Dawson Power Company Profile

INTRODUCTION

Dawson Power (Pty) Ltd was established during 2023 in order to provide specialist electrical engineering expertise in the fields of power system protection, measurements, substation automation and electrical network modelling. The company is owned and managed by Brendan Dawson as an extension to his company RTG Solutions which was established in 2001 in order to develop a new vehicle for the provision of specialist solutions in the Power Systems and Renewable Energies sectors.

Dawson Power occupies offices in Pretoria East. Dawson Power aims to provide a highly professional service in the key areas of HV and EHV systems and substations design including protection systems, control and automation systems, tele-protection and auxiliary communication systems and metering as well as power system modeling and trouble-shooting. In recent years RTG and then Dawson Power has been involved in the design and integration of grid-connected and off-grid renewable energy systems. Dawson Power has also carried out numerous investigations in the areas of industrial and commercial load management, energy efficiency, power quality, power factor correction and load shedding.

Dawson Power Employees include specialists in the fields of Renewable Energy Systems, Power System Protection, Substation Automation, SCADA System

Engineering, Power System Modelling, and Substation Primary Design. The owner has been employed by IPPs and Eskom RSA in the fields of substation designs and studies relating to battery energy storage, control, protection, overhead lines, and earth electrodes.

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Directors:
B P Dawson (RSA) (Managing)

Dawson Power services offered include:

- Design, specification and integration of grid connection substations for IPPs and renewable energy systems (both wind power and photo-voltaic, with and without battery energy storage).
- Design and specifying of protection and auxiliary systems for MV, HV and EHV networks, including line and grid var compensation systems (e.g. static var compensators);
- Specialised system studies, including grid impact studies and grid code compliance studies for embedded and renewable energy generation systems for end-users, utilities and IPPs, including applications and approvals to governing bodies such as NERSA (South Africa).
- Electromagnetic transient studies for grid compliance of wind turbine generators (WTGs).
- EHV system studies for Ferranti effects, transposition of EHV lines, electromagnetic level determination, radio and audio interference determination.
- Design of high-voltage and medium-voltage switching stations and substations up to and including 400kV.
- Design, specification and integration of grid connection substations for IPPs and renewable energy systems (both wind power and photo-voltaic, with and without battery energy storage).
- Design and specifying of modern substation automation systems;
- Electrical network modeling for Loadflow studes, Fault Studies, Planning Studies, Protection Studies, Power System stability studies, with competency in software packages including Digsilent, ERACS, ETAP, ATP (transient studies), PSS/E and PSS Cape;
- Electrical network planning, including strategic application of particular equipment such as Protective Devices, Power Factor Correction, Automatic Reclosing and System under-frequency load-shedding and islanding;

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- Electrical system earthing and lightning protection designs to IEC 62305, making use of software packages such as CDEGS;
- Protection equipment detailed configuration and setting, including electrical network unit protection, redundant protection schemes and secondary protection such as harmonic, thermal and time-graded protection;
- Power Quality investigations to NRS-048 and IEC 61000;
- Network Trouble-shooting;
- Energy Efficiency Monitoring and Control Systems;
- Demand-side Management and Load Management Auditing;
- Design and specifying of transmission/distribution systems;
- SCADA System design and engineering;
- Communication systems for utilities, including protection, SCADA, telephony and auxiliary functions.

Dawson Power provides highly acclaimed training courses which have been accredited by ECSA in the following fields:

- Power System Studies;
- Power System Protection;
- Substation Design;
- Substation Automation Systems;
- SCADA Systems;
- Switchgear Design, Specification, Testing, Maintenance and fault-finding;
- Power Transformer Design, Specification, Testing, Maintenance and fault-finding;

- Renewable Energy Systems Technology, Design and Costing;
- Load Management systems;

Dawson Power Contact Details:

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Dawson Power Manager's CV

Name of Firm:	Dawson Power (Pty) Ltd
Name of Staff:	Brendan Peter Dawson
Profession:	Professional Electrical Engineer
Date of Birth	19 July 1968
Years with Firm:	Since Inception
Nationality:	South African
Member:	South African Institute of Electrical Engineers

Key Qualifications:

Mr. Dawson is an electrical engineering specialist, having obtained a first degree in electrical engineering at the University of Natal in 1994.

Prior to the university education, Mr. Dawson completed an electrical apprenticeship as well as studies towards a diplomate electrical engineer.

Mr. Dawson's core experience in the electrical engineering field of high voltage power systems includes network protection, control, communications (protection, control and automation), renewable energy grid integration, revenue metering as well as network modeling for load flow, stability, fault levels and system protection grading. Mr. Dawson is experienced in electrical networks ranging from MV through to 400kV operating levels.

Mr. Dawson has been called upon by Eskom Transmission to develop state of the art travelling wave fault locator systems, as well as new training manuals for key line protection and fault location IEDs.

Mr. Dawson's involvement in all projects has been of a highly technical nature, with detail level ranging from specifying through to detailed design and even specialised equipment configuration.

Mr. Dawson has worked on location on assignments in South Africa, Australia, Namibia, Botswana, Zimbabwe, Mozambique, Zambia, United Kingdom, Kingdom of Saudi Arabia, United Arab Emirates, DRC, Sweden, Sudan, Uganda, Nigeria, Madagascar, The Syechelles, St Helena and Mauritius.

