TOTAL

SUNPOWER®

Competitive solar solutions for South Africa

SUNPOWER™OASIS™ C1 POWER PLANT

Present in South Africa since 1954, Total is now the country's fifth-ranked oil and gas operator, with sales of 3.1 million tons of products each year, a network of 528 service stations and a 36.6% interest in the Natref refinery alongside Sasol. Total is also the country's third-leading LPG marketer.

Since September 2013 in Cape Town, Total's Exploration & Production has a 50% interest in Block 11B/12B.

CALIFORNIA VALLEY SOLAR RANCH (CVSR), UNITED STATES

SOLAR ENERGY – **AN ABUNDANT, CLEAN AND RENEWABLE SOURCE OF ENERGY** BECOMING MORE EFFICIENT EVERY DAY.

TODAY AT TOTAL, TOGETHER WITH OUR AFFILIATE SUNPOWER, WE ARE ACTIVELY PREPARING FOR THE FUTURE, BY STEPPING UP OUR ONGOING INVESTMENT IN SOLAR POWER; A CRITICAL COMPONENT IN THE WORLD'S SUSTAINABLE ENERGY SUPPLY.

TOTAL
COMMITTED TO BETTER ENERGY

Total is one of the largest integrated oil and gas companies in the world, with activities in more than 130 countries. The Group is also a first rank player in chemicals. Its 100,000 employees put their expertise to work in every part of the industry – exploration and production of oil and natural gas, refining and marketing, new energies, trading, and chemicals. Total is working to help satisfy the global demand for energy, both today and tomorrow.
Total is striving to diversify its supply to help meet growing energy demand in the long term. The Group is the majority shareholder of SunPower, a world leader in solar energy. Additionally, Total is actively engaged in a number of renewable research and development projects, such as solar and biomass.

COMMITTED TO SATISFY GLOBAL ENERGY DEMAND FOR TODAY AND TOMORROW

For nearly 30 years, specialists at Total have helped drive progress across the photovoltaic solar energy chain, fostering the emergence of a reliable, efficient and cost-effective technology.
By becoming the majority shareholder of SunPower, in 2011, one of the world's leading solar players, Total has given new impetus to its development. Today, along with its affiliate SunPower, Total is ready to go one step further, accompanying its host countries in the diversification of their energy mix by developing new collaborations around solar projects.

SINCE
1954
IN SOUTH AFRICA

HERBERT SOLAR FARM, SOUTH AFRICA

A world leading solar player

SUNPOWER®

AT THE CENTRE OF TOTAL'S SOLAR ENERGY ACTIVITIES

- SunPower Corporation (NASDAQ: SPWR) is a U.S. company with Total as a majority shareholder
- Headquartered in the Silicon Valley since 1985
- 25 years of R&D and more than 200 patents worldwide
- More than 7,000 employees
- $2.6 Billion Non-GAAP revenue for 2014
- A global footprint with a presence on 5 continents
- 6 GW deployed worldwide

SUNPOWER® OASIS™ C1 POWER PLANT

A SUPERIOR SOLAR TECHNOLOGY

- World-record panel efficiency[1]: 21.5%
- Up to 24.2% cell efficiency (X-Series)
- Highest reliability[2]
- Guaranteed independently verified performance
- Outperforms in high temperatures
- Suitable to withstand desert environments
- 25-year combined product and power warranty

AN INTEGRATED AND PROVEN KNOW-HOW

- Project development
- Project financing
- Design and engineering
- Installation
- Operation, long-term maintenance and monitoring

A DIVERSIFIED & COMPLETE OFFERING

- **On-grid applications:** utility-scale power plants, rooftop solutions for commercial and residential customers
- **Off-grid applications:** for oil & gas, telecom, mining operations and for local communities

UP TO

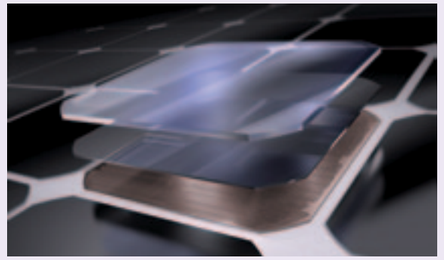
24.2%

CELL EFFICIENCY

[1] High efficiency solar panel: Large-area silicon record, Green, M.A., et al. "Solar Cell Efficiency Tables (Version 43)," Progress in Photovoltaics, 2014.

