



SARETEC
SOUTH AFRICAN RENEWABLE
ENERGY TECHNOLOGY CENTRE

CAN AFRICA MEET THE SOLAR SKILLS DEMAND?

16 February 2022



www.saretec.co.za



AN INITIATIVE OF:

higher education
& training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA



MANAGED BY:

Cape Peninsula
University of Technology

SUPPORTED BY:



german
cooperation
DEUTSCHE ZUSAMMENARBEIT

PARTNERS OF:



BZEE
Training & Events for
Renewable Energy



SAWEA
South African Wind Energy Association

MEMBERS OF:



SAPVIA
South African Photovoltaic Industry Association



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INTRO TO SARETEC

SARETEC was established in 2013, after a team under guidance of Green Cape, visited Europe and were introduced to the amazing world of Renewable Energy.

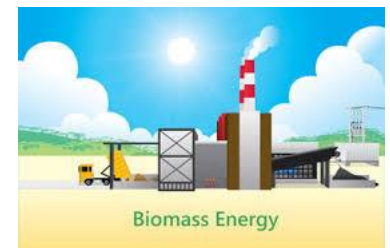
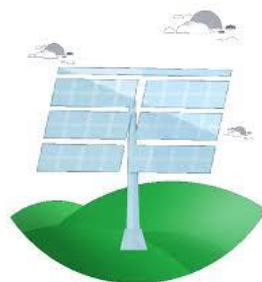
Application was made to DHET for funding by NSF, who agreed to fund, on condition SARETEC was associated to an HEI – university or UOT.

CPUT was the successful bidder, and the SARETEC building was established in late 2014, on a piece of land adjacent to CPUT in Sacks Circle, Bellville

The Unit, which falls under the Faculty of Engineering and the Built Environment, is governed by a Board, made up of CPUT management, DHET officials, Industry and the leaders the Skills Development field.



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HYDRAULICS & ELECTRIC LABORATORIES





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SOLAR FACILITY:





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CLASS ROOMS & STUDENT HUB





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Vision

To be the skills development hub of excellence in renewable energy as a catalyst for sustainable economic growth and development in Africa

Mission

We will achieve our Vision by enabling Renewable Energy skills development through;

- ***Design, development and provision of state of the art training programmes and modalities to meet quality council and industry standards.***
- ***Establishing strategic partnerships with public, private and civil society stakeholders.***

Values

RESPECT - At SARETEC we value respect, because we acknowledge our diversity by trying and striving to understand each other.

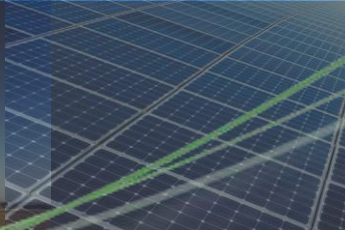
PERFORMANCE - At SARETEC we value outstanding performance while being passionate and accountable for all outcomes in all areas.

TEAMWORK - At SARETEC we value teamwork, because we strive to achieve our goals through helpfulness and supportiveness.

FAIRNESS - At SARETEC we value fairness, because everyone counts equally.

HONESTY - At SARETEC we focus on honesty in order to create trust, confidence, harmony and happiness.

TRUST - At SARETEC we focus on building trust through our values being; honesty, fairness, supportiveness, respect and passion, performance and accountability.



BASIC WIND TRAINING - GWO

GWO COURSE NAME	DURATION	DETAILS	LEARNER
Basic Safety Training (BST)	4-days	First Aid, Manual Handling, Fire Awareness & Working at Heights	Qualified WTST and/or Individual
Basic Technician Training (BTT)	5-days	Mechanical, Electrical & Hydraulic modules	Qualified WTST and/or School Leaver
Blade Repair Training (BRT) (2020)	10-days	General Safety, General knowledge, Lamination Skills, Inspections, Lightning Protection, Repairs	Qualified WTST
Advance Rescue Training (ART) (2020)	4-days	Rescue in the Nacelle, Tower, Basement, Spinner, Hub & Inside Blade	Qualified WTST
Enhanced First Aid (EFA) (2020)	3-days	Local & international legislation & guidelines. Using advanced emergency equipment and medical teleconsultation from remote areas acting as a leader.	Qualified WTST









CUSTOMISED TECHNICAL SHORT COURSES

	COURSE NAME	DESCRIPTION	DURATION	LEARNER
	Torque & Tension Course	Bolt types & tensioning, Manual & Hydraulic torque tightening, Flange alignment, Gaskets, Lubrication, Tool calibration & maintenance	2-days (ASME accredited)	Technicians
	SARETEC Hydraulics	Principles of Hydraulic Systems Diagrams and components Construction, function & application Technical documents: Purpose Maintenance procedures Hydraulic Health and Safety Environmental protection & Quality procedures Correct disposal of hydraulic waste materials	5-days	Qualified WTST