Mr. Dawson's key customers from a consulting perspective are:

ABB (RSA, Nam, Sweden), Africon, Anglo Platinum, Anglo Coal, Assmang Ferro-Chrome, ASA Metals, Botswana Power Corporation (BPC), City Power Johannesburg, Centlec Bloemfontein (Previously Bloemfontein Electricity), Erongo Regional Electricity Distributor (Namibia), Tshwane (Pretoria) Electricity, Central Electricity Board (Mauritius), Consolidated Power Projects, Engen Refinery, Hillside Aluminium, IST Energy, Klerksdorp City Council, Mondi Paper, Net Group, Aurecon, PB Power, Rainbow Technologies, Richards Bay Coal Terminal (RBCT), Trans-Africa Projects, Eskom Transmission, Eskom Distribution, Tshwane Metro (previously Pretoria City Council), City of Windhoek, and numerous other utilities.

Education:

Bachelor of Electrical Engineering (B.Sc.Eng) (cum laude), University of Natal (South Africa), 1994

Employment Record:

June 2023 to Present:	Dawson Power (Pty) Ltd – Managing Director
March 2001 to Present:	RTG Solutions CC Specialist Consulting Engineers– Managing Member
Jan 1999 to Feb 2001:	IST Energy (Pty) Ltd – Principal Power System Protection Engineer
1995 to 1998:	Infranet Consulting Engineers – Protection & Automation Engineer
1994:	Rand Coal CRU Projects – Electrical Engineer (Plant and Rail)

Relevant National/International Papers Presented:

"Application of fibre optics in electric power systems", Fibre Optic 2001 Conference, Volkswagen Conference Centre, Midrand, 20 & 21 March 1997.

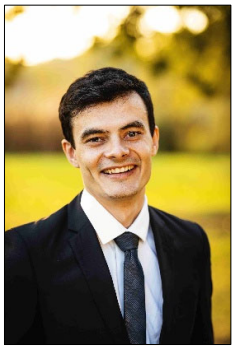
"An energy management system feasibility case study", Seminar on Electricity cost management in industry, Centre for New Electricity Studies, University of Pretoria, 2 & 3 June 1997.

"Energy management systems", Energy in Mining seminar, hosted by the Institute for International Research, Indaba Hotel Conference Centre, Fourways, 4 & 5 November 1997.

“Electrical Network Automation Solution – an ICAPS Case Study”, Power System Protection Conference, Southern Africa, hosted by Eskom/TSI, Midrand, November 2000.

Other articles by the author on substation automation have appeared more recently in the Elektron/Energise Journal of Southern African Power Industry.

Armand Duvenage CV



Name of Firm:	Dawson Power (Pty) Ltd
Name of Staff:	Armand Duvenage
Profession:	Professional Electrical Engineer
Date of Birth	15 February 1998
Years with Firm:	1
Nationality:	South African
Member:	SPIE, International Society for Optics and Photonics

Key Qualifications:

Mr. Duvenage is an electrical engineering and research specialist, having obtained a first degree in electronic engineering at the University of Pretoria in 2020. Subsequently Mr Duvenage has continued his post-graduate studies and is presently studying toward a PhD.

Mr. Duvenage's core experience includes post-graduate research into advanced optical engineering. In the electrical field Mr Duvenage has developed expertise in the power systems studies sphere, having completed numerous grid impact studies for clients wishing to align with NRS-097 and the South African Grid Code for Renewable Power Plants (SAGCRPP). The grid impact studies were implemented for clients under Category B of the Renewable Power Plant Categories with MV connections to the grid or embedded generation greater than 1 MVA. Mr Duvenage has also been involved in various aspects during the commissioning of the DRD ERGO Embedded Solar PV (60MW) with BESS (40MW/160MWh) during 2024.

Mr Duvenage has also conducted city-wide power system studies for the NEOM Trojena project, where he studied various MV-LV distribution network load flow scenarios and conditions to confirm and recommend design and implementation choices. Cable derating studies were also implemented to recommend cable choices for the unique operating conditions of the Arabian desert.

Mr Duvenage has recently completed the complete control and protection plant detailed design for the Eskom Sonvanger 132kV Collector Station, as well as being involved in the 132kV Joel, Oryx and Mbabala Collector Stations.

Mr Duvenage is proficient in load flow studies, voltage profiling, fault level studies, harmonic studies, dynamic performance evaluation and OHL burn-off rate studies.

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Education:

Bachelor of Electronic Engineering (B.Eng) University of Pretoria (South Africa), 2020

Bachelor of Electronic Engineering (B.EngHons) University of Pretoria (South Africa), 2021

Employment Record:

Jan 2024 to present:	Dawson Power (Pty) Ltd – Power System Studies Engineer
2023:	Lecturing and research assistant, University of Pretoria
2022:	Assistant Lecturer, University of Pretoria.

Relevant National/International Papers Presented:

"Rosette-scan tomographic Single-pixel Imager", Electron Journal Lett.59

"Simulation of a Tomographic single-pixel imager using rosette scanning", SPIE Publication 12737

Nathan Dawson CV

Name of Firm:	Dawson Power (Pty) Ltd
Name of Staff:	Nathan Dawson
Profession:	Electrical Engineer
Date of Birth	6 December 2002
Years with Firm:	1
Nationality:	South African
Member:	None

Key Qualifications:

Mr. Dawson is an electrical engineer, he obtained his bachelor's degree in electrical engineering at the University of Pretoria (UP) in 2024.