[2] #1 rank in "PV Module Durability Initiative Public Report," Fraunhofer ISE, Feb 2013. Five out of the top 8 largest manufacturers were tested. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, Feb 2013. See www.sunpowercorp.com/facts for details.

SUNPOWER TECHNOLOGY
ENGINEERED FOR PERFORMANCE, DESIGNED FOR RELIABILITY



THE SUNPOWER® MAXEON™ SOLAR CELL

FUNDAMENTALLY DIFFERENT SOLAR

- Patented all-back-contact cell technology
- Solid copper foundation
- Record-breaking panel efficiency
- Exceptional performance
- Unrivaled durability[1]

SUPERIOR TECHNOLOGY FOR HIGHER ENERGY OUTPUT

All SunPower systems are built around Maxeon all-back-contact solar cells: their unique design captures and converts more sunlight into electricity than conventional cells, while a solid copper foundation makes them incredibly durable, ensuring reliable long-term performance.

Providing up to 24.2% efficiency, Maxeon cells produce more power over the same area when compared to competing solar technologies.

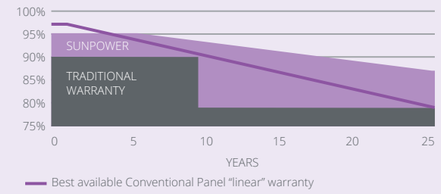
These cells consistently outperform in a broad range of real-world conditions, including high temperatures, and harsh desert climates.

25-YEAR COMBINED PRODUCT AND POWER WARRANTY

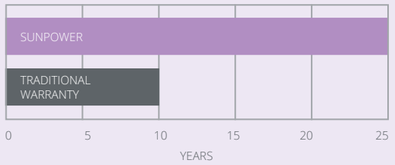
First-of-its-kind warranty ensures more energy than the industry standards, effectively securing peace of mind and a low risk return on investment over the first 25 years of the system.

POWER GUARANTEE

POWER WARRANTY



PRODUCT WARRANTY



38%[2]

MORE POWER DELIVERED THROUGH SUNPOWER SOLAR PANELS

[1] #1 rank in "PV Module Durability Initiative Public Report," Fraunhofer ISE, Feb 2013. Five out of the top 8 largest manufacturers were tested. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, Feb 2013. See www.sunpowercorp.com/facts for details.

[2] SunPower 345W Solar Panel vs. Conventional Panel (250W, 15.3% efficient, approx. 1.6m²).

Best suited technology for the region

SUNPOWER IN SOUTH AFRICA

Since 1996, SunPower has had a presence in South Africa thanks to its acquisition of Tenesol. SunPower South Africa has an exceptional track record of projects within the country having completed two power plants totaling 33 MW in the Northern Cape, as part of the government's Renewable Energy Independent Power Producers Procurement (REIPPP) program. Construction on a third project will commence in 2015, an 86 MW project awarded in the third round of the REIPPP initiative.
The company is rated Broad-Based Black Economic Empowerment (BBBEE)[1] level 5, with 20 % black ownership.

SOCIO ECONOMIC DEVELOPMENT PROGRAMME

- The South African business environment across all industries has a strong focus on good Socio Economic Development (SED)[2] commitments and fair BBBEE scoring. This is due, in part to the country's political background as well as the socio economic imbalance within the country.
- SunPower Energy Systems Southern Africa (Pty) Ltd (SESSA) has initiated a SED programme, which will drive projects and activities to improve and maintain a positive BBBEE status.
- SunPower's SED programme aims to provide support to already existing socio economic projects benefiting surrounding communities of our manufacturing plant and projects, such as Cape Town in the Western Cape, Douglas and Prieska in the Northern Cape. SunPower aims to create long-term relationships with beneficiaries to cultivate recurring partnerships on SED projects.
- As part of the SED programme SunPower is encouraging staff participation through volunteering and active involvement in these projects.