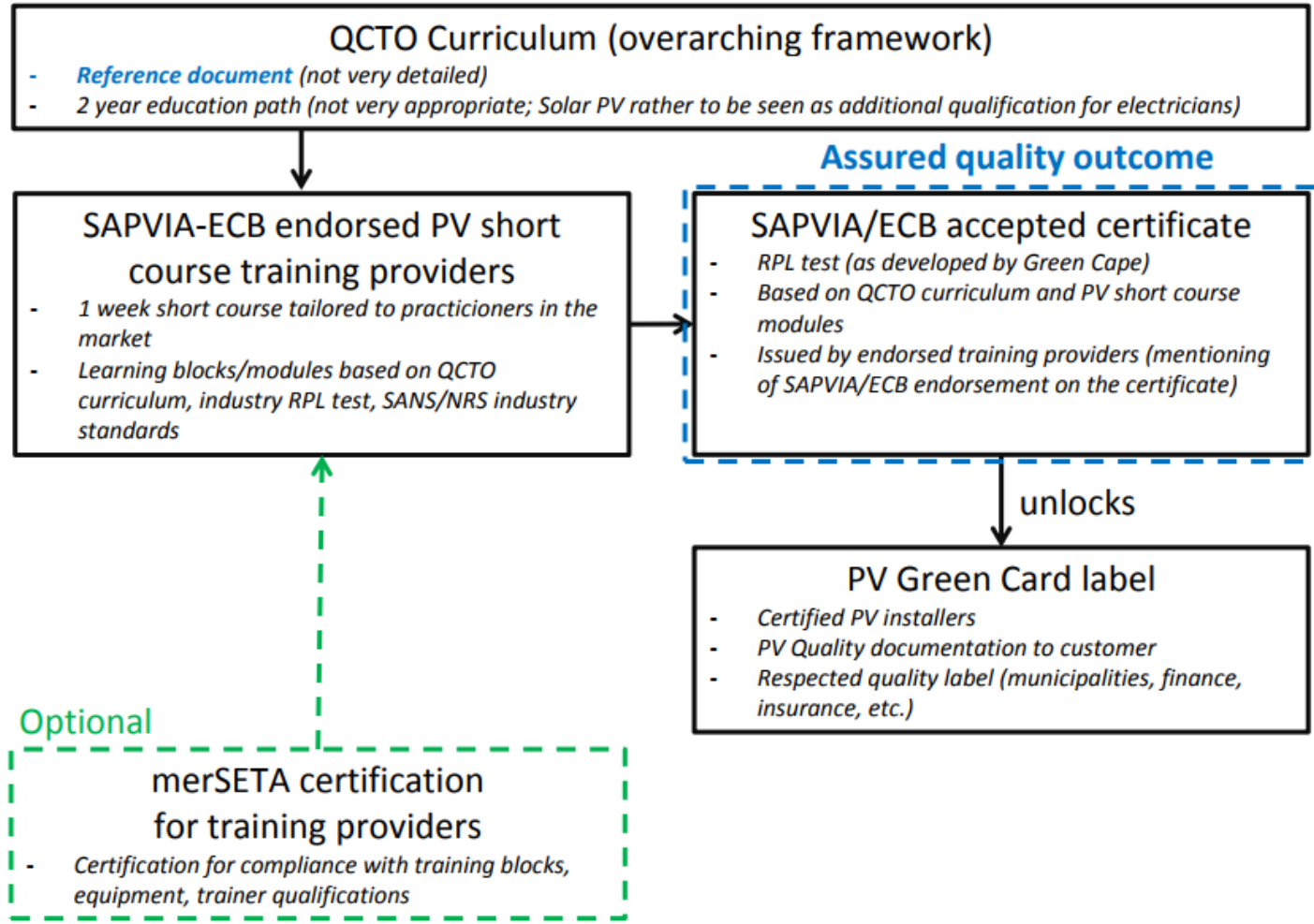


SOLAR PV TRAINING OFFERINGS

 SARETEC <small>SOUTH AFRICAN RENEWABLE ENERGY TECHNOLOGY CENTRE</small>	Solar PV Mounter Part Qualification	12 month – Accredited with QCTO
 SARETEC <small>SOUTH AFRICAN RENEWABLE ENERGY TECHNOLOGY CENTRE</small>	Solar PV Installer Part Qualification	12 month – Accredited with QCTO
 SARETEC <small>SOUTH AFRICAN RENEWABLE ENERGY TECHNOLOGY CENTRE</small>	Solar PV Service / Farm Technician Qualification	12 month – Accredited with QCTO
 SARETEC <small>SOUTH AFRICAN RENEWABLE ENERGY TECHNOLOGY CENTRE</small>	Renewable Energy Workshop Assistant	5 weeks Skills Programme registered with QCTO
 SARETEC <small>SOUTH AFRICAN RENEWABLE ENERGY TECHNOLOGY CENTRE</small>	Workplace Essential Skills, with Working at Heights & OHS	3-4 weeks Skills Programme registered with QCTO
 SAPVIA <small>SOUTH AFRICAN PHOTOVOLTAIC INDUSTRY ASSOCIATION</small>	SAPVIA Solar PV Course with Green Card Assessment	5 Day Industry-led course



SA PV Quality Programme – Vision (training perspective)



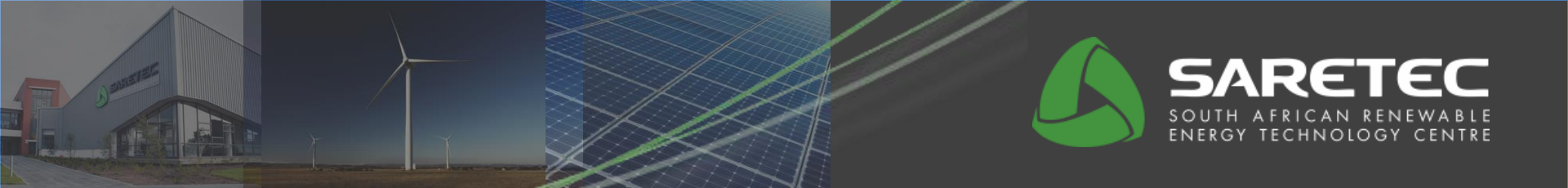


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HOW WOULD WE DESCRIBE A COMPETENT SOLAR PV INSTALLER?

Please guide me here – what is your interpretation?

- Good understanding of Solar
- Clear idea of how a Solar Panel must be installed
- Direction and angle of Solar Panel
- The Kwh to be accessed / accumulated from the sun