Mr Dawson has recently completed a grid-impact study and protection settings design for a 15 MW Solar PV project in Mauritius for Seabrew, including modelling of the upstream grid and all electrical equipment in DIgSILENT PowerFactory. Mr Dawson has completed load flow studies, fault studies and protection coordination studies for the DRD ERGO Embedded Solar PV (60MW) with BESS (40MW/160MWh).

Mr Dawson has recently completed the detailed design of the control and protection plant for the 132kV Mbabala Eskom substation involving the 132kV Sonvanger switching substation and 132kV Bambilanga IPP substation. Mr Dawson has completed Over Head Line (OHL) Transposition studies as well as Ferranti studies for the proposed loop-in loop-out (LILO) of the 400kV Komsberg substation into the existing Droerivier-Kappa 400kV OHL.

Mr Dawson has completed a detailed protection study for the Great Western Hospital in the UK using ETAP, this encompassed both 11 kV and 400 V protection settings design with 7.6 MVA of 11kV diesel generation and 1.5 MVA 400 V combined heat and power (CHP) generation. He has also completed a few Earth Electrode designs for IPP substations connecting to PV farms namely, Ilanga IPP and Noko.

Education:

Bachelor of Engineering (B.Eng., Electrical Engineering, cum laude), University of Pretoria, South Africa, 2024

Employment Record:

Dec 2024 to present:	Dawson Power (Pty) Ltd – Power Systems Design and Protection Engineer

Jarrod Odendal CV

Name of Firm:	Dawson Power (Pty) Ltd
Name of Staff:	Jarrod Odendal
Profession:	Electrical Engineer
Date of Birth	6 December 2001
Years with Firm:	0.5
Nationality:	South African
Member:	None

Key Qualifications:

Mr Odendal is an electrical engineer who obtained bachelor's degree in Electrical Engineering (cum laude) from the University of Pretoria in 2024.

Mr Odendal's Master's research focuses on the stability and integration of DC microgrids into existing grid infrastructure, with particular emphasis on control strategies for renewable energy and hybrid storage systems.

Mr Odendal has completed comprehensive earthing studies, encompassing earth electrode design, modelling, and the analysis of substation earth electrodes in accordance with South African and international standards to ensure safety and performance compliance. His project experience includes earth electrode design and modelling for NTCSA (Eskom Transmission) main transmission stations (MTS), earthing design for Eskom collector stations, earthing compliance studies for Independent Power Producer substations, and earthing systems for utility-scale solar PV farms.

Mr Odendal has completed the earth electrode design for the Dwaalboom Solar Power Plant with its associated Eskom collector station and IPP substation, as well as for the Ummbila Emoyeni Wind Energy Facility (2 × 150 MW) involving the Mpofu collector station and IPP substation. His experience further includes designs for the Skittermund and Matsap collector stations, together with the Mispah collector station and its associated IPP substation. In addition, he has undertaken the earth electrode design for the 132 kV Lion Thorn Switching Station linked to the IPP 132/33 kV substation, and for the Seabrew 15 MW Solar PV Plant in Mauritius, where the focus was on ensuring operator safety and compliance for the PV array.

Education:

Bachelor of Engineering (B.Eng., Electrical Engineering, cum laude), University of Pretoria, South Africa, 2024

Employment Record:

June 2025 to present: Dawson Power (Pty) Ltd – Power System Design Engineer

Caitlin Dawson CV

Name of Firm:	Dawson Power (Pty) Ltd
Name of Staff:	Caitlin Dawson
Profession:	Media & Graphical Designer
Date of Birth	29 September 1997
Years with Firm:	2
Nationality:	South African
Member:	None

Key Qualifications:

Ms. Dawson is a qualified Graphic Designer, holding an Interactive Media Certificate from Oakfields College and a Diploma in Graphic Design from Alison. She combines her creative expertise with administrative experience, providing a unique blend of design and organizational skills.

Her focus areas include brand design, logo creation, graphic design, and video editing, with proficiency in industry-standard tools such as Adobe Illustrator, Photoshop, InDesign, and Canva. She has successfully translated concepts into visually compelling designs across digital and print media, ensuring effective communication of brand messages and engagement with target audiences.

In addition to her creative background, Ms. Dawson has experience in administrative support, including invoicing, timesheet management, reconciliation, and route planning. This dual skill set enhances her ability to manage both the creative and operational aspects of projects.

Education:

Interactive Media Certificate – Oaksfields College (Pretoria, South Africa), 2019

Graphic design Diploma – Alison (Online), 2023

Employment Record:

Sept 2021 to Feb 2024:	RTG Solutions – Admin Assistant
March 2024 – Present:	Symaxx Digital – Graphic Designer, Media Manager, Project Manager & Video Editor