PHOTOVOLTAIC MODULE FACTORY

- SunPower has recently relocated its offices and solar module assembly line from Wetton to a larger facility, in the vicinity of Cape Town International Airport. The move has been driven by the change of product technology (standard efficiency to high efficiency PV module), the need for new manufacturing equipment, and an increased production capacity.
- The new facility will be running at full capacity in 2015, operating two lines with an annual production capacity of 160 MW. This new facility provides strong impetus for local job creation.
- The new solar module assembly facility is a cornerstone of SunPower's lasting presence in the South African solar industry, and will continue to ensure that its activities in the country provide a force for innovation, among other economic benefits for the region and the country as a whole.

18

YEARS OF
SOLAR ACTIVITY
IN THE COUNTRY

[1] Broad-Based Black Economic Empowerment (BBBEE) is a form of economic empowerment that was implemented by the South African government to advance economic growth in the country while enhancing the economic participation of black people in the South African economy. It aims to broaden the economic base of the country; thereby stimulating economic growth and creating employment.

[2] SED refers to initiatives and contributions made that promote the sustainable access to the formal economy by black people. Whilst similar in nature to "Corporate Social Investment", SED largely focussed on the fostering of an environment where economic activity is made possible and more sustained.

GREEFSPAN SOLAR FARM, SOUTH AFRICA

Solar power plants in South Africa

PRIESKA, SOUTH AFRICA

SOLAR PROJECT 80% FINANCED THROUGH NON-RECOURSE PROJECT DEBT FROM SOUTH AFRICAN BANKS

- 86 MW dc (75 MW ac) system size
- A 210 GWh project co-developed with Total
- Construction start: Q2 2015
- Expected to be operational by Q3 2016
- Technology used: SunPower® Oasis™ C1 Power Plant
- SunPower to provide EPC[1] services and long-term O&M[2]
- Approximately 75,000 powered homes
- Site owners and developers: Total / Mulilo consortium

HERBERT & GREEFSPAN, SOUTH AFRICA

SUNPOWER'S FIRST SOLAR POWER PLANT PROJECTS IN SOUTH AFRICA

- Herbert 22 MW dc (20 MW ac)
- Greefspan 11MW dc (10 MW ac)
- Fully operational since April 2014
- 400 full time equivalent local jobs created over one year
- SunPower provided full EPC services and manages longterm O&M
- Site owners and developers: AE-AMD Renewable Energy

GREEFSPAN SOLAR FARM, SOUTH AFRICA

FINANCING PV PROJECTS

Total has a strong expertise in project financing and project management, along with local partners, to ensure a quick development of solar projects. SunPower and Total have a long track record of developing partnerships with investors and banks worldwide.

86 MW
POWER PLANT

[1] Engineering, Procurement and Construction.
[2] Operation and Maintenance.

PRIESKA PV PROJECT, SOUTH AFRICA

HERBERT SOLAR FARM, SOUTH AFRICA

Unrivalled solar projects wolrdwide

CALIFORNIA VALLEY SOLAR RANCH, USA

ONE OF THE LARGEST OPERATING SOLAR PV PLANTS IN THE WORLD

- 314 MW dc (250 MW ac) system size
- Fully operational since October 2013
- Technology used: SunPower® Oasis™ C1 Power Plant
- Powering 100,000 homes
- 700 local jobs created during construction
- $315 Million injected into local economy during construction and operations
- About 70% of the site will be permanently conserved and managed to meet conservation objectives for a range of species
- Developed and built by SunPower EPC (Engineering, Procurement, Construction)

1GW+

OPERATIONAL POWER PLANTS FEATURING SUNPOWER® OASIS™ C1

CALIFORNIA VALLEY SOLAR RANCH, USA

MONTALTO DI CASTRO, ITALY

A 360-DEGREE EXCELLENCE PROJECT

- 84 MW dc (72 MW ac) system size
- Fully operational since December 2010
- Technology used: SunPower® Oasis™ C1 Power Plant
- Powering 40,000 homes
- 250 local jobs created during construction
- 70,000 tons of carbon dioxide emissions saved per year
- The largest power plant in Europe at completion date in 2010
- The first publicly rated solar project bond
- Energy independence for the entire community

SOLAR STAR PROJECTS, USA

THE WORLD'S LARGEST SOLAR DEVELOPMENT UNDER CONSTRUCTION TO DATE

- 747 MW dc (579 MW ac) system size
- Sold in December 2012 to Warren Buffett's Berkshire Hathaway Energy
- Expected to be operational by 2016
- Technology used: SunPower® Oasis™ C1 Power Plant
- Will power approximately 255,000 homes
- Avoiding more than 570,000 tons of carbon dioxide emissions per year-the equivalent of removing nearly 2 million cars from the road over 20 years.
- SunPower will also provide long-term Operations & Maintenance services (O&M)