- The impact of this connection on the current Electricity Grid
- The Connection to the Grid

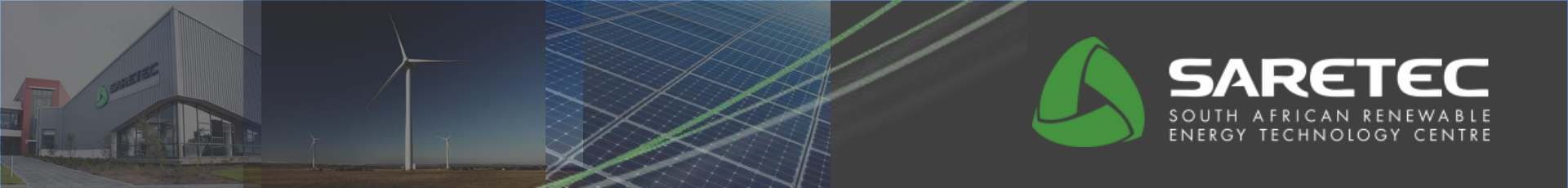


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INDUSTRY EXPECTATIONS

SAPVIA, in response to industry demand, invited SARETEC to host the Solar PV 5-day course, directed initially at Qualified Electricians to convert their skills to incorporate the installation of PV systems, and link these to the Electricity Grid.

- 24 training institutions registered to offer PV GreenCard training**
- 2 assessment centres registered to offer the PV GreenCard Assessment**
- 700 installers trained**
- 240 installers assessed**
- 167 registered installation companies (companies who employ or work with installers as subcontractors)**
- 73 installers registered (individuals who passed the PV GreenCard Assessment)**



ALIGNMENT TO DHET GUIDELINES FOR QUALIFICATIONS

SARETEC was involved in the development of the new QCTO qualifications for Solar Photovoltaic Service Technicians (SPVT) as well as the Wind Turbine Service Technicians (WTST)

In this journey, SARETEC was invited by MerSETA to join a collaboration with CSIR and develop the MerSETA response to the demand or interest in the 4IR – Fourth Industrial Revolution. This team worked together to develop the first App of its kind to address Occupational Qualifications.

The targeted qualification was the SPVT – which was registered by SAQA in 2015.