Jan 2024 – Present:	Media & Graphical Designer

Selected Company Projects Undertaken Since 2001

1.	Luderitz 50MW Wind Farm	Luderitz grid-tied 50MW Windfarm	EMT and RMS Grid code compliance studies specialist	EMT and RMS Grid code compliance studies	Energy China	2025 - present
2.	MeerKAT SKA Radio Telescope Rotating UPS	Network dynamic modelling, transient studies, protection specification and settings for the Eskom supply and Dynamic Rotating UPS System for the MeerKAT Square Kilometre Array (SKA) Telescope in Southern Africa	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Aurecon	2013
3.	Investigation into a transmission network instability problem in the BPC 220kV tranmission network in the Morupule Power Station area	Carry out a detailed investigation into the system instability problems as well as synchronisation problems in the Morupule region of BPC's transmission network.	Senior Systems & Studies Engineer	Systems/Studies Engineer	Botswana Power Corporation	2008
4.	BPC: Orapa 2 220/33kV Substation Upgrade	Upgrade the BPC Orapa 2 220kV Switching Station for the addition of a 40MVA 220/33kV Power Transformer. Determine the protection settings for the new transformer and filter banks.	Protection Specialist	Protection Specialist	Botswana Power Corporation	2016
5.	Airport Road 132/11kV Substation	Protection scheme designs, setting calculations and supervision of the testing and handing over of substations Kgale View, Airport (Gaborone), Maun and Jwaneng 132/33kV and 132/11kV substations.	Protection Specialist	Protection Specialist	Botswana Power Corporation	2008 -
6.	Maun 132/11kV Substation	Protection scheme designs, setting calculations and supervision of the testing and handing over of substations Kgale View, Airport (Gaborone), Maun and Jwaneng 132/33kV and 132/11kV substations.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Botswana Power Corporation	2007
7.	Transmission Network Modelling & Protection Studies	Modelling of the complete BPC national grid, and transmission grid protection modelling of key 400, 220 and 132kV systems, including protection setting and coordination.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Botswana Power Corporation (BPC)	2009 - 2010
8.	Grid modelling for protection and IPP islanding studies	Protection Study and Network modelling of the generation, distributed generation, transmission and distribution network, including load flow, fault studies and stability studies for the entire island.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Central Electricity Board, Mauritius (CEB)	2007 - 2007

9.	Grid Integration of Renewable Energy Plant	Network studies and integration of small hydro-electric plant, PV plant and wind turbine systems into the CEB grid, with particular consideration for the dynamic nature of the national grid.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Central Electricity Board, Mauritius (CEB)	2018
10.	Network modelling and protection study for the island of Mauritius	Modelling of the complete Mauritius grid including primary 22kV distribution substations and all utility generation and IPP generation stations. The study included the modelling of Diesel, Gas, Coal, Hydro and Bagasse power stations, the complete transmission grid and 22kV distribution stations. Following the study a complete revision of the protection settings was carried out, as previous protection studies had	Protection and Studies Specialist	Protection and studies engineer	Central Electricity Board, Mauritius (CEB)	2008 - 2015
11.	Investigation into the grid colapse of the Mauritius network in December 2011	Carry out an investigation into the grid collapse of the entire Mauritian grid including more than 400MW of generation in December 2011. The investigation revealed a number of shortcomings in the protection system which had previously been identified but which had not been rectified due to budget constraints.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Central Electricity Board, Mauritius (CEB)	2012
12.	Husab Mine Integration studies for a 12MW PV Farm system	System modelling for grid compliance approval of a 12MW PV Farm to be installed within the Husab Uranium Mine & Processing Plant, including an experimental battery energy storage system.	Studies and Grid Compliance Specialist	Studies and Grid Compliance Specialist	China Nuclear Power Generation Company	2014 - 2018
13.	Protection Study of the Pretoria 132kV Grid and 132/11kV Substations	Carry out a protection study for the Pretoria 132kV grid and 132/11kV Substatoins, including unit and backup protection setting calculations. Network fault level studies were carried out by the client. The grid at that time consisted of two 275/132kV intake substations and 56 switching and substations.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	City Council of Pretoria (now Tshwane Metro)	2018 -
14.	City of Windhoek Master Plan	Carry out detailed network studies in Digsilent Powerfactory and provide system protection guidelines for the City of Windhoek's Electrical Network 10-year Master Plan	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	City of Windhoek, Namibia	2006 - 2007
15.	City of Windhoek Transmission Line Protection Upgrade	Set and test the impedance-based and optical differential protection on 7 overhead lines in the City of Windhoek grid.	Protection Specialist	Protection Specialist	City of Windhoek, Namibia	2000

16.	Upgrade of Overhead Line Protection Schemes	Configuration, testing and commissioning of the line differential and impedance protection schemes for 7 overhead lines in the Windhoek Grid.	Protection Specialist	Protection Specialist	City of Windhoek, Namibia	2001
17.	Westgate Zone Substation	Design, setting, testing and commissioning of the Westgate Zone substation, Melbourne, Australia	Protection Specialist	Protection Specialist	City Power, Melbourne	2002
18.	400kV 250MVAr SVC Protection Studies	Review, evaluate and revise Protection and Control Schemes for a 400kV 250MVAr Static VAr Compensator, in conjunction with PSD Consulting. Revision of studies of the SVC System were carried out as the network evolved.	Protection Specialist	Protection Specialist	Dubai Electricity and Water Authority (DEWA)	2004 - 2005
19.	Namibian Custom Smelters, Tsumeb	Provide a detailed design of the secondary plant for the 132/11kV main intake substtion of Namibian Custom Smelters, Tsumeb. Carry out a protection study and liase with Nampower for the coordination of the protection functionality required.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Dundee Precious Metals (owner of NCS)	2009 - 2010
20.	Duvha Colliery Protection Study	Carry out a network study and protection setting study for the complete Duvha Colliery electrical network.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Duvha Colliery	1995
21.	Nampula 220/20kV Station & Statcom	Stabilisation of the Nampula Grid. RTG Involvement was to carry out the protection study for the station and statcom	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Electricidade de Mocambique	2012
22.	Renewable Energy Systems Grid Code Development	Establishment of a Gazettable Grid Code for the integration of Renewable Energy Systems, with and without storage, including system stability studies, for Namibia.	Renewable Energy Systems and Studies Specialist	Renewable Energy Systems and Studies Specialist	Electricity Control Board. Namibia	2007 - 2008

