

Solarcrown Commercial

Unit 4, Sandwash Business Park, Sandwash Close
Rainford, St Helens, WA11 8LY
United Kingdom

Project Name: Larkins Farm

07/08/2023

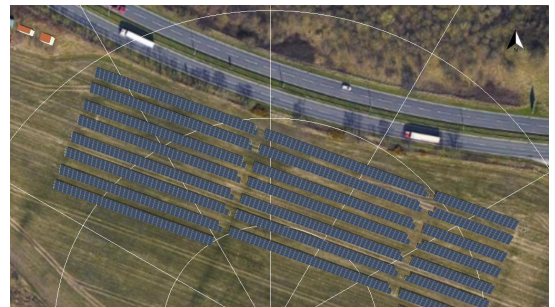
Documentation

Customer Details

Company	Time2Switch
Customer Number	
Contact person	Stephen Dean
Address	316 Blackpool Road, Fulwood, Preston, PR2 3AE
Phone	
Fax	
E-Mail	stephen.dean@time2switch.co.uk

Project Data

Project Name	Larkins Farm
Offer no.	
Project Designer	Michael Philpott
Address	Larkins Farm L34 9EN



Project Overview



Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System

Climate Data	Knowsley Business Park, GBR (1996 - 2015)
Values source	Meteonorm 8.1(i)
PV Generator Output	1424 kWp
PV Generator Surface	6,762.8 m ²
Number of PV Modules	2848
Number of Inverters	19

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

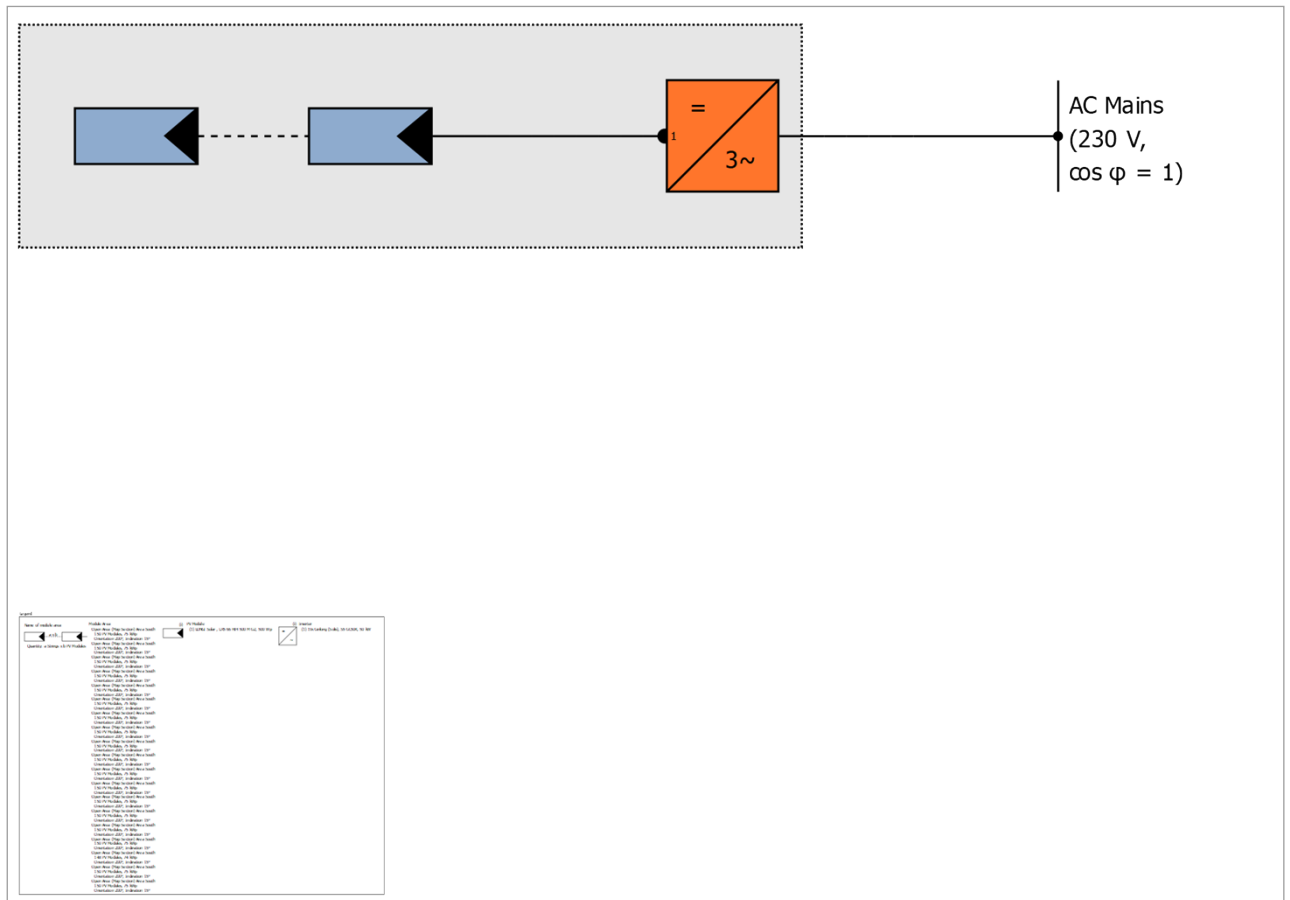


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	1,424.00 kWp
Spec. Annual Yield	902.57 kWh/kWp
Performance Ratio (PR)	81.31 %
Yield Reduction due to Shading	1.8 %
Grid Export	1,285,525 kWh/Year
Grid Export in the first year (incl. module degradation)	1,279,138 kWh/Year
Standby Consumption (Inverter)	260 kWh/Year
CO ₂ Emissions avoided	571,944 kg / year

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SOL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

Set-up of the System

Overview

System Data

Type of System	3D, Grid-connected PV System
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Climate Data

Location	Knowsley Business Park, GBR (1996 - 2015)
Values source	Meteonorm 8.1(i)
Resolution of the data	1 h
Simulation models used:	
- Diffuse Irradiation onto Horizontal Plane	Hofmann
- Irradiance onto tilted surface	Hay & Davies

