

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician			SAQA ID: 91761		
Learning Area 16: Understand and apply basic renewable energy technologies in electrical installations			Total Hours:		56
Learning Project 1: Understand basic renewable energy technologies and their benefits			Total Hours:		8
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		<ul style="list-style-type: none">• Phase 2 completed• LA 13 (LP1 – 3)			
Learning project description: Apprentices learn to explain the advantages, disadvantages and costs related to the different types of renewable energy technologies.					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content (Exposure to be given)	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-None	KM-07 (KT01 02, 03, 04, 05, 06 KM-08 (KT01) KM-09 (KT01)	WM-None		
Planning/ Preparation	<p><u>Provide access to (Given):</u> Case study scenarios requiring renewable energy technologies, materials and equipment as identified in last column;</p> <p><u>Apprentices must be able to do/perform the following (hard and soft) skills:</u></p> <ul style="list-style-type: none">• Read and interpret the case study scenarios• Identify possible renewable energy solutions• Analyse the advantages of each solution	<p><u>Knowledge of:</u></p> <ul style="list-style-type: none">• Available technologies in renewable energy (wind, solar, geothermal, bio gas and hydro)• The advantages and disadvantages of renewable energies• Benefits of each of the technologies for the individual and the environment• Costs related to the different renewable energy technologies• Basic cost-benefit analysis around renewable energy• SANS 10142-1	<p><u>Under supervision:</u> <i>If the workplace allows for this exposure:</i></p> <ul style="list-style-type: none">• Provide apprentices with an overview of the different types of renewable energies used in the company and the cost implications of each.	Lecture, presentations DVDs, audio-visual, youtube Demonstrations (also through Suppliers)	<p><u>Print materials, electronic files, software applications incl.:</u></p> <ul style="list-style-type: none">• Training manuals for trainers and apprentices incl. multimedia software• Set of presentation aids (videos, slides) for overhead or LED/LCD projectors• Statutory requirements:• SANS 10142-Part1• Municipal by-laws• Catalogues with renewable energy technology (access through internet)
Implementation/ Execution	<ul style="list-style-type: none">• Perform a basic cost benefit calculation related to the solutions				
Evaluation/ Documentation/ Housekeeping	<ul style="list-style-type: none">• Record the appropriate solutions to given scenarios• Compare solutions to model				
<p><u>Tools, equipment and materials incl.:</u></p> <ul style="list-style-type: none">• NONE					

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	<div>answers</div> <ul style="list-style-type: none">Perform housekeeping of work station				<div>Materials:</div> <ul style="list-style-type: none">NONE <div>PPE:</div> <ul style="list-style-type: none">Safety overallSafety boots
Total	Hours: 8				
Specialisation additions					
<div>Assessment guidance</div> <ul style="list-style-type: none">Self assessmentGroup assessmentTheory test <div>Criteria for assessment:</div> <ul style="list-style-type: none">Cost benefit analysis performed correctlyRenewable energy solutions correctly identifiedThe advantages and disadvantages of each are listedAppropriate solutions are correctly recorded					