



Industrial Profile

Total Energy Solutions

Company Profile

Complete Energy Solutions

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Introduction

GreenSparks (Pvt) Ltd was founded in 2012 and is rapidly becoming the go-to company for alternative energy solutions and energy management. We provide total energy solutions to all sectors – industrial, commercial, agricultural and domestic power consumers.

We typically commence with logging and monitoring the customers power usage for a period of a week to one month. Thereafter, a complete energy audit is conducted to identify energy losses and energy-saving opportunities – a comprehensive report with proposals on suitable solutions completes the investigation phase.

As soon as the client is ready, we design and implement the recommended solutions – our systems consist of high quality products selected to fulfil individual customers' needs and are designed with reliability and ease-of-use as the primary focus. They range from simple inverter and battery backup systems to both grid-tied and grid-independent solar powerhouses. Design and installation of all systems is done in consultation with the client by experienced, highly qualified professional electrical engineers.

We pride ourselves in our customer support and backup service, which is provided as part of the solution.



The GreenSparks Approach

Understanding our clients' needs

We endeavour to attain an intimate understanding of our client's business and thereby ensure that we design for you the best possible energy solution.

Competency and Skills

Engineering and Design-

Liesel is a registered professional engineer (ECSA) with a BSc. In Electrical and Computer Engineering – who possess extensive experience in power utility companies.

Neil holds an MSc. In Electrical Engineering, with first degree in Mecatronics. He possesses extensive experience in energy management, inverter design and solar/inverter system implementation, both regionally and overseas.

Together with their collective, power supply knowledge base we are able to design and deliver superior systems that meet the stringest of requirements.

Project Management- on large projects we employ the latest systems of critical path management, planning and control to ensure that the project stays on track and the client is kept fully appraised.

Responsibility

We take responsibility for each system from initial concept, through design, to final implementation. Our aim is always to provide a total solution via a complete working system that meets the customer's expectations. We do not consider our work complete until this has been achieved. We forge confidential ongoing relationships with our clients through providing valued advice and backup support.

Practical Solutions

Our systems are designed to work in real life, in Africa. We consider all aspects of the system, including, but not limited to, usability, accurate sizing, security and aesthetics.



Knowledge Transfer

All systems are delivered with basic care guidelines in order that the customer can take true ownership of the system and ensure its correct operation and longevity. Schematic diagrams are provided, to aid in the customer's understanding of the system and to facilitate changes or extensions in the future. We also provide formal training in the use and maintenance of the system where this is required.

Code of Ethics

We are committed to delivering reliable, value-for-money solutions to energy problems and excellent service based on honest and ethical behaviour. We are committed to environmentally friendly practices.

Our Aim

To become the energy solution provider of choice locally and regionally, providing solutions that are sustainable and beneficial to the environment.



GreenSparks Services

Our services include:

- Energy system design and implementation for solar photo-voltaic, solar thermal, inverter and power storage systems
- Energy system analysis and improvements
- Complete and accurate energy audits for industrial consumers
- General consulting services in the renewable energy field
- Sourcing and importing of high-quality components for energy systems – our partners include MLT Drives, RenSola, SolaireDirect Technologies and ExSolar in South Africa and Victron Energy in the Netherlands
- Repair and servicing of inverters and high frequency electronics.

The GreenSparks Technical Team

Neil Bradshaw – Founder director

Msc. Eng UCT

Research and development engineer and project lead engineer on inverter design, working with MLT Drives, Cape Town, RSA and Princeton Power Systems, New Jersey, USA.

Project experience up to 500kVA in inverter design and commissioning. Project leader of the Demand Response Inverter (DRI) design and development performed by MLT for Princeton Power Systems, USA - now in production and used for disaster management efforts in the USA and in US military applications.

Neil is hands-on and likes to work outdoors – he is usually found getting his hands dirty on most installations.