Module Areas

1. Module Area - Open Area (Map Section)-Area South

PV Generator, 1. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

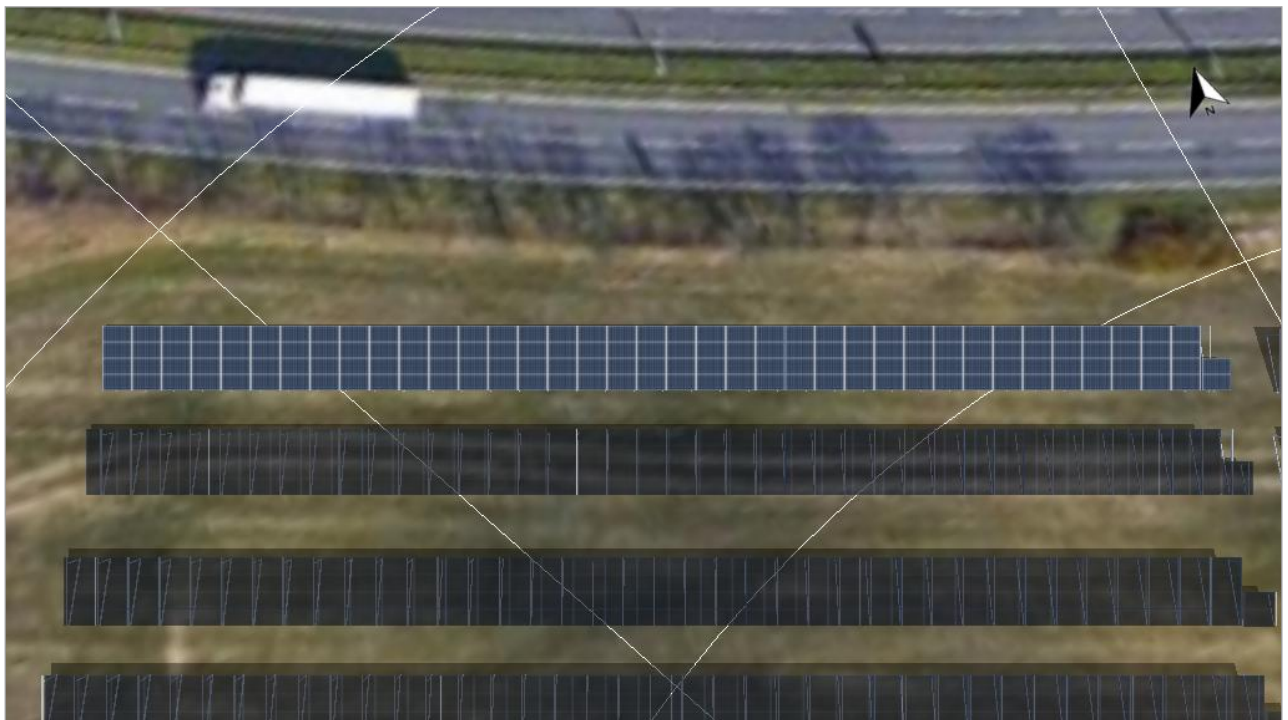


Figure: 1. Module Area - Open Area (Map Section)-Area South

2. Module Area - Open Area (Map Section)-Area South

PV Generator, 2. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²



Figure: 2. Module Area - Open Area (Map Section)-Area South

3. Module Area - Open Area (Map Section)-Area South

PV Generator, 3. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

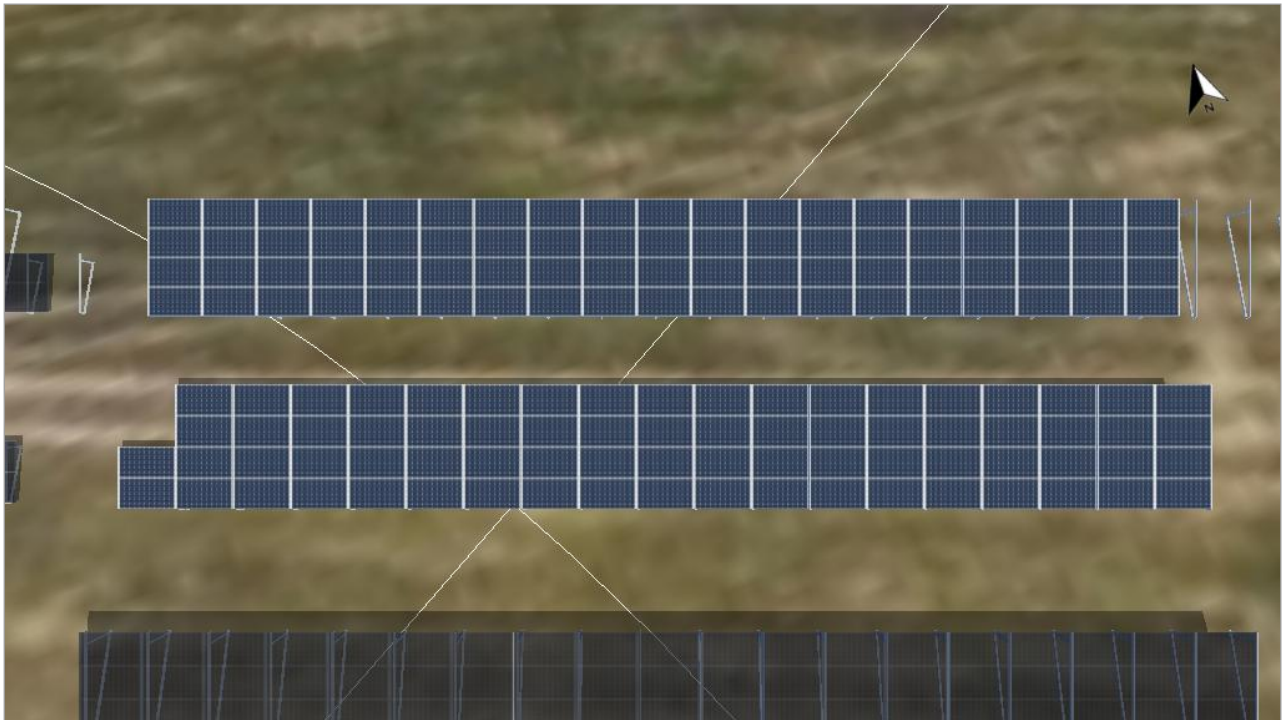


Figure: 3. Module Area - Open Area (Map Section)-Area South

4. Module Area - Open Area (Map Section)-Area South

PV Generator, 4. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