PV SALVADOR, CHILE

ONE OF THE WORLD'S LARGEST SOLAR MERCHANT DEAL

- 70 MW dc (68 MW ac) system size
- A 200 GWh project co-developed with Total in the Atacama region of Chile
- Fully operational since January 2015
- Technology used: SunPower® Oasis™ C1 Power Plant
- Powering 70,000 Chilean homes
- Developed and built by SunPower EPC (Engineering, Procurement, Construction)
- SunPower also provides long-term Operations & Maintenance services (O&M)
- Electricity sold on the spot market

WORLD'S LARGEST POWER PLANT UNDER CONSTRUCTION TO DATE

Power plant solutions for a lower LCOE

SUNPOWER® OASIS™ C1 POWER PLANT

THE BEST SOLAR PANELS AND TRACKING TECHNOLOGY COMBINED WITH A SIMPLIFIED, MODULAR APPROACH

Oasis is a complete power block solution that includes SunPower high efficiency modules mounted on proprietary single-axis trackers, DC collection and a pre-engineered AC inverter station that includes a medium voltage transformer.

The largest power plants in the world in operation or under construction today are based on this proven technology.

A complete turnkey system for all regions to deliver the most energy per hectare compared to conventional and thin-film technologies, optimising land use and energy production.

MAXIMISED PRODUCTION

High-efficiency technology delivers more MWh per hectare than a system based around conventional panels[1] mounted on a fixed tilt system.

HIGHER CAPACITY FACTOR

Industry-leading tracking technology delivers capacity factors up to 25% higher than conventional systems.

FASTER COMMISSIONING

Pre-manufactured tracker and electrical systems ensure the plant is quickly permitted, constructed, and connected to the grid.

LOWER O&M COSTS

Superior technology and integrated design reduces operations and maintenance costs.

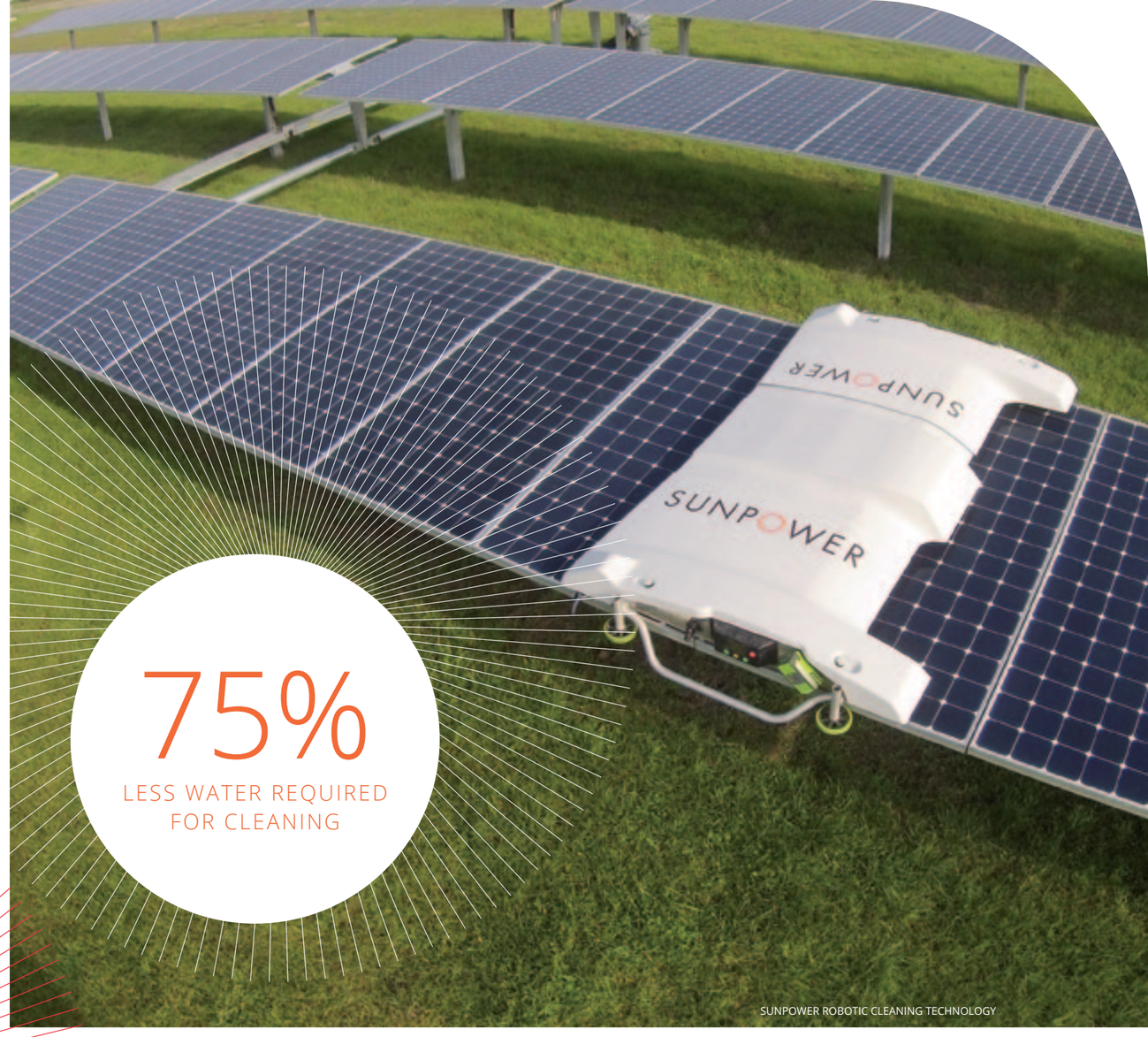
Innovative robotic solar panel cleaning solution to lowering long-term investment risk and further optimising overall LCOE[2].