Liesel Ahrens – Director

Pr Eng MSAIEE

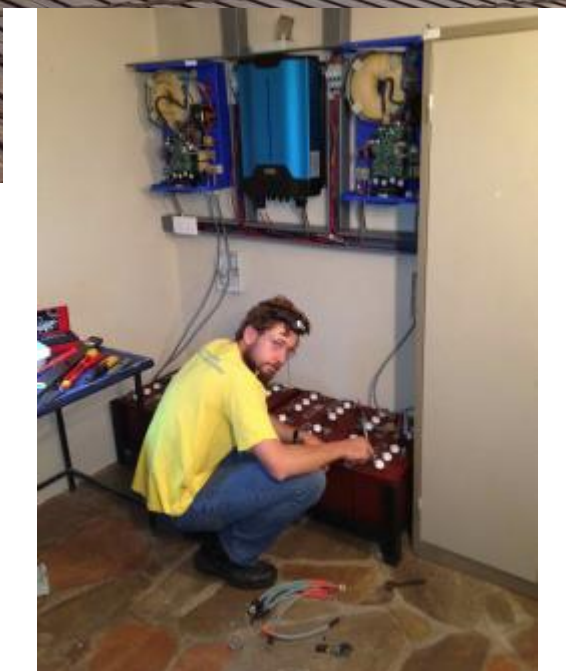
Power station - hydro and gas turbine - expert, specialising in control and instrumentation engineering. Several years experience with Eskom, South Africa. Trained by Siemens in Germany on gas turbine automation systems and instrumental in the design of the SCADA and control system for Ingula Pump Storage Power Station, South Africa. Experience in remote control of power stations and grid code compliance, including design and implementation of interfaces for information exchange between power stations and the National Control Centre.



GreenSparks Clients

We have a varied client base and work undertaken includes:

1. Embassy of Switzerland, Harare - renewable energy consulting, system upgrades, inverter repairs and programming (2013)
2. Embassy of Switzerland Diplomatic Housing, Harare – complete inverter power backup systems (2014)
3. Averstrad Investments, Harare - grid-tied solar system consisting of 4kW of solar panels, a 4kW grid-tied solar inverter and a 2x4kW battery inverters (2012)



Picture 1: Roof mounted solar panels. Note the proprietary aluminium mounting system. This keeps the panels raised from the roof allowing cooling from behind and also allows leaves and debris to wash through.

Picture 2: Inverter room at Averstrad Investments, 2x4kW Oasis inverters with grid-tie 4kW solar inverter



4. Scully Technical Services, Harare – PV system with 4kVA inverter charger building 1 (2012)
5. Scully Technical Services, Harare – PV system with 4kVA inverter charger building 2 (2014)
6. St Johns College, Harare – IT Classroom inverter/charger backup system with auto generator start (2014)
7. Frampol ISP, Harare – communication mast solar system 12V DC solar power supply (2014)
8. Colcom Foods, Harare – maximum demand metering analysis (2013)
9. Colcom Foods, Harare – specialist lightning and surge protection for IT Server Room (2013)
10. Colcom Foods, Harare – Mbare shop, power logging and energy audit (2014)
11. Surrey Abattoir, Marondera – energy audit for abattoir, followed by solar thermal installation for livestock (2013)
12. Surrey Abattoir, Marondera – solar geysers on all executive houses (2013)
13. CAFCA, Harare – metering analysis, power factor analysis, power factor correction and repair (2014)
14. Padenga (Pvt) Ltd. (Innscor Group) – on and off-grid solar investigation and simulation (2014)
15. Mashonaland Tobacco, Harare – Backup power for computer rooms (2014)
16. Kurima Gold, Aspindale, Harare - Backup power for computer rooms (2014)
17. Southern Granites, Chitungwiza – Energy Audit & Power Factor Report (2014)



18. MLT Drives Solar-Electric Systems, Cape Town – engineering research and development for the 70kW Afrisun Inverter (2013)



Picture 3: Solar control software for the 70kW grid-tie solar inverter developed by Neil of GreenSparks