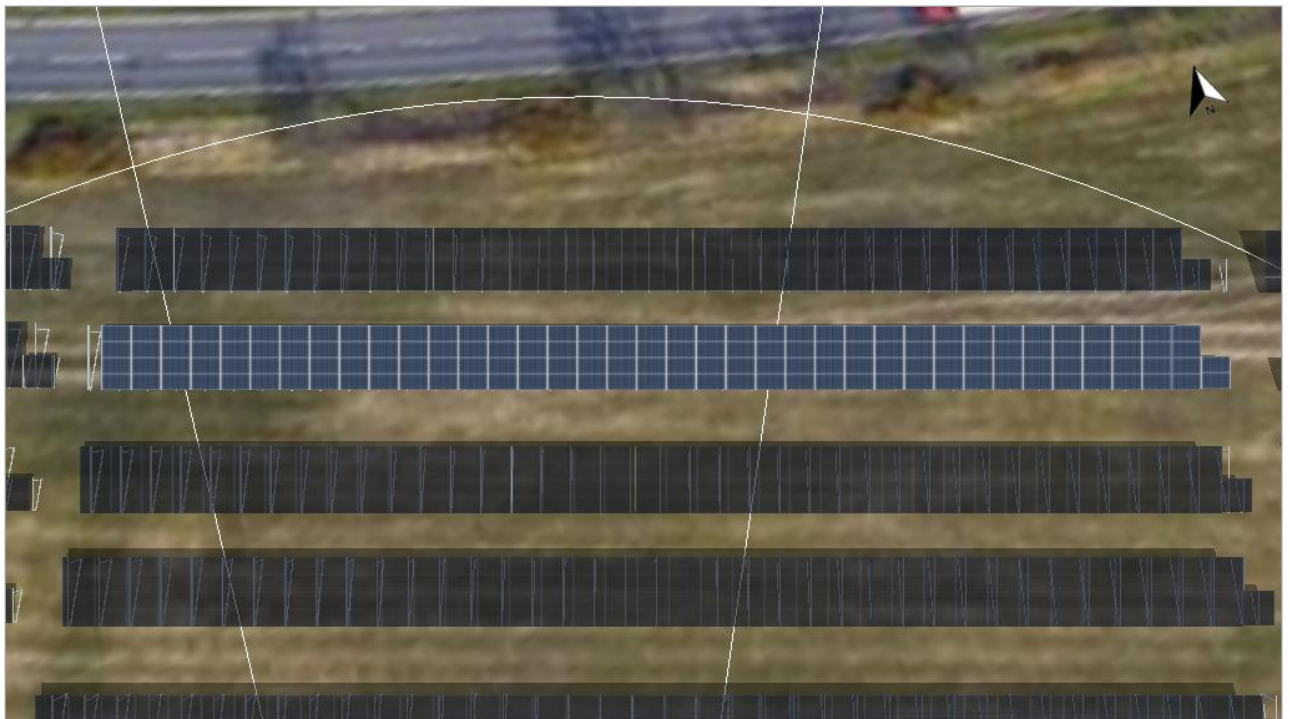


Figure: 4. Module Area - Open Area (Map Section)-Area South

5. Module Area - Open Area (Map Section)-Area South

PV Generator, 5. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²



Figure: 5. Module Area - Open Area (Map Section)-Area South

6. Module Area - Open Area (Map Section)-Area South

PV Generator, 6. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

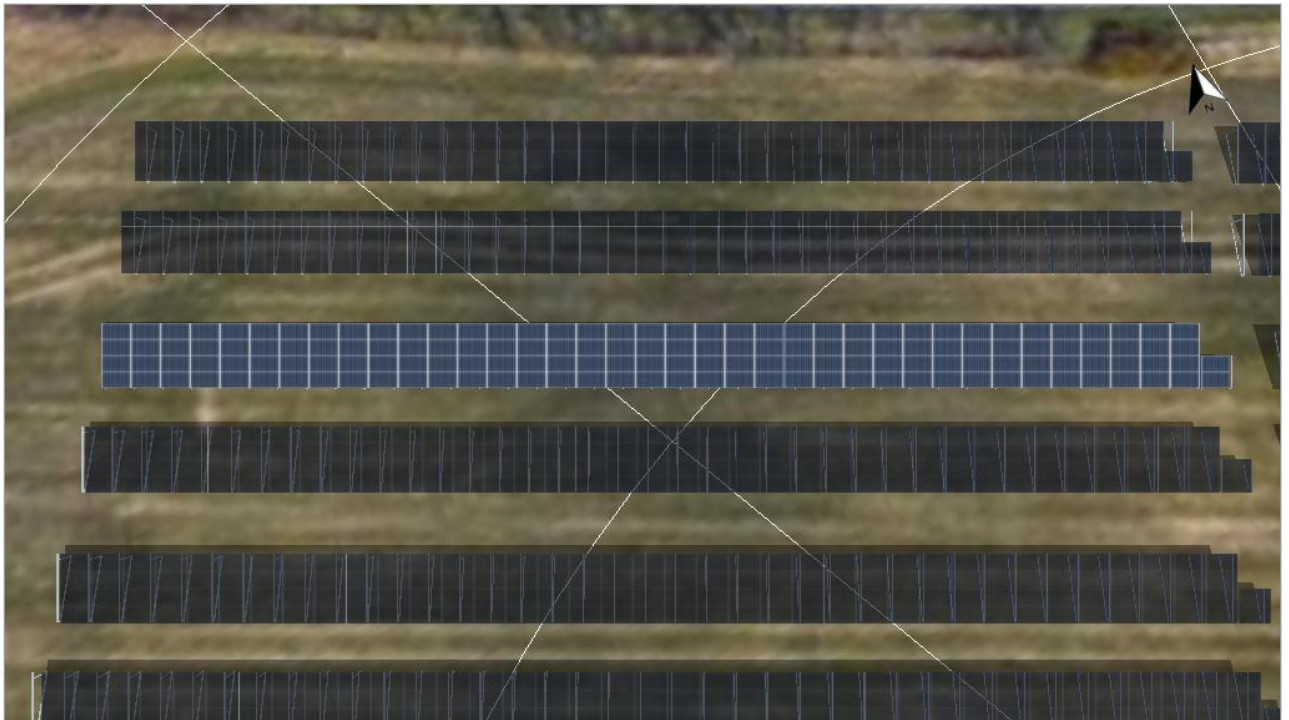


Figure: 6. Module Area - Open Area (Map Section)-Area South

7. Module Area - Open Area (Map Section)-Area South

PV Generator, 7. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

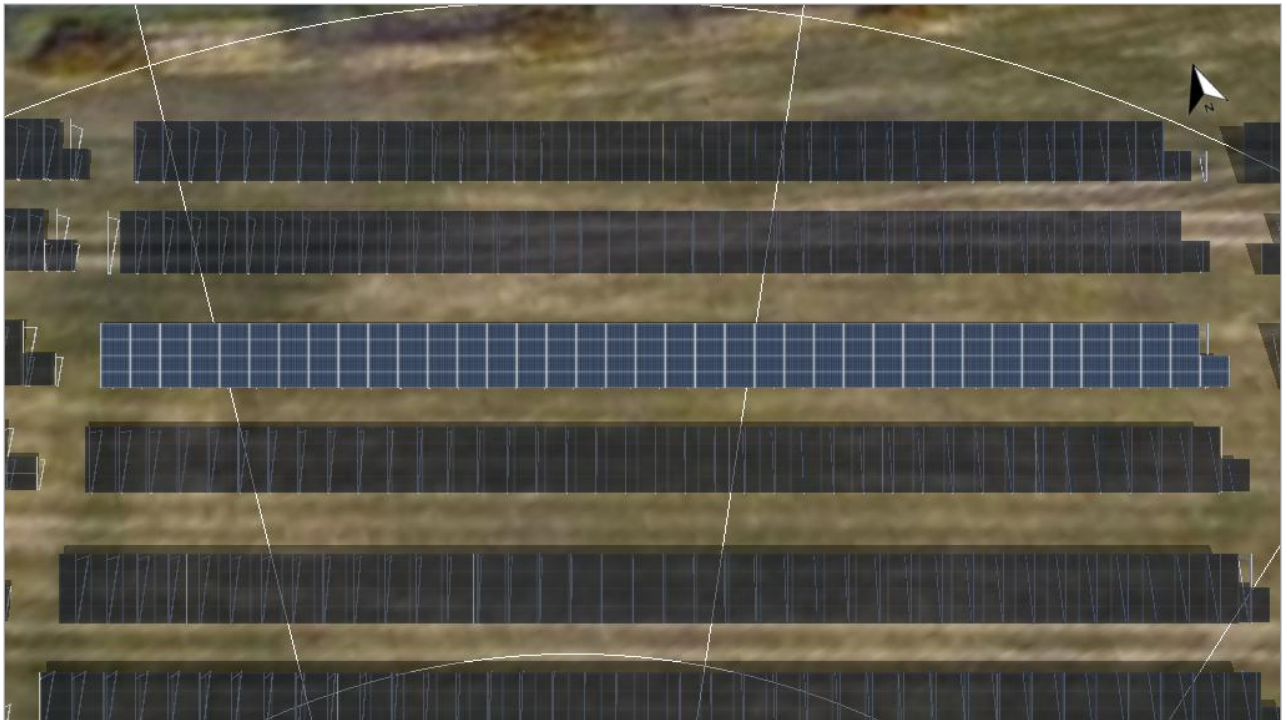


Figure: 7. Module Area - Open Area (Map Section)-Area South