PROVEN PERFORMANCE

Reliable technology with an unparalleled track record minimises risk and ensures project bankability.

25%

HIGHER CAPACITY THAN CONVENTIONAL SYSTEMS



75%

LESS WATER REQUIRED FOR CLEANING

SUNPOWER ROBOTIC CLEANING TECHNOLOGY

THE WORLD'S MOST EFFICIENT PANEL-CLEANING ROBOTS

SunPower has recently expanded its energy services portfolio within its Oasis Power Plant Solution, thanks to a cost-effective cleaning process. This robotic cleaning system delivers a thorough cleaning of solar panels, especially in markets with challenging dirt and dust environments.

The robotic system cleans millions of solar panels at SunPower's Oasis™ solar projects across the world each year, including in some of the world's harshest desert conditions.

With an integrated panel cleaning system, our goal is to make Oasis™ a more bankable option for customers than ever before.

FAST

5 MW dc cleaned in one ten-hour shift with a two-person, four robot team vs. 0.5 MW dc for the same size team, in the same time frame using manual cleaning methods.

EFFICIENT

Only 0.25L of water used per panel vs. >1L of water per panel using traditional manual cleaning methods, resulting in 75% less water.

EFFECTIVE

Cleans at night to avoid disruption vs. cleaning during daytime energy-producing hours

[1] High efficiency solar panel: Large-area silicon record, Green, M. A., et. al. "Solar Cell Efficiency Tables (version 43)," Progress in Photovoltaics, 2014.
[2] Levelized Cost of Electricity.

Rooftop solutions for maximised returns

ROOFTOP SYSTEM POWERING RESIDENCE IN CLIFTON, CAPE TOWN.

HIGH EFFICIENCY SOLAR PANELS FOR ANY ROOF TYPE WITH A QUALITY BUILT TO LAST

As recently verified by multiple independent organisations, SunPower crystalline silicon photovoltaic solar panels produce the most energy of all solar panels on the market: they deliver 38% more power than conventional panels[1]. Thus, customers can make the most of their roof or land space to produce significantly more energy.

SunPower's robust design and industry leading research on accelerated ageing shows SunPower panels will last well beyond their warranty period – at least 40 years.

