Kortright
centre for conservation

Photovoltaic Training Course

Day 1

1. **Photovoltaic Introduction**

    a) What are Photovoltaic's
    b) Applications
    c) Industry and Markets Trends

2. **Electrical and Solar Fundamentals**

    a) Energy/work/power, Electrical Terminology, Units of Measurement, Circuits
    b) Solar Radiation and Measuring Tools

3. **Photovoltaic Fundamentals**

    a) Cells, Modules, Arrays
    b) Efficiency
    c) PV cell types
    d) Module Specification

        - open circuit voltage
        - short circuit current
        - I - V curves

    e) Factors Affecting Performance

4. **PV system Tour**

    Tour of various PV systems

5. **Field Work**

    a) Measuring module specifications
    b) Testing factors affecting modules
    c) Series and parallel connections

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Day 2

1. **Site Assessment and Planning**

    a) Survey and Site Assessment Criteria
    b) Assessment tools

2. **Mounting Systems**

    a) Roof, Ground, Ballasted, pole, tracker, Building Integrated (BIPV)
    b) Roof mount systems and considerations
    c) Module and Array orientation
    d) Racking types
    e) Safety

3. **Mechanical Integration**

4. **Field Work**

    a) Site Assessment tools
    b) Component connections

Day 3

1. **System Components and Configurations**

    a) Charge controllers
    b) Combiner boxes
    c) Inverters
    d) Wiring
    e) Batteries
    f) Grounding

2. **Electrical Integration**

3. **Lab Work**

    a) Table top assembles for off grid

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Day 4

Field Work

1. Installation Practices
2. Installation of Grid Tie System

Day 5

1. System Design and Sizing
2. Building Integration
3. Code, Regulations and Safety
4. Permitting and Inspection
    a. Net metering
    b. FIT
    c. Micro Fit
5. Test