8. Module Area - Open Area (Map Section)-Area South

PV Generator, 8. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

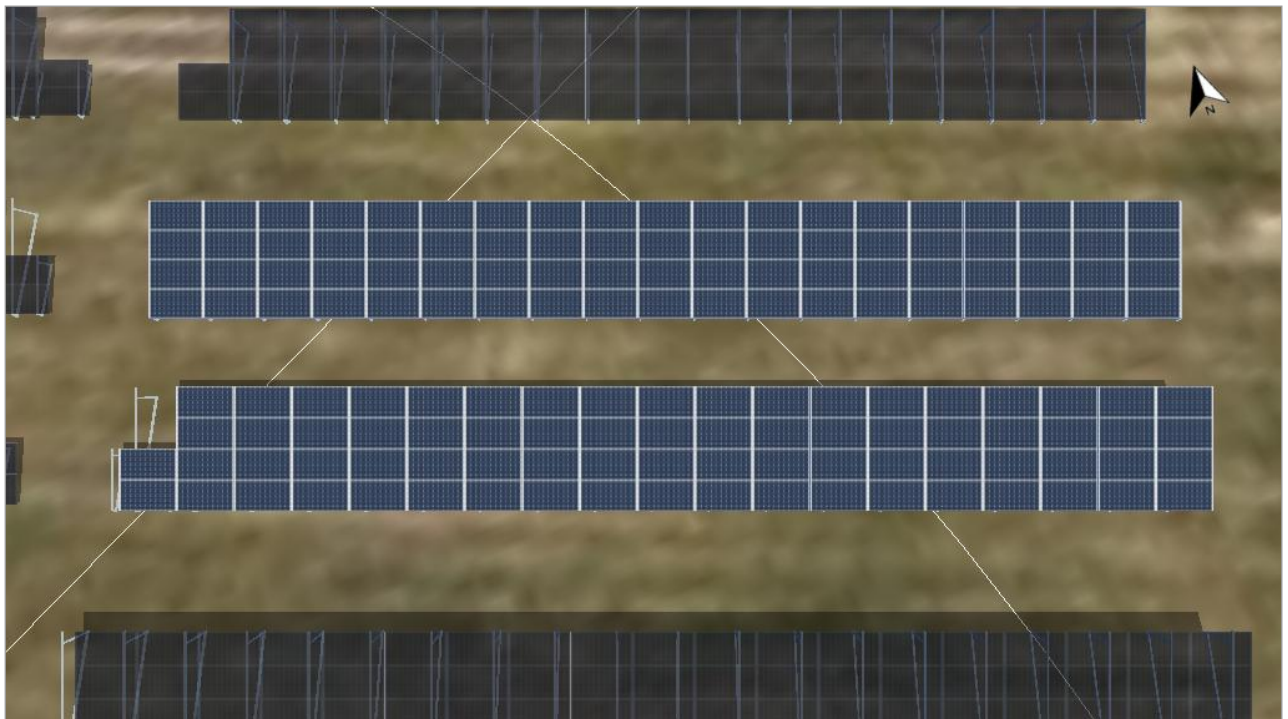


Figure: 8. Module Area - Open Area (Map Section)-Area South

9. Module Area - Open Area (Map Section)-Area South

PV Generator, 9. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

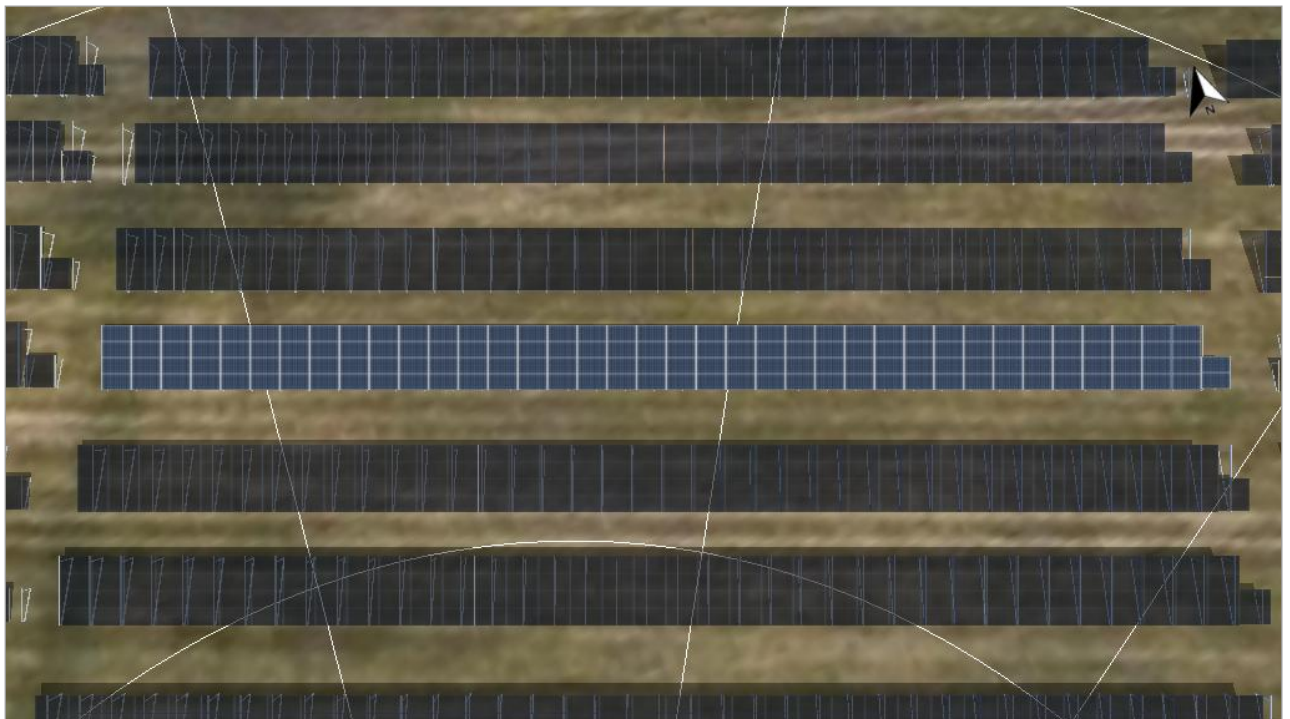


Figure: 9. Module Area - Open Area (Map Section)-Area South

10. Module Area - Open Area (Map Section)-Area South

PV Generator, 10. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

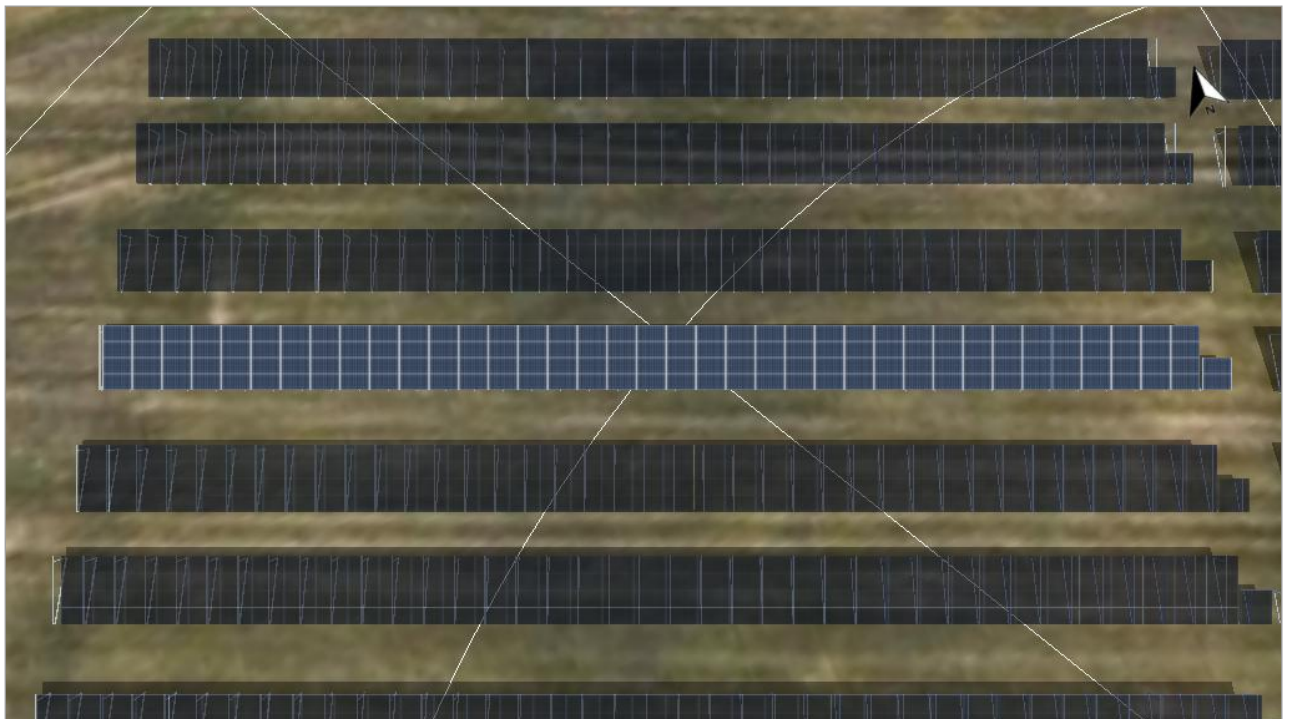


Figure: 10. Module Area - Open Area (Map Section)-Area South

11. Module Area - Open Area (Map Section)-Area South