HOUSE GAIA, ROOFTOP INSTALLATION, CAPE TOWN

40 YEARS +[2]

OPERATIONAL PANEL LIFE

[1] SunPower 345W Solar Panel vs. Conventional Panel (250W, 15.3% efficient, approx. 1.6 m²)

[2] "SunPower Module 40-Year Useful Life", SunPower white paper. Feb 2013. Useful life is 99 out of 100 panels operating at more than 70% of rated power.

Solar rooftop systems in South Africa

70 KW ON GLENELLY WINE ESTATE'S ROOFTOP

Glenelly partnered with SunPower to design, supply and install a solar photovoltaic electric generating system for the rooftop of the wine cellar.

- Project Location: Stellenbosch, South Africa
- System Size: 70 kW
- Covered Area: 2.450 m²
- Number of Panels: 299
- Completed in July 2013

BENEFITS

- Offset the peak demand electricity rates and flatten the electricity load profile
- Reduce dependence on expensive grid electricity
- Hedge against future electricity price rises

ROOFTOP SYSTEM POWERING RESIDENCE IN CLIFTON, CAPE TOWN.

20 KW SUNPOWER SYSTEM POWERING RESIDENCE IN CLIFTON, CAPE TOWN

- Project Location: Cape Town, South Africa
- Product: SunPower E19 / 320 Solar Panels
- System Size: 20 kW
- Rooftop Area: 97.8 m²
- Number of Panels: 60
- Project Completion Date: September 2013
- Installers: MLT Drives

BENEFITS

- Reduce reliance on expensive grid electricity
- Offset peak demand electricity rates and flatten the electricity load profile
- Reduce carbon emissions
- Minimise power losses during power outages

REDUCE DEPENDENCE ON EXPENSIVE GRID ELECTRICITY

GLENELLY WINE ESTATE, SOUTH AFRICA

Solar solutions for remote areas

DECENTRALIZED RURAL ELECTRIFICATION: BRINGING ELECTRICITY TO ISOLATED COMMUNITIES.

KUKHANA Energy Services (KES) was created in 2002 by Total (35%), along with EDF (50%) and Calulo (15%) to implement a decentralized rural electrification program based on solar energy in South Africa. Around 26,000 households, had been supplied with individual photovoltaic solar home systems. KES is continuing its growth and plans to install another 10,000 individual solar systems over the next four years. LPG bottles from Totalgaz are distributed to complete KES's offer and address cooking needs.

880,000
LAMPS
ALREADY SOLD
IN THE WORLD

TO ENCOURAGE THE USE OF PHOTOVOLTAIC SOLAR ENERGY, TOTAL LAUNCHED ITS ACCESS TO ENERGY PROGRAM IN 2010.

- Awango by Total is a range of solar products for lighting and charging low-voltage electrical devices, mainly cell phones. The solar lamps are priced affordably for low-income populations. For the target customers, who often live in off-grid areas, the products make a big difference in their lives, enabling them to carry on with their activities after nightfall.
- In addition, the solar lamps are more economical and less polluting than the kerosene lamps usually used in rural areas. They pay for themselves within a few months and cut annual carbon emissions per lamp by nearly 80 tons.
- 880,000 lamps have already been sold in the world.

AWANGO by TOTAL

SOLAR BENEFITS:

- Provide a brighter and safer lighting source compared to candles and kerosene lanterns.
- Ready and reliable charging solutions for mobile phones.
- Affordable, portable, versatile and easy to use.
- They have a two-year warranty and customer service is available at all Total Service Stations in South Africa.

SOLAR ENERGY R&D FOCUSES ON OPTIMISING CELL & MODULE PRODUCTION, KEY LINKS IN THE PHOTOVOLTAIC CHAIN

TOTAL AND SUNPOWER: A TECHNOLOGICAL LEADERSHIP

JOINT R&D LEVERAGES TOTAL AND SUNPOWER SYNERGIES

- Develop even more efficient and reliable cells and modules
- Accelerate and de-risk cost-reduction roadmap
- Optimise engagement with upstream suppliers
- Grow downstream technology (systems, products, and services)

SOLAR R&D CENTRE INSTITUT PHOTOVOLTAÏQUE D'ILE-DE-FRANCE (IPVF)

Total is partner of the project IPVF to develop next-generation photovoltaic technology.

The project:

- Encourages the emergence of a top-tier solar industry through advanced R&D.
- Emphasizes teaching and training high-level specialists.

