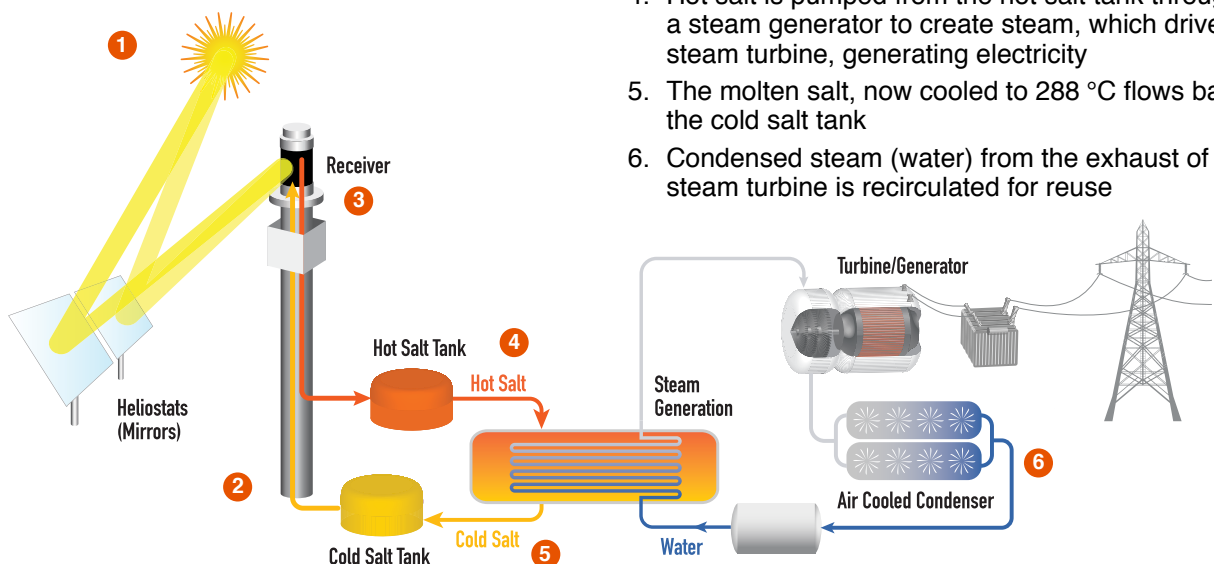
SOLARRESERVE



The Future of Renewable Energy is Here, Today.

How It Works

1. Sunlight is concentrated and directed from a large field of heliostats (mirrors that track the sun) to a receiver on a tall tower
2. Liquid salt from the cold salt tank is pumped in piping up the tower and through the receiver where it is heated to 566 °C
3. The heated salt from the receiver travels back down the tower through piping and is stored in the hot salt tank
4. Hot salt is pumped from the hot salt tank through a steam generator to create steam, which drives a steam turbine, generating electricity
5. The molten salt, now cooled to 288 °C flows back to the cold salt tank
6. Condensed steam (water) from the exhaust of the steam turbine is recirculated for reuse





Redstone Solar Thermal Power Plant

Powering South Africa Energy Independence and Economic Development

Project Overview

- **Location:** Postmasburg, Northern Cape
- **Investment Partners:** SolarReserve and International Company for Water and Power Projects (ACWA Power)
- **Technology:** SolarReserve's proprietary CSP tower technology with Molten Salt Thermal Energy Storage
- **Size:** 100 megawatt (MW) facility output
- **Storage:** 12 hours of full load energy storage, providing the ability to generate electricity on-demand as required, day and night
- **Electricity Production:** 480,000 MW-hours annually—twice the generation of an equivalent sized photovoltaic (PV) project
- **Homes Powered:** more than 200,000 homes
- **Dry Cooling:** Significantly reduces the use of water

Local Economic Benefits

- **Financing:** R2.4 billion of equity investment and R5.6 billion of debt provided by local and international lending institutions including DFIs
- **Tax Revenues:** Project forecasted to contribute more than R6 billion in income tax to the fiscus over the first 20 years of operation
- **Operating Expenses:** During the more than 30-year operating life, the project will expend over R150 million per year in salaries and other operating costs, including land, insurance, and maintenance activities, much of this spent in the region
- **Job Creation:** More than 4,000 jobs during the construction phase including craft workers on site as well as jobs related to equipment supply, manufacturing, engineering, transportation and other services; during operations there will be 60-70 full-time, permanent jobs
- **Localisation:** A significant proportion of procurement and labour will be derived from South Africa, growing from the experience and supply chains developed through construction of the two PV projects at the same location
- **Preferential Procurement:** Over 40% of the total project value will be provided by South African suppliers – a portion of which will support BBBEE activities
- **Enterprise and Socio-Economic Development:** Above 1% of revenue

World's First Combined CSP and PV Solar Park

The Redstone Solar Thermal Power Project will be located near Postmasburg, Kimberley in the Northern Cape Province adjacent to the 75 MW Lesedi and 96 MW Jasper photovoltaic (PV) solar power projects. Together, the three projects will deliver 271 megawatts of peak generation, enough to power more than 350,000 South African homes. The Redstone project brings additional value to South Africa with the introduction of SolarReserve's world-leading molten salt energy storage technology — delivering the lowest priced electricity from Concentrating Solar Power in the country to date.

LESEDI SOLAR POWER PROJECT

Operations Date: May 2014

REIPPPP: Round 1

Size: 75 MW

Technology: Photovoltaic (PV)

Electricity Production: 150,000 MW-hours annually

Homes Powered: more than 65,000 homes

JASPER SOLAR POWER PROJECT

Operations Date: October 2014

REIPPPP: Round 2

Size: 96 MW

Technology: Photovoltaic (PV)

Electricity Production: 180,000 MW-hours annually

Homes Powered: more than 80,000 homes

REDSTONE SOLAR THERMAL POWER PROJECT

Anticipated Operations Date: 2018 (project rendering above)

REIPPPP: Round 3 (CSP)

Size: 100 MW

Technology: Concentrating Solar Power (CSP) with molten salt energy storage

Electricity Production: 480,000 MW-hours annually

Homes Powered: more than 200,000 homes during peak demand, day and night

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