PV Generator, 11. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

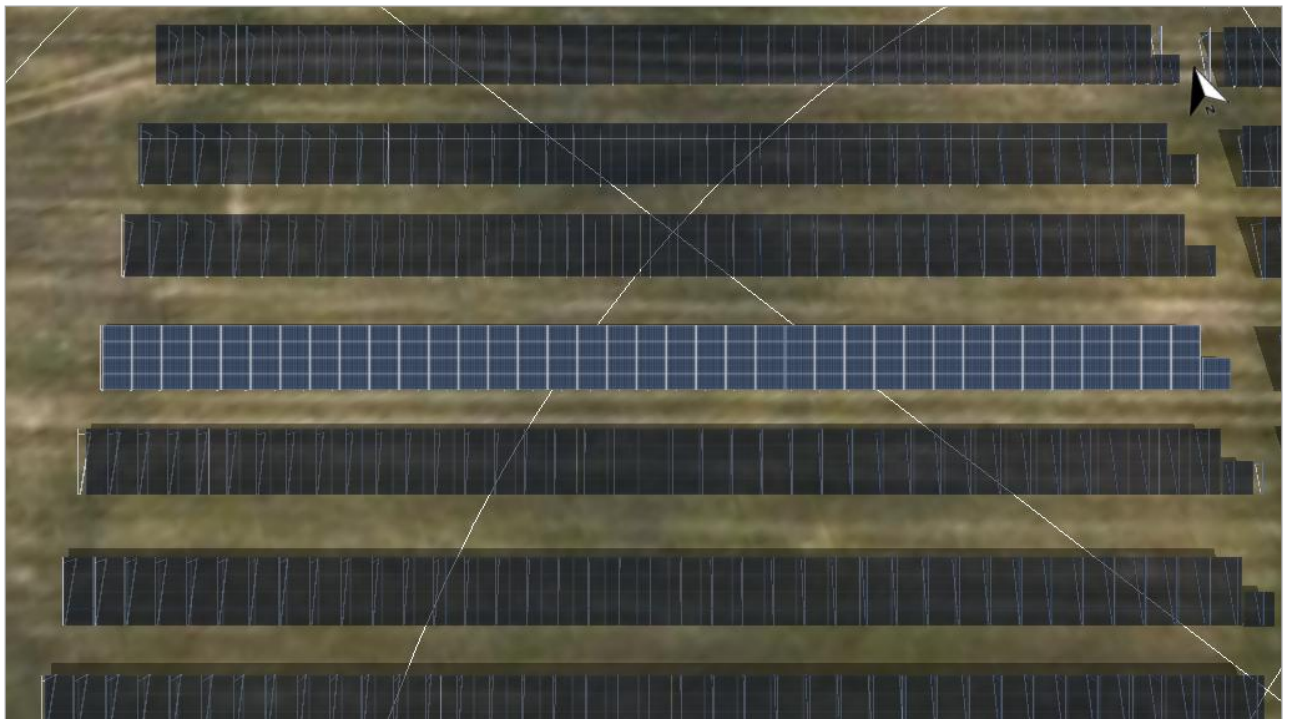


Figure: 11. Module Area - Open Area (Map Section)-Area South

12. Module Area - Open Area (Map Section)-Area South

PV Generator, 12. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²



Figure: 12. Module Area - Open Area (Map Section)-Area South

13. Module Area - Open Area (Map Section)-Area South

PV Generator, 13. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

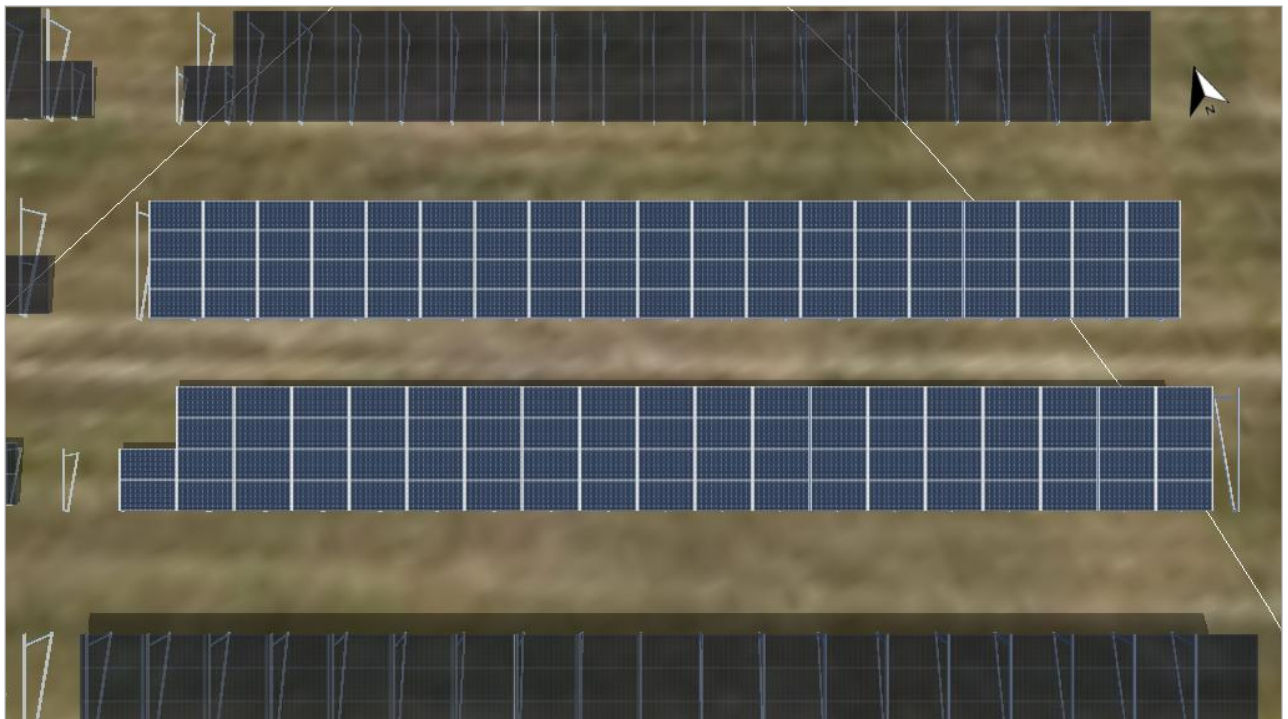


Figure: 13. Module Area - Open Area (Map Section)-Area South

14. Module Area - Open Area (Map Section)-Area South

PV Generator, 14. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