23.	Protection Scheme Upgrades, George Munic	Design of retrofits, setting and testing of the protection at varous substations in George.	Protection Specialist	Protection Specialist	George Municipality	2006 -
24.	20MW PV Farm Integration studies and Protection Settings	20MW PV Farm Integration studies and protection settings studies for utility-connected IPP	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	GreenYellow, Madagascar	2017
25.	Mariental 30MW PV Plant	Protection settings, testing and commissioning of a grid-tied PV plant at Mariental, Namibia	Protection Specialist	Protection Specialist	IPP to Nampower	2018
26.	Kokerboom PV Plant	Protection settings, testing and commissioning of a grid-tied PV plant at Kokerboom, Namibia	Protection Specialist	Protection Specialist	IPP to Nampower	2018
27.	Okatope 2 x 5MW PV Farms	Detailed design, configuration, setting, testing and commissioning of the 132/22kV Okatope Substation PV Plant farms interface, including the 22kV PV Farm substation protection setting and commissioning.	Protection Specialist	Protection Specialist	Jabil Energy	2004 - 2005
28.	UFLS System for KCCL	Modelling, design, and implementation of a multi-stage under-frequency load-shedding system for a multi-supply plant with hydro-electric generation, diesel generation and weak supply authority infeed from UEB.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	KCCL	2003
29.	Ketraco: Nairobi 220kV Transmission Rings and 220/66kV Substations	Model the complete Ketraco 220kV grid and 220/66kV Substations. Carry out a complete Protection Study in order to determine all of the protection settings for the protection in the new and affected existing substations for the introduction of 4 new transmission substations.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Ketraco	2000 -
30.	Lonmin K4 Shaft	Protection settings study for the complete MV electrical network at Lonmin K4 shaft	Protection Specialist	Protection Specialist	Lonmin	2006

31.	WBJV Project 1: North Portal and Main Consumer Substations	Setting, testing and commissioning of the North Portal and Main Consumer Substations	Protection Specialist	Protection Specialist	Maseve Investments	2013
32.	Namibian Custom Smelters	Commissioning of the substation and Nampower interface protection, control and primary plant	Protection Specialist	Protection Specialist	NCS, Tsumeb	2013
33.	Standard Bank SA Rotating UPS	Network dynamic modelling, transient studies, and protection settings for the City Power supply and Dynamic Rotating UPS System for the Standard Bank of South Africa's Head Offices, Roodepoort	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	One Zero Consulting	2013
34.	Rossing Uranium, Namibia	Develop a detailed network model of the Rossing Uranium Plant's extensive 11kV and 3.3kV network and large motors. Model all protection relays and carry out a grading study. Audit the substations and provide detailed recommendations for improving the plant's electrical performance and availability.	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	Rio Tinto, owner of Rossing Uranium	2008 - 2009
35.	Rosh Pinah East Ore substation	Carry out a grading study, set and test the protection relays on the new East Ore Substation.	Protection Specialist	Protection Specialist	Rosh Pinah Chrome, Namibia	2008
36.	Transmission Network audit Audit, Modelling and Protection Review	Investigation into present state of the transmission grid, modeling thereof (in DigSilent PowerFactory and later in PSS/E) and network re-arrangement and expansion proposal designs (first phase of the Master Plan) to upgrade the transmission network, including evaluation and quantification of reactive power compensation systems to optimize network performance.	Protection and Studies Specialist	Protection and studies engineer	Tanesco, Tanzania	2009 - 2013
37.	Twikenham Zone Substation	Design, setting, testing and commissioning of the Twikenham Zone substation, Melbourne, Australia	Protection Specialist	Protection Specialist	United Energy, Melbourne	2004 - 2004

38.	Zone Substation Protection and Control Scheme Design and Settings	Network modelling, development of a protection philosophy, detailed protection setting and IED configuration for a sub-transmission network with zone substations.	Protection Specialist	Protection Specialist	United Energy, Melbourne (Australia)	2016 - 2020
39.	ZETDC Transmission and Subtransmission Grid protection study	Model the complete ZETDC transmission and subtransmission grid. Model the dynamic system in PSS/E for grid dynamic behaviour, then translate the model into a steady-state DigSilent model and carry out a complete Protection Study in order to determine all of the protection settings for the protection in the new and affected existing substations for the introduction of 4 new transmission lines	Senior Studies and Protection/Automation Engineer	Studies and Protection Specialist	ZETDC	2023 - Present
40.	NEOM Trojena City	Design of the complete Neom City MV Electrical Distribution System and associated systems	Senior Electrical Engineer Studies, Planning, Renewable Energy	Senior Electrical Engineer overseeing various aspects of the development of the electrical distribution system, including: - Distribution Network Design. - Distribution Network Modelling & Studies (Loadflow, Voltage Profiling, Harmonic Risk, Dynamic Capabilities). - Cable thermal modelling and derating. - EV Charging Systems Studies.	NEOM Trojena	2005 - 2005
41.	Gaberone East Substation	Commissioning of Gaberone East 132/11kV Substation	Protection Specialist	Protection Specialist	Botswana Power Corporation (BPC)	2004
42.	Westfield Substation	Commissioning of Westfield 88/11kV substation	Commissioning Engineer	Commissioning Engineer	Citipower Jhb	2007 -
43.	Yeastpro Consumer Substation	Commission Yeastpro consumer substation	Commissioning Engineer	Commissioning Engineer	Citipower, Jhb	2006
44.	Presidential Statehouse Substation	Commissioning of the statehouse substation and emergency generation	Commissioning Engineer	Commissioning Engineer	City of Windhoek, Namibia	2006