Based in Saclay, France, Total is partner alongside French National Center for Scientific Research (CNRS), Ecole Polytechnique and EDF, associated with Air Liquide, Horiba Jobin Yvon and Riber.
In 2016, the Institute expects to have nearly 200 researchers.

PREDISOL R&D PROGRAM IN THE UAE

To better assess the solar resource in the Middle East, Total has launched the Predisol R&D Program. The key objective of Predisol is to improve the solar irradiation models, via satellite imagery analysis and radiative transfer modelling. Through Predisol, solar irradiance databases suitable for solar power production simulation will be provided.

BUILDING WORDLWIDE COLLABORATION

Total's New Energies R&D works in an open innovation mode and recently signed a number of partnership agreements with globally recognized research centers, including:

- LPICM (in Saclay, France): a joint team working on integrating thin films into crystalline silicon cells and improving panel reliability.
- IMEC: (Interuniversity MicroElectronics Center - Louvain, Belgium) to decrease the amount of silicon needed for cells and improve their efficiency.
- KAUST INDUSTRY COLLABORATION PROGRAM (KICP): an active partnership in a program built to demonstrate, test, qualify, and certify technologies to newly established standards applicable in Saudi Arabia.

MIT (MASSACHUSETTS INSTITUTE OF TECHNOLOGY): CUTTING COSTS ON STORAGE

Solar energy is intermittent. To allow the broadest possible use, efficient solutions are needed to store this energy and ensure it is available when needed.

A five-year contract signed with the Massachusetts Institute of Technology (MIT) in 2009, renewed for 18 months in September 2014, will help our researchers develop a highly efficient, low-cost, longlife battery.

In late 2010, encouraged by the project's very promising results, the partners decided to create a start-up, LMB Corp. (Liquid Metal Battery Corporation), which then became "AMBRI", to develop these grid-scale energy storage systems.

CORPORATE SOCIAL RESPONSIBILITY IN SOUTH AFRICA

TOTAL SOUTH AFRICA'S CORPORATE SOCIAL INVESTMENTS SPEND IS DIVIDED BETWEEN FOCUSED FLAGSHIP PROJECTS AND COMMUNITY BASED PROJECTS IN FOUR KEY AREAS: EDUCATION, ENVIRONMENTAL CONSERVATION, HERITAGE AND SOCIAL DEVELOPMENT.

Within the South African context, corporate social investment has a pivotal role to play in bringing about meaningful transformation to the benefit of all. The social needs facing our country are substantial and it is a moral duty for big business to make a difference by supporting projects that benefit historically disadvantaged sectors of our society.

With corporate social investment becoming ever more strategically focused, it also makes sense for businesses to align their corporate social investment spend with their core business objectives and imperatives.

Such an approach moves CSI out of the charitable sphere into one in which true partnerships with beneficiaries, government and NGOs bring about long-term sustainable development to the benefit of all.

It is against this background, and guided by the key social development needs highlighted by government, that Total South Africa has selected its CSI projects.

TOTAL SOUTH AFRICA ACTIVELY SUPPORTS CSI INITIATIVES THAT:

- Help conserve our environment
- Showcase our heritage
- Encourage education (maths, science and technology programmes)
- Support social development (disability, HIV/Aids, women empowerment and soccer development tournaments)

We also support our employees, through our Employee Volunteer Programme, who are involved in community volunteer work and encourage all employees to experience the personal rewards of giving their time and talents.

CORPORATE SOCIAL INVESTMENT FOCUS AREAS:

- SA National Parks
- National Arbor Week
- Birdlife South Africa
- Rose Foundation
- Female Entrepreneur of the Year Awards
- Sibikwa Arts Centre
- Boitjhorisong Resource Centre
- Ikhaya Lobomi Health Care Centre
- Learner Focus Week
- Epilepsy South Africa
- United Nations Children's Fund
- Kids in Kruger

Heritage

SOCIAL DEVELOPMENT

Environmental conservation

EDUCATION

SUNPOWER: the chosen technology for cutting-edge solar projects such as Solar Impulse and PlanetSolar

This brochure is edited by Total New Energies/ TOTAL MARKETING SERVICES / Share capital: 324 158 696 EUR / Registered office: 24 cours Michelet - 92800 Puteaux - France 542 034 921 RCS Nanterre

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