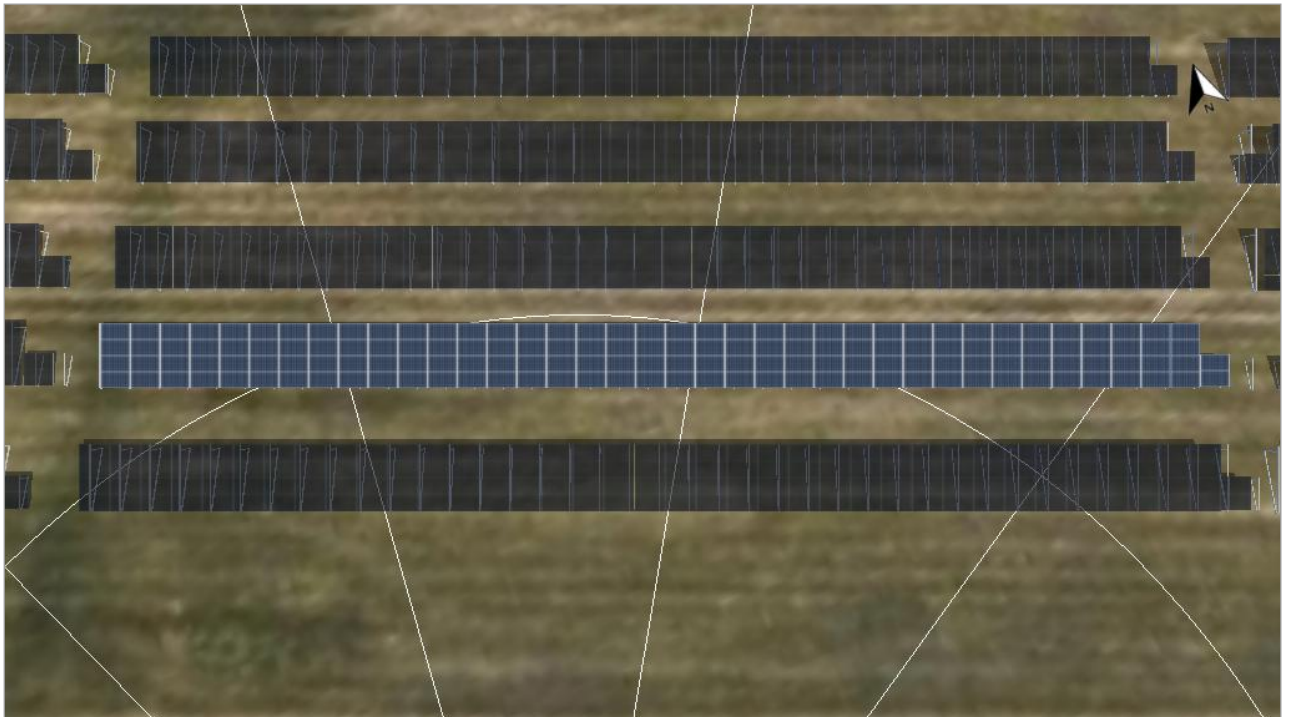


Figure: 14. Module Area - Open Area (Map Section)-Area South

15. Module Area - Open Area (Map Section)-Area South

PV Generator, 15. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

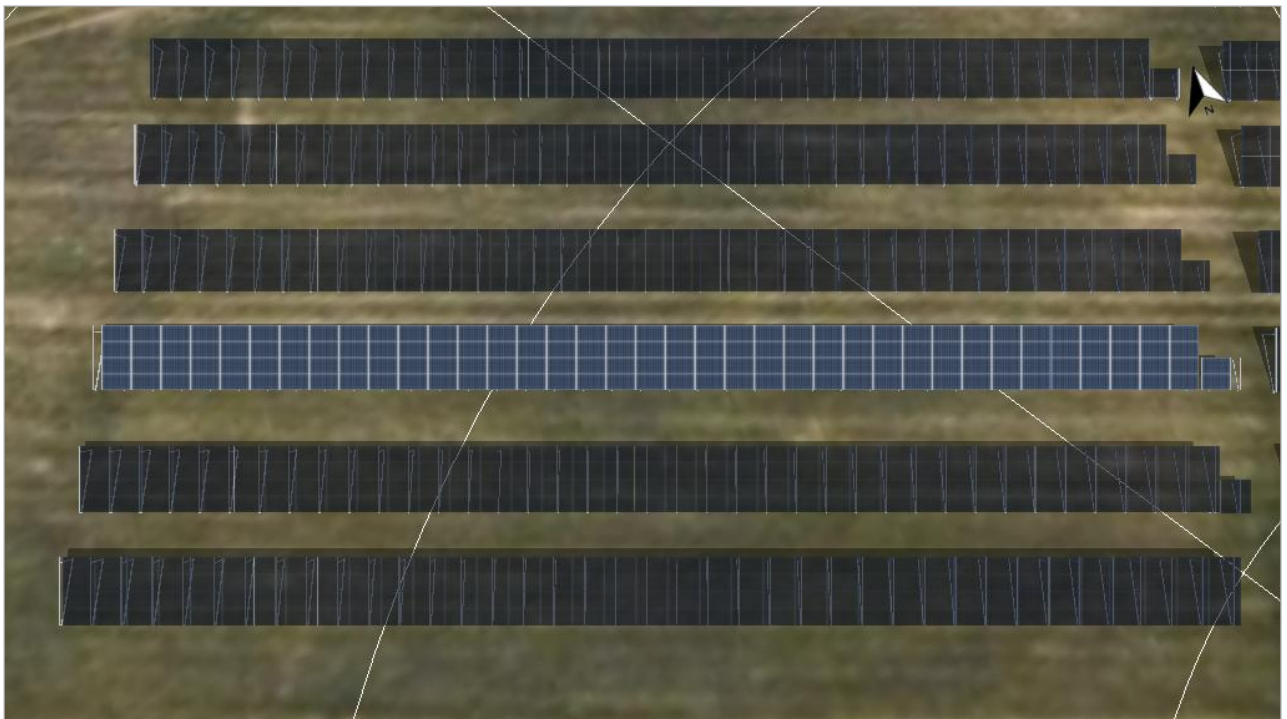


Figure: 15. Module Area - Open Area (Map Section)-Area South

16. Module Area - Open Area (Map Section)-Area South

PV Generator, 16. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

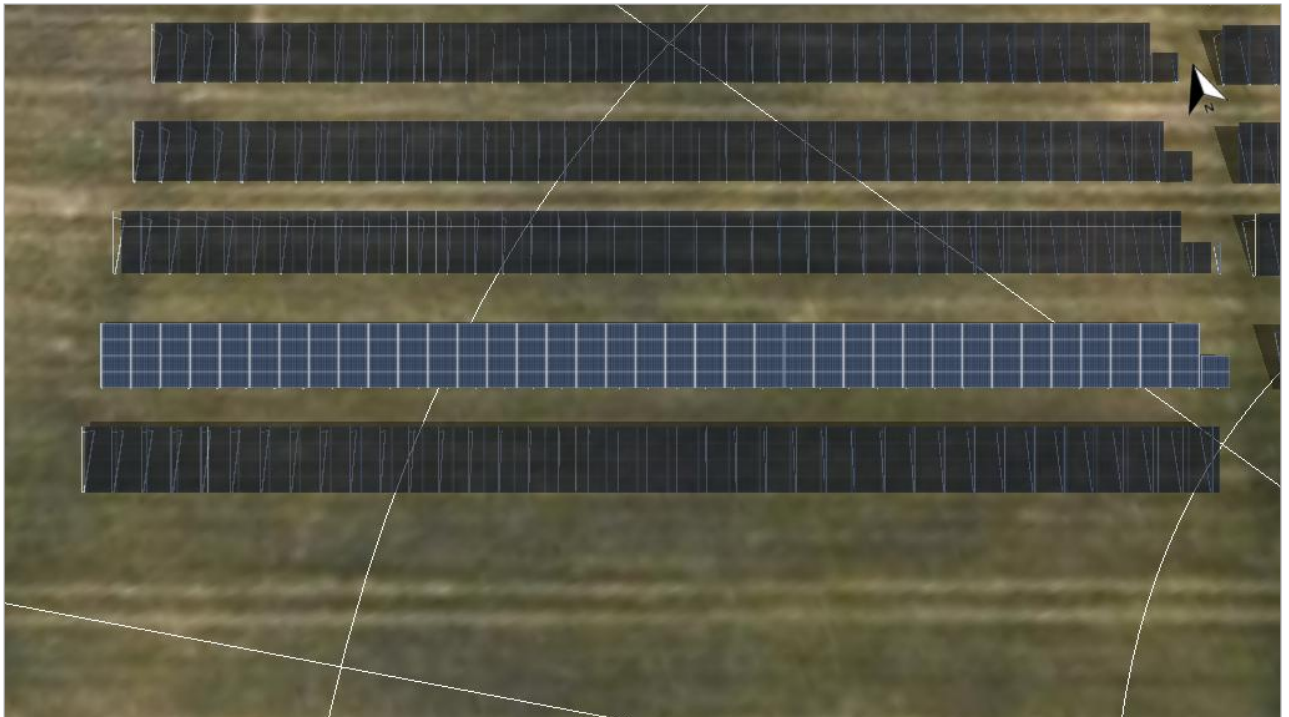


Figure: 16. Module Area - Open Area (Map Section)-Area South

17. Module Area - Open Area (Map Section)-Area South

PV Generator, 17. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	148 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	351.4 m²