45.	Lonmin K4 Substations	Commissioning of Lonmin K4 Consumer Substation and surface plant substations	Automation System and SCADA Specialist	Automation System and SCADA Engineer	Lonmin	2008 - 2010
46.	Ormond Substation	Commissioning of the Ormond protection and control equipment as well as a transformer dynamic ratings system for adaptive load and overload management	Commissioning Engineer	Commissioning Engineer	United Energy, Melbourne	2008 -
47.	Oakleigh Substation	Commissioning of the Oakleigh substation protection, control and transformers	Commissioning Engineer	Commissioning Engineer	United Energy, Menbourne	2004
48.	Development of a Utility Multi-functional communications master plan	Development of a communications master plan for the complete utility in order to cater for the SCADA, remote metering, power quality monitoring, telephony and engineering support systems.	Consulting Engineer for the complete project.	Design Consulting Engineer for the complete project.	Bloemfontein Electricity	2009 -
49.	Design of a Utility Metropolitan (Wide) Area Network	Design and implementation of the hardware for a grid-wide multi-purpose communications network in order to integrate the modern substation automation systems into the existing SCADA system as well as to cater for the planned upgrade to the SCADA system.	Lead design consulting engineer.	Lead design consulting engineer.	City of Windhoek, Namibia	2009 - 2010
50.	Utility Protection and Control Communications System Planning	Tshwane Power System communication system design: Responsible for the conceptual design and specifying of optic fibre communication equipment for the transmission network's new protection, control, telephony and auxiliary communication system.	Grid Communications and Protection Specialist	Grid Communications and Protection Specialist	Pretoria City Council	2010 -
51.	Protective Earthing System Designs for Namwater Base and Booter Stations	Design of protective earthing systems for Namwater Base, Booster 1 & 2 MV substations.	Earthing Specialist	Earthing Specialist	Namwater	2010 - 2011
52.	CSIR Campus, Pretoria	Investigation into the cause of 132kV supply trips from the Tshwane Metropolitan Council during wind tunnel startups and distribution network switching.	Protection Specialist	Protection Specialist	Council for Scientific and Industrial Research (CSIR), Pretoria	2012

53.	Ottowa Substation 400kV Bus Protection Investigation	Test, trouble-shoot and correct the 400kV medium-impedance bus protection scheme for Durban Corporation's intake at Ottowa.	Protection Specialist	Protection Specialist	Durban Corporation	2003
54.	Investigation into primary plant failures	Investigate various failures within the Eskom 132kV Sub-transmission system, in particular capacitor bank failures.	Protection Specialist	Protection Specialist	Eskom Distribution	2011 - 2012
55.	Fault-finding of Eskom 132kV filter banks	Fault-finding, testing and validating the repairs in 132kV Eskom distribution filter banks at various distribution stations	Protection Specialist	Protection Specialist	Eskom, via ABB Powertech	2012 -
56.	AMR Specification: Emfuleni	Emfuleni Council had been taken under partial curatorship due to large financial losses. Deloitte Consulting was appointed to manage the reform of the council. RTG Solutions was appointed by Deloitte Consulting to carry out the market research and thus design and specify a new AMR system with remote management, control and integral system supervision in order to improve the revenue collection of the large and diverse system of customers.	Systems Engineer	Systems Engineer	Emfuleni City Council	2016
57.	AMR Review	Together with The Energy Practice, a partner company to RTG Solutions, the existing Erongo RED AMR system was evaluated and recommendations made for improvements to the meter reading and dispensing systems. The recommendations largely involved replacement of the existing proprietary system with more open and thus competitively priced (and more flexible) AMR Systems.	Systems Engineer	Systems Engineer	Erongo RED	2012 - 2013
58.	City of Windhoek Master Plan 5 yearly Review 2010	Updating of the complete network master plan for the primary and secondary electrical networks (66kV & 11kV) – done under the auspices of Aerecon Namibia in 2010.	Senior Systems & Studies Engineer	Systems/Studies Engineer	City of Windhoek, Namibia	2013 - 2015
59.	Protection Scheme Training Manuals	Develop training and technical manuals for various line protection IEDs in service in Eskom.	Protection Specialist	Protection Specialist	Eskom Distribution	2008 - 2009
60.	Caprivi DC Link Terminal Stations	Provide assistance to ABB Sweden for the design of protection and control systems for the AC components of the terminal stations for the Caprivi HVDC link at Gerus and Katima Mulilo.	Protection Specialist	Protection Specialist	ABB Sweden	2017 - 2018