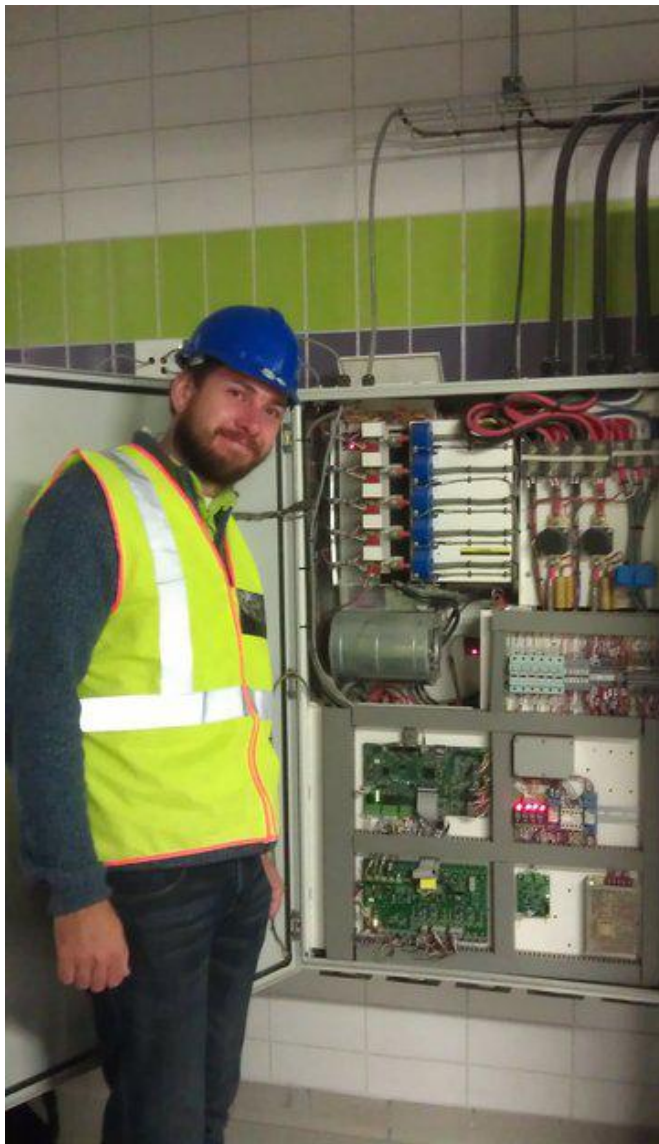
Picture 4: Neil working on solar system SCADA software



Picture 5: Neil inspecting 4kVA inverters prior to shipping to GreenSparks, Harare