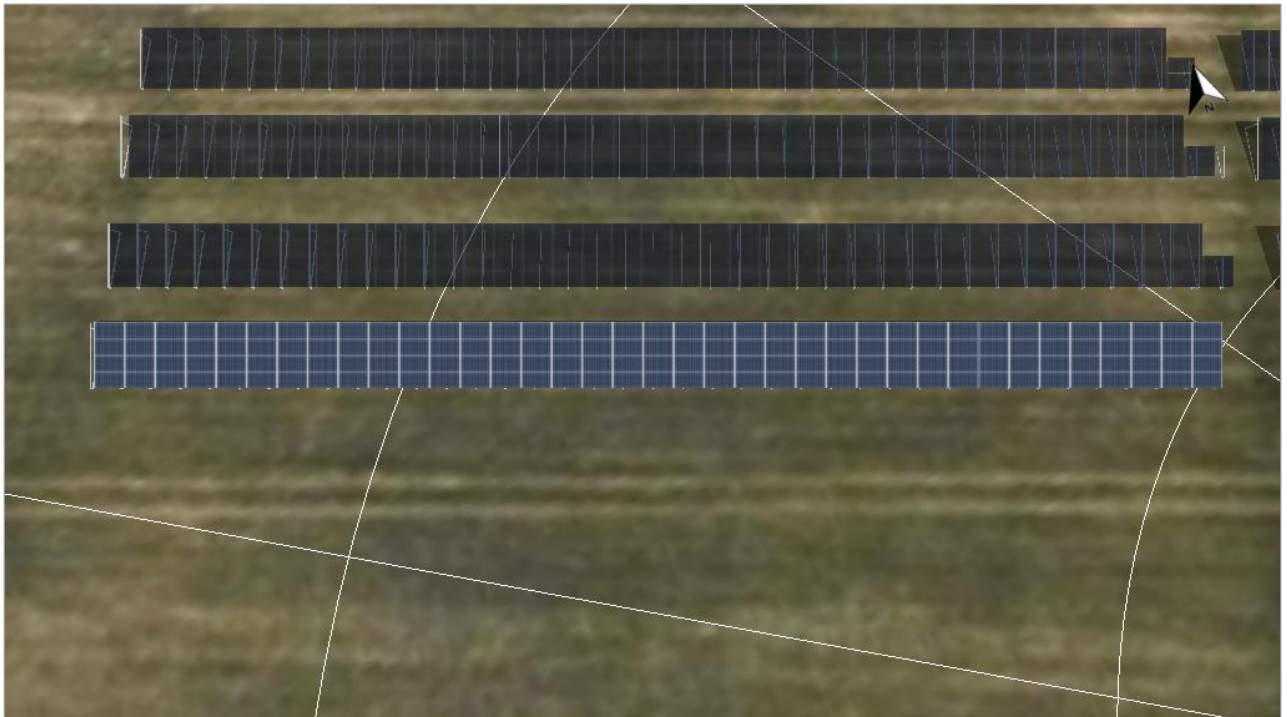


Figure: 17. Module Area - Open Area (Map Section)-Area South

18. Module Area - Open Area (Map Section)-Area South

PV Generator, 18. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m ²

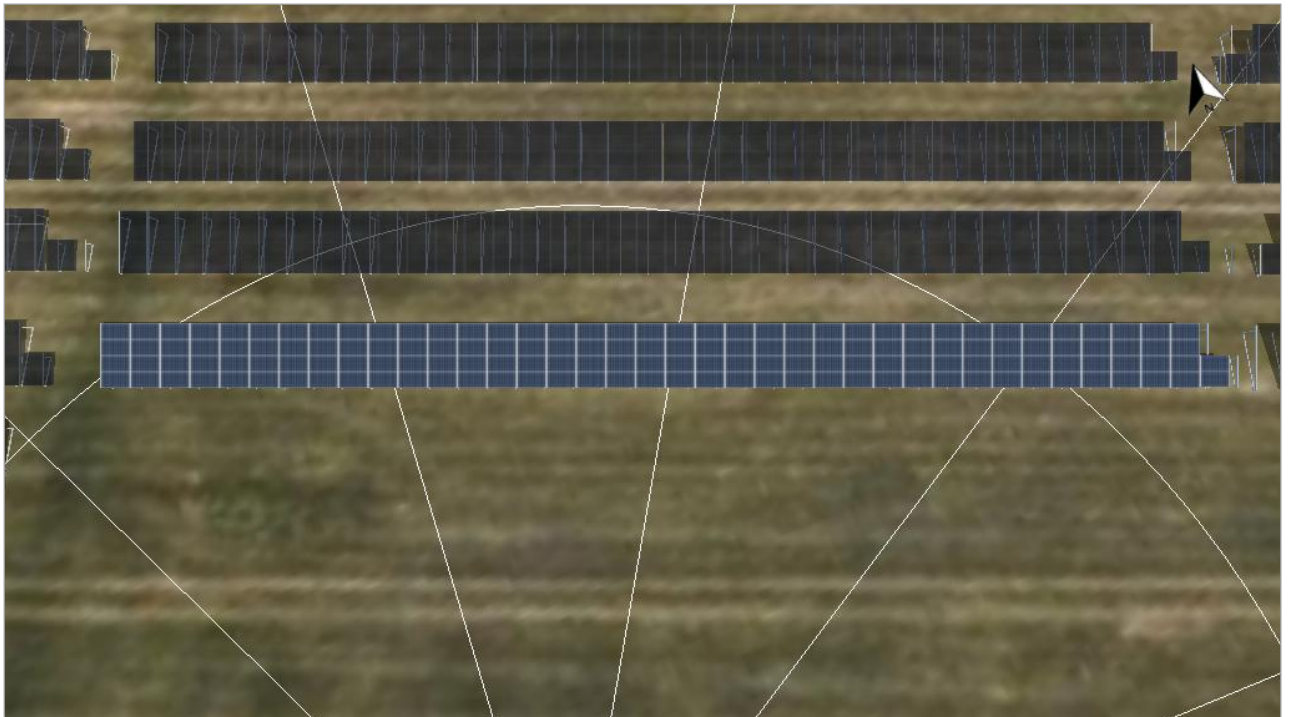


Figure: 18. Module Area - Open Area (Map Section)-Area South

19. Module Area - Open Area (Map Section)-Area South

PV Generator, 19. Module Area - Open Area (Map Section)-Area South

Name	Open Area (Map Section)-Area South
PV Modules	150 x LR5-66 HIH 500 M G2 (v1)
Manufacturer	LONGI Solar
Inclination	15 °
Orientation	South 200 °
Installation Type	Mounted - Open Space
PV Generator Surface	356.2 m²

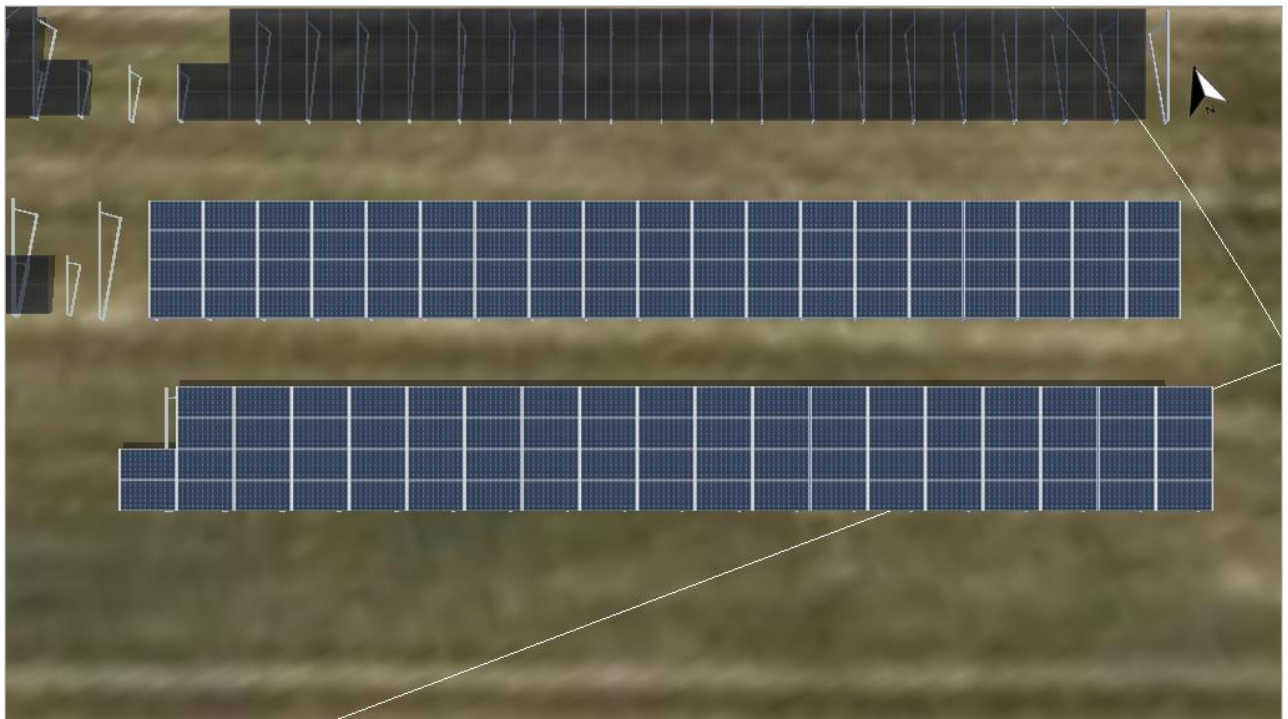


Figure: 19. Module Area - Open Area (Map Section)-Area South

Inverter configuration

Configuration 1

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Configuration 2

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 3

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 4

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 5

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Configuration 6

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 7

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 8

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 9

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Configuration 10

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 11

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 12

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 13

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Configuration 14

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 15

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 16

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 17

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	148 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 14