61.	Jwaneng 132/33kV Substation	Protection scheme designs for the Jwaneng 132/33kV Substation.	Protection Specialist	Protection Specialist	Botswana Power Corporation	2002 -
62.	Unit Protection Scheme Design	Design, implementation and testing of a flexible unitised protection scheme with multiple switching combinations for the CTBV 11/66kV generation station supply lines into the CEB network at Belle Vue. This work was done via Duke Energy.	Protection Specialist	Protection Specialist	Central Electricity Board, Mauritius (CEB)	1999
63.	Delta Substation Upgrade	Installation, integration into the existing substation protection and control plant, and commissioning of a new 275/88kV 250MVA transformer.	Protection Specialist	Protection Specialist	Citipower Jhb	2012 -
64.	Retrofitting of optical differential/distance protection schemes on the main infeeds to the City of Windhoek	Retrofitting of optical differential/distance protection schemes for the main infeeds to the City of Windheok network. Protection setting studies as well as the commisisoning of the schemes was included in the scope.	Protection Specialist	Protection Specialist	City of Windhoek, Namibia	2015 -
65.	Protection Scheme for CTBV IPP and Grip Connection Point	Design, implementation and testing of a flexible unitised protection scheme with multiple switching combinations for the CTBV 11/66kV generation station supply lines into the CEB network at Belle Vue. This work was done via Duke Energy	Protection Specialist	Protection Specialist	Companie Thermique de Bell Vue (CTBV), Mauritius	1999 -
66.	CTBV IPP Power Station Protection and Control Plant	Design and commissioning of protection schemes for the CTBV IPP Power Station in Mauritius	Protection Specialist	Protection Specialist	Duke Energy	1999
67.	Eskom Distribution ENC	Design, configuration, prototyping and testing of the Distribution Transformer ENC Scheme, as well as technical support thereof following scheme installations	Protection Specialist	Protection Specialist	Eskom Distribution	1999
68.	Eskom Transmission ENC	Design, configuration, prototyping, testing of the Transmission Transformer ENC Scheme, as well as technical support following the scheme installations.	Protection Specialist	Protection Specialist	Eskom Transmission	1998

69.	Rosh Pinah Zinc Intake Substation	Set and commission new transformer protection schemes at the Rosh Pinah Zinc main intake substation	Protection Specialist	Protection Specialist	Rosh Pinah Zinc	2006
70.	Tyger Valley Substation	Setting and commissioning of the Tyger Valley substation, Tygerberg	Protection Specialist	Protection Specialist	Tygerberg Municipality (now incorporated into Cape Town)	1998
71.	Mall of Africa Solar PV System Audit and Performace Evaluation	Solar PV System Audit and performance evaluation of the Mall of Africa Solar PV System	Embedded Renewables Specialist	Solar PV System Audit and performance evaluation of the Mall of Africa Solar PV System, including PV Sol simulations for the verification of planning studies and budgets.	Attaq	2019 - 2020
72.	Development of a supporting models and studies for the development of the Renewable Energy Grid Code.	Modelling of various aspects of all readily available renewable energy plant technologies in order to develop particular grid-specific technical requirements for the Namibian Renewable Energy Grid Code, as well as to test various grid, technology and constraint behaviours. This modelling and associated studies were carried out as part of the supporting function for the development of the RE Grid Code, also undertaken by the	Studies and Grid Compliance Specialist	Studies and Grid Compliance Specialist	Electricity Control Board (ECB) of Namibia	2016 -
73.	Eskom South Africa Battery Energy Storage for 8 sites across South Africa	Design, Engineering, Supply, Construction, Installation, testing and Commissioning of Battery Energy Storage Systems (BESS) with a minimum cumulated 83MW / 332MWh of usable capacity and energy, including 5 Years Plants Operation and Maintenance Services	Control and Automation Specialist	Owner's Technical Consultant for all Control Plant (SCADA, Telecoms, Metering, Protection, BESS Control), and BESS system integration into the grid.	Eskom	2006 - 2007
74.	IPP Interfacing, testing and commissioning	PV Plant protection interfacing, testing and assistance with the grid compliance testing for the Rustmo 1 PV Plant & tie-in to Eskom Distribution 88kV Station	Protection Specialist	Protection Specialist	Eskom Distribution	2014
75.	Paprika PV Audit	Audit of Hardap (Paprika) Solar PV system	Renewable Energy and Grid Integration Specialist	Audit Engineer (Electrical)	WSP	2020

76.	Siemens Sinaut SCADA System Upgrade Planning	Planning of the upgrade to the Siemens Sinaut Spectrum SCADA system, including integration of the new substation automation systems. Revision of system alarming and control functionality was also addressed.	Joint automation, SCADA and systems consulting engineer.	Joint automation, SCADA and systems consulting engineer.	City of Windhoek, Namibia	2001 - 2002
77.	Substation Automation System Interfacing to new Siemens Sinaut SCADA	Interfacing of Substation automation systems for four Load Centres and 14 Distribution Stations into the Sinaut Spectrum SCADA System with parallel interfacing to an Adroit Control System, both with dual Masters.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	1999 -
78.	New SCADA System implementation at Capital Park	Description of Project: Implementation of a new SCADA System with EMS & EMS functionality for the Pretoria Electricity Network at Capital Park.	Substation Automation Engineer involved in the definition of EMS & DMS functional definitions to accommodate modern substation automation systems.	Position/Function: Substation Automation Engineer involved in the definition of EMS & DMS functional definitions to accommodate modern substation automation systems.	Pretoria City Council	2014 -
79.	Orlando Switching Station Upgrade	Design, installation and commissioning of new protection and control plant in the Orlando Power Station as part of the conversion to a 28 Bay switching station, including SCADA system interfacing.	Protection Specialist	Protection Specialist	Citipower Jhb	1999
80.	Citipower Jhb Khanyisa 88/11kV Substation	Provide detailed designs and specifications for the procurement of an integrated protection and control system for the 88/11kV Khanyisa substation.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	CitiPower Jhb, in conjunction with Aurecan	2018 - 2019