Pictures 6: Neil working on 500kW grid-tie solar inverter

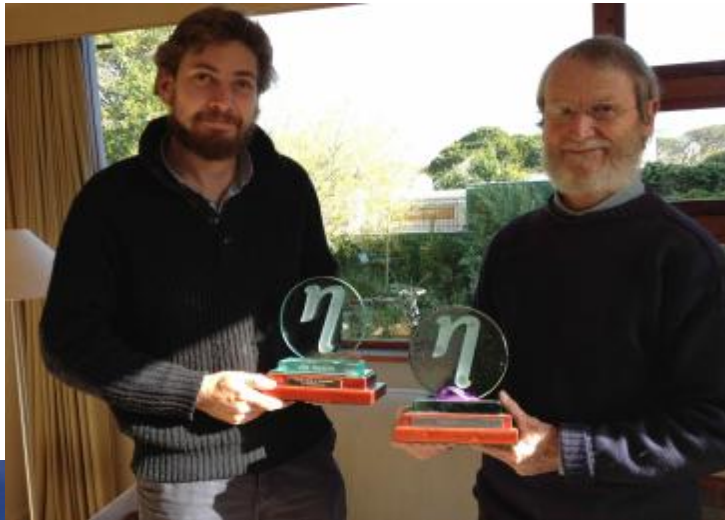


Pictures 7a/7b/7c: Hotel Verde, Cape Town, 70kW Grid-tie solar inverter



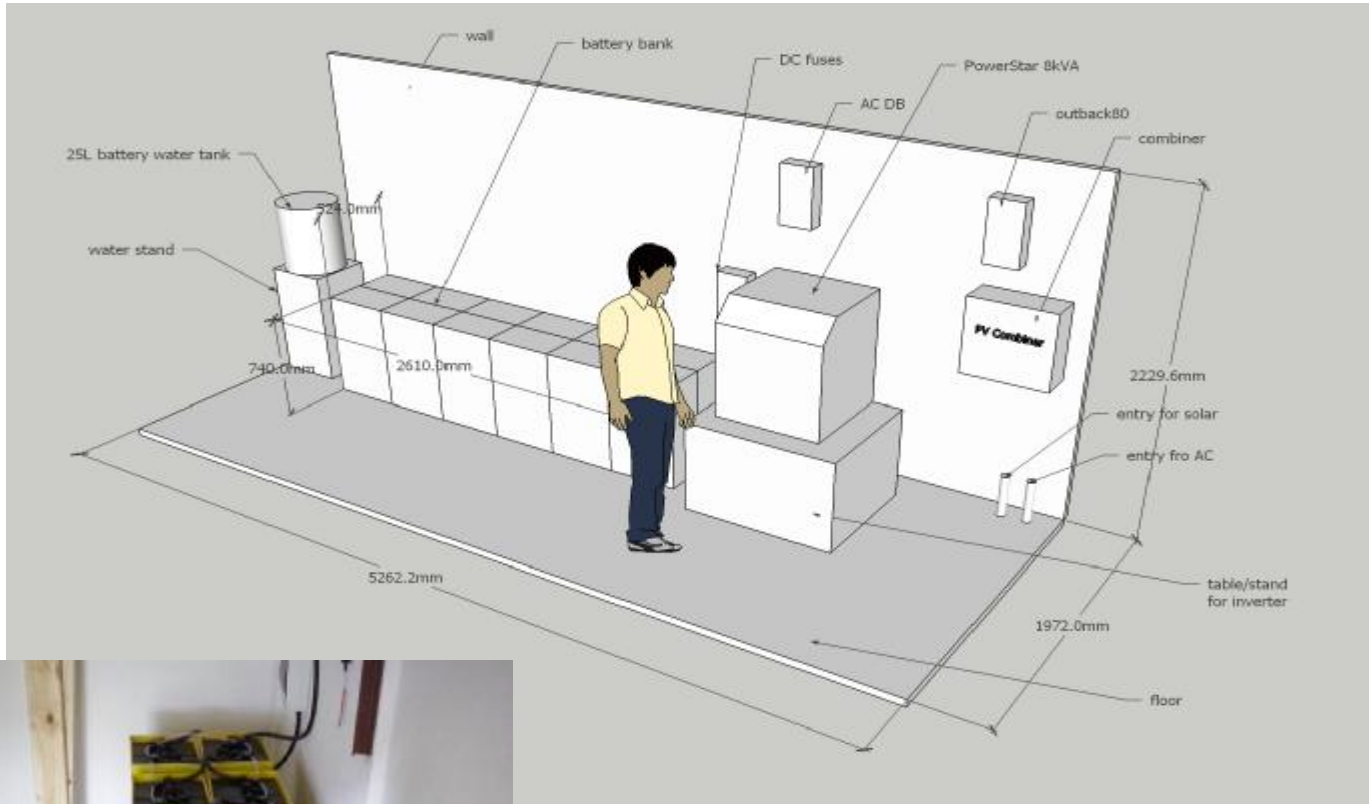
Domestics systems – large and small

Picture 10: Proud home owner showing Neil the Awards,, Cape Town





Picture 9: Award winning home solar system, Cape Town



Picture 11: inverter room concept layout before construction



Picture 13: 1188Ah 48V FNB battery bank installed with an automatic battery filling system from Germany

Picture :12 Inverter room after construction during electrical installation





Picture 14: Neil on completion of Villiera winery, South Africa 140kW grid-tied solar project



Picture 17: 2 x 70kW solar inverters

Picture 15: Aerial view showing the three roofs covered with solar panels



Picture 16: Touch screen controls on the Afrisun 70kW



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