A new advent of apprenticeship delivery was birthed, and is nearing its pilot launch in July 2022!



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MerSETA-FUNDED ICT4APP

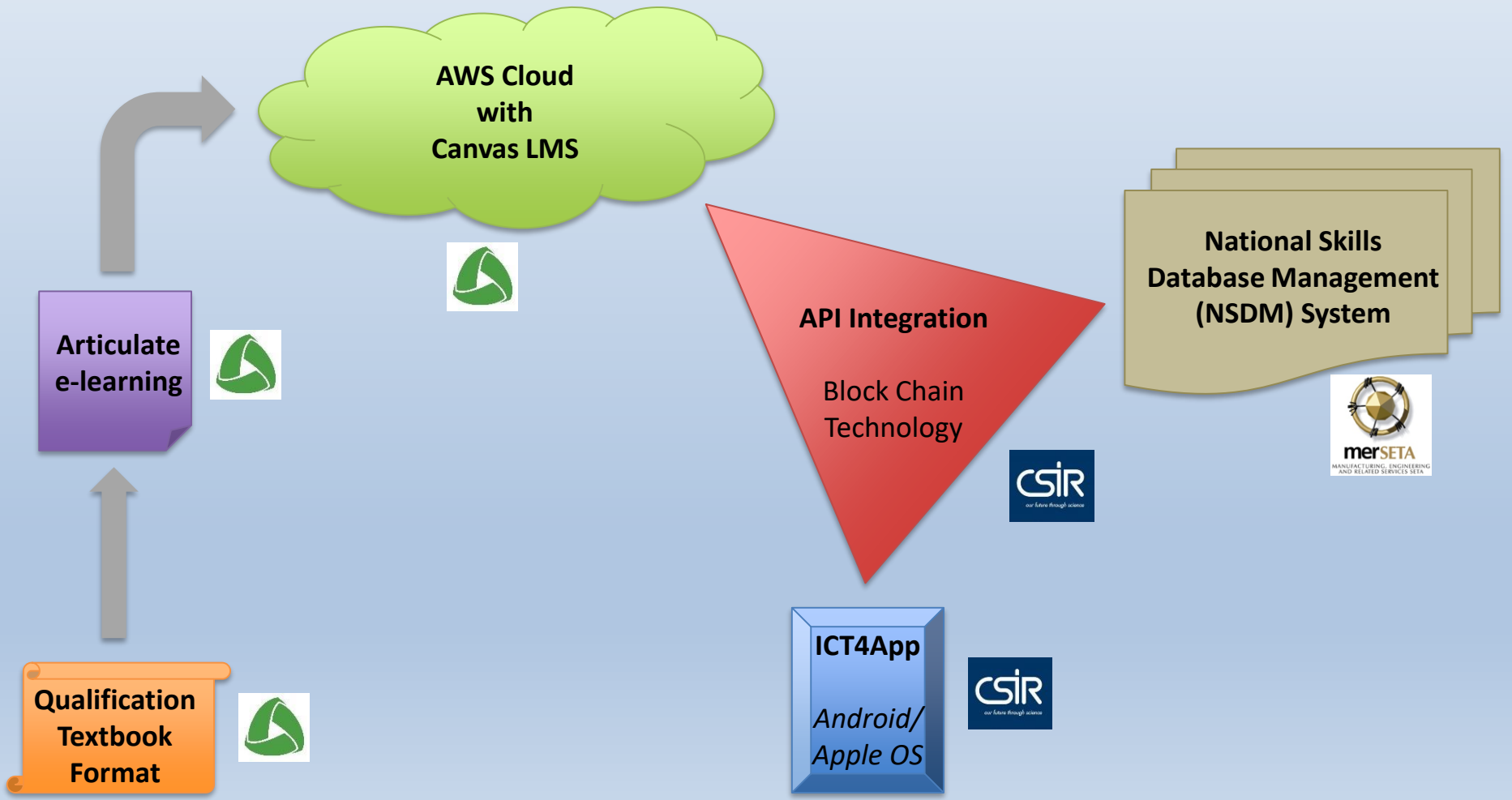
SARETEC, in association with CSIR and MerSETA, are developing the new QCTO qualification for the Solar Photo Voltaic Service Technician

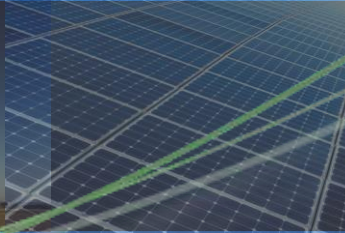
Our Role:

1. Developing Learning Material for parts 1-2, and oversight over the development of parts 3-4
2. Developing Technical Mentors to support the implementation of ICT4APP
3. Signing up Implementing TVET Colleges around the country, where the Technical Mentors will be based
4. Implementing Pilot Projects as part of the development of the programme



SOLAR PV QUALIFICATION ICT4APP (INDUSTRY 4.0 PROJECT)

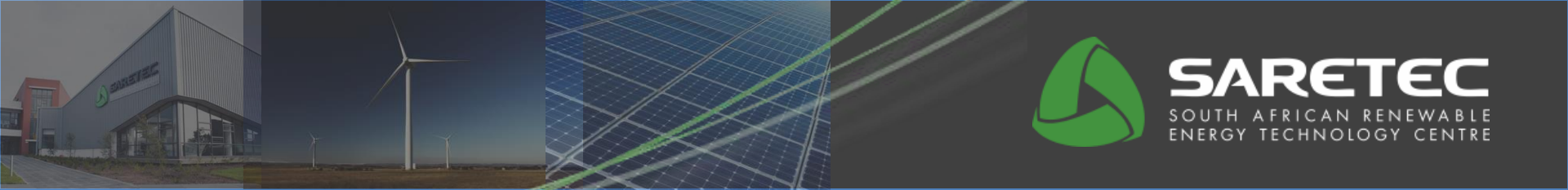




SOLAR PV MOUNTER

CURRENTLY 84 CREDITS

Knowledge Modules	Practical Skill Modules	Work Experience Modules
<ul style="list-style-type: none">• Workplace fundamentals• Tools, equipment and materials• Components of PV systems	<ul style="list-style-type: none">• Mitigate and respond to hazards associated with PV system installation and maintenance• Work at heights• Use tools, measuring instruments and equipment• Install the mechanical components of a PV system	<ul style="list-style-type: none">• Structured planning and communication processes in the workplace• Processes to install mechanical components of PV systems



SARETEC as an Accredited Skills Development Provider under the Quality Council for Trades and Occupations, recognizes the need for an approved and vetted Artisan Recognition of Prior Learning (ARPL) programme for this SPVT qualification.

Why?

- No need to “retrain” a qualified artisan
- Electricians ideally suited to SPVT – the linkage is ideal
- It is critical to close the skills gaps for a person with a desire to work in the SPVT space, without onerous training
- Seamless transition

What are some critical loops?

- Working at Heights
- Safety
- Ability to gauge roof strengths



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REGISTERED SKILLS PROGRAMME

SARETEC IS COMMITTED TO ADDING VALUE TO THE ENTIRE VALUE CHAIN WITHIN THE AREA WHERE SOLAR FARMS OR MACRO INSTALLATIONS ARE TAKING PLACE.

We have developed **two** of **four or five** planned Skills Programmes, which are registered by QCTO, and will enable successful learners to receive Certification upon completion of these programmes.

The skills provided are basic workplace interactive skills, basic hand and power tool skills, introduction to Renewable Energy

More importantly, they will acquire the rudimentary skills and resources to actively participate and earn an income from participation in the project.

This will, besides the income generating opportunity, provide an appetite for a longer-term interest in the renewable energy environment!

Project Name	Fully Indexed Price (ZAR/MWh)	Contracted Capacity (MW)	Location (Province)	Local Municipality
Coleskop WEF	R601.17	140	Eastern Cape	Inxuba Yethemba
Wolf Wind Farm	R617.70	84	Eastern Cape	Dr Beyers Naude
Sannaspos Solar PV Project	R479.00	75	Free State	Mangaung
Grootspruit Solar PV Project	R476.50	75	Free State	Matjhabeng
Kentani Solar Facility	R374.79	75	Free State	Tokologo
Klipfontein Solar Facility	R374.79	75	Free State	Tokologo
Klipfontein 2 Solar Facility	R374.79	75	Free State	Tokologo
Leliehoek Solar Facility	R374.79	75	Free State	Tokologo
Braklaagte Solar Facility	R374.79	75	Free State	Tokologo
Sonoblomo Solar Facility	R374.79	75	Free State	Tokologo
Waihoek Wind Facility	R529.78	140	KwaZulu-Natal	eMadlangeni
Du Plessis Dam Solar PV 1	R475.45	75	Northern Cape	Emthanjeni
Dwarsrug Wind Facility	R344.25	124	Northern Cape	Hantam
Outeniqua Wind Facility	R400.00	140	Northern Cape	Matieland



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THANK YOU

CLAUDE COGILL

PROJECT MANAGER – SARETEC