81.	Citipower Jhb Crown 132/11kV Substation	Provide detailed designs and specifications for the procurement of an integrated protection and control system for the 132/11kV Crown substation.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	CitiPower Jhb, in conjunction with Aurecon	2001 - 2005
82.	Lynnwood 132/11kV Substation	Specification of protection, control and automation equipment to realise more advanced protection and control systems. Technical consultation and supervision of the detailed design, prototyping, testing, installation and commissioning of the integrated protection and control system.	Protection Specialist	Protection Specialist	City Council of Pretoria (now Tshwane Metro)	2001 - 2002
83.	Eland, Villeria, Parktown and Mayville 132/11kV Substations	Development of conceptual designs for Integrated Protection and Control Systems for 132/11kV Substations. Specification of protection, control and automation equipment to realise the conceptual designs. Technical consultation and supervision of the detailed design, prototyping, testing, installation and commissioning of the integrated protection and control systems.	Consulting Engineer and Systems Engineer	Consulting Engineer and Systems Engineer	City Council of Pretoria (now Tshwane Metro)	2017 -
84.	Integrated protection and control system for Lyttelton 132/11kV Substation	Detailed design and generation of manufacturing drawings, equipment configurations and automation system databases for an ultra-modern integrated protection and control system for the Lyttelton 132/11kV substation.	Protection Specialist	Protection Specialist	City Council of Pretoria (now Tshwane Metro)	2018 -
85.	Maerua Mall Substationn	Configuration, testing and commissioning of the substation automation sytem for Maerua Mall substation, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2004

86.	Musiek Substation	Configuration, testing and commissioning of the substation automation sytem for Musiek substation, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2005
87.	SAR Comm Substation	Configuration, testing and commissioning of the substation automation sytem for SAR Comm substation, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2005
88.	Presidential State House of Namibia	Complete substation automation system detailed design, equipment programming and configuration, and design and configuration of the remote engineering access system and SCADA system configuration, including the communication equipment, as well as integration of localised emergency generation and remote supervision thereof.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2017 - 2018
89.	Statehouse Substation	Configuration, testing and commissioning of the substation automation sytem for Statehouse substation, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2007
90.	Auasblick Load Centre	Configuration, testing and commissioning of the substation automation sytem for Auasblic Load Centre, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2005 - 2006
91.	Kupferberg & Elizenheim Load Centres	Configuration, testing and commissioning of the substation automation sytem for Load Centres Kupferberg and Elizenheim, including the remote engineering system and SCADA sytem.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2013 -

92.	Auasblick Load Centre	Complete substation automation system detailed design, equipment programming and configuration, and design and configuration of the remote engineering access system and SCADA system configuration, including the configuration of communication equipment for telecontrol and unit protection schemes. The substation automation system is based on proprietary protocols and a DNP 3.0 for remote supervision.	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2012 - 2013
93.	Windhoek and Bach Load Centres	Design new protection schemes for the existing main intake substation transformers at Windhoek and Bach Load Centres.	Protection Specialist	Protection Specialist	City of Windhoek, Namibia	2008
94.	Windhoek and Back Load Centre Upgrades	Upgrade and commission critical protection schemes in the Windhoek and Bach Load Centres	Protection Specialist	Protection Specialist	City of Windhoek, Namibia	2009
95.	Lafrenz Industrial Substation	Commission the Lafrenz Industrial substation, including the substation integrated control system (substation automation)	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2009
96.	Lafrenz Industrial substation	Complete substation automation system detailed design, equipment programming and configuration, and design and configuration of the remote engineering access system and SCADA system configuration, including the configuration of communication equipment for telecontrol and unit protection schemes	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2020 - present
97.	Schmerenbeck Substation	Commission the Schmerenbeck Industrial substation, including the substation integrated control system (substation automation)	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2010

98.	Schmerenbeck substation	Complete substation automation system detailed design, equipment programming and configuration, and design and configuration of the remote engineering access system and SCADA system configuration, including the configuration of communication equipment for telecontrol and unit protection schemes	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	1995 - 1999
99.	Eros Load Centre	Design, specification and technical supervision of the procurement, manufacture, installation and commissioning of a substation automation system based on the new IEC 61850 standard. Complete configuration of the Load Centre Automation equipment, SCADA interface, and configuration of the SCADA System	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2011 - 2012
100.	Olympia Load Centre	Design, specification and technical supervision of the procurement, manufacture, installation and commissioning of conventional (phase 3) protection, control and monitoring equipment for the upgrade of the Olympia Load Centre in Windhoek..	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2008 -
101.	Nubuamis substation	Complete substation automation system detailed design, equipment programming and configuration, and design and configuration of the remote engineering access system and SCADA system configuration, including the configuration of communication equipment for telecontrol and unit protection schemes	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2006 -
102.	Nubuamis Substation	Commission the Nubuamis substation, including the substation integrated control system (substation automation)	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2012
103.	Katutura East Substation	Commission the Lafrenz Industrial substation, including the substation integrated control system (substation automation)	Automation System and SCADA Engineer	Automation System and SCADA Engineer	City of Windhoek, Namibia	2012