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Configuration 18

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

Configuration 19

Module Area	Open Area (Map Section)-Area South
Inverter 1	
Model	S5-GC50K (v2)
Manufacturer	Ginlong (Solis)
Quantity	1
Sizing Factor	150 %
Configuration	MPP 1: 2 x 15
	MPP 2: 2 x 15
	MPP 3: 2 x 15
	MPP 4: 2 x 15
	MPP 5: 2 x 15

AC Mains

AC Mains

Number of Phases	3
Mains voltage between phase and neutral	230 V
Displacement Power Factor (cos phi)	+/- 1

Simulation Results

Results Total System

PV System

PV Generator Output	1,424.00 kWp
Spec. Annual Yield	902.57 kWh/kWp
Performance Ratio (PR)	81.31 %
Yield Reduction due to Shading	1.8 %
Grid Export	1,285,525 kWh/Year
Grid Export in the first year (incl. module degradation)	1,279,138 kWh/Year
Standby Consumption (Inverter)	260 kWh/Year
CO ₂ Emissions avoided	571,944 kg / year

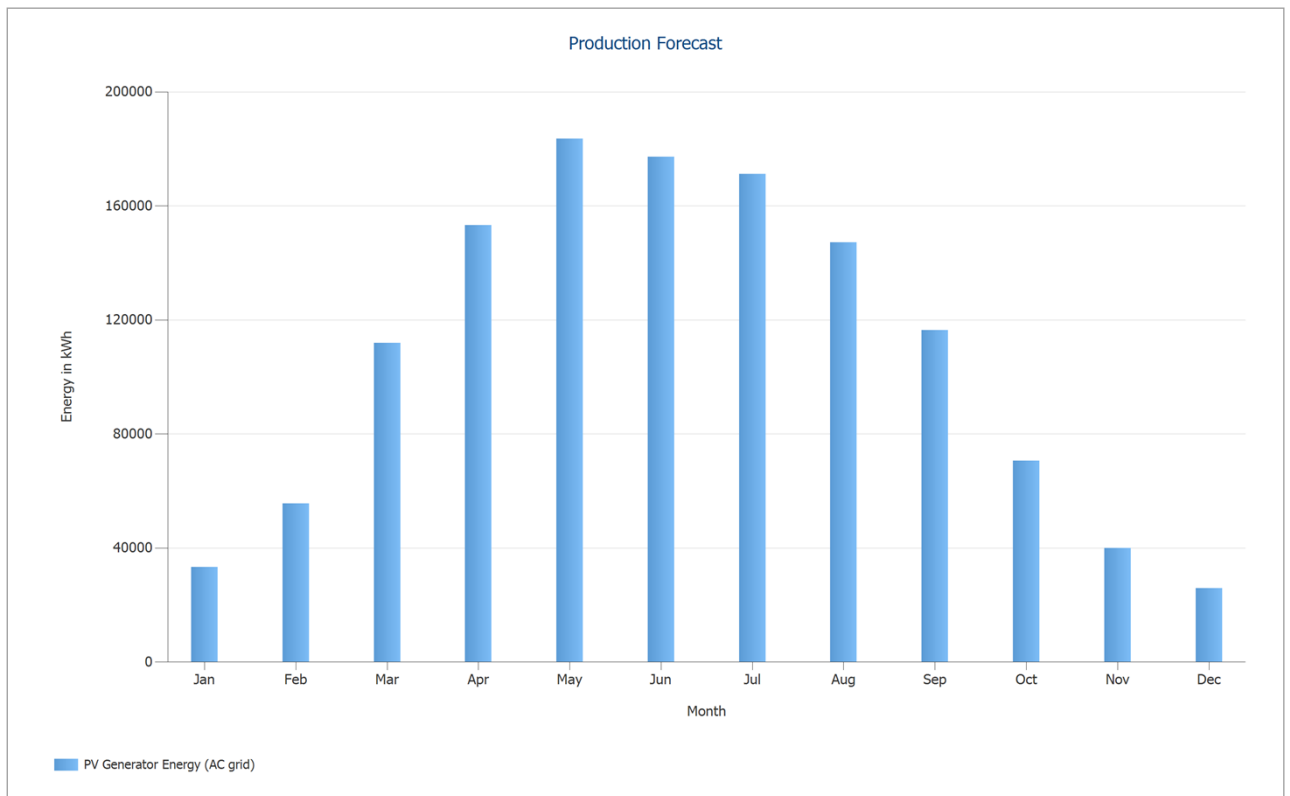


Figure: Production Forecast

Results per Module Area

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.78 %
PV Generator Energy (AC grid)	67247.97 kWh/Year
Spec. Annual Yield	896.64 kWh/kWp

Larkins Farm

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Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.97 %
PV Generator Energy (AC grid)	67404.99 kWh/Year
Spec. Annual Yield	898.73 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.91 %
PV Generator Energy (AC grid)	67353.88 kWh/Year
Spec. Annual Yield	898.05 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.49 %
PV Generator Energy (AC grid)	67841.44 kWh/Year
Spec. Annual Yield	904.55 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.67 %
PV Generator Energy (AC grid)	67990.87 kWh/Year
Spec. Annual Yield	906.54 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.82 %
PV Generator Energy (AC grid)	67282.69 kWh/Year
Spec. Annual Yield	897.10 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.72 %
PV Generator Energy (AC grid)	67197.78 kWh/Year
Spec. Annual Yield	895.97 kWh/kWp

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.90 %
PV Generator Energy (AC grid)	67346.54 kWh/Year
Spec. Annual Yield	897.95 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.50 %
PV Generator Energy (AC grid)	67851.69 kWh/Year
Spec. Annual Yield	904.69 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.67 %
PV Generator Energy (AC grid)	67988.22 kWh/Year
Spec. Annual Yield	906.51 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.81 %
PV Generator Energy (AC grid)	67272.59 kWh/Year
Spec. Annual Yield	896.97 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.78 %
PV Generator Energy (AC grid)	67249.45 kWh/Year
Spec. Annual Yield	896.66 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.95 %
PV Generator Energy (AC grid)	67389.18 kWh/Year
Spec. Annual Yield	898.52 kWh/kWp

Larkins Farm

Project Designer: Michael Philpott

Client: Time2Switch, Stephen Dean

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.56 %
PV Generator Energy (AC grid)	67900.48 kWh/Year
Spec. Annual Yield	905.34 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.81 %
PV Generator Energy (AC grid)	68104.15 kWh/Year
Spec. Annual Yield	908.06 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	80.77 %
PV Generator Energy (AC grid)	67239.54 kWh/Year
Spec. Annual Yield	896.53 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	74.00 kWp
PV Generator Surface	351.44 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	82.91 %
PV Generator Energy (AC grid)	68105.33 kWh/Year
Spec. Annual Yield	920.34 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	82.72 %
PV Generator Energy (AC grid)	68867.28 kWh/Year
Spec. Annual Yield	918.23 kWh/kWp

Open Area (Map Section)-Area South

PV Generator Output	75.00 kWp
PV Generator Surface	356.19 m ²
Global Radiation at the Module	1105.70 kWh/m ²
Global Radiation on Module without reflection	1109.84 kWh/m ²
Performance Ratio (PR)	81.55 %
PV Generator Energy (AC grid)	67892.12 kWh/Year
Spec. Annual Yield	905.23 kWh/kWp

Data Sheets

PV Module Data Sheet

PV Module: LR5-66 HIH 500 M G2 (v1)

Manufacturer	LONGI Solar
Available	Yes

Electrical Data

Cell Type	Si monocrystalline
Half-cell module	Yes
Cell Count	66
Number of Bypass Diodes	3
Loss voltage per bypass diode	1 V
Integrated power optimizer	No
Only Transformer Inverters suitable	No

I/V Characteristics at STC

MPP Voltage	38.38 V
MPP Current	13.03 A
Open Circuit Voltage	45.55 V
Short-Circuit Current	13.9 A
Increase open circuit voltage before stabilisation	0 %
Nominal output	500 W
Fill Factor	78.99 %
Efficiency	21.06 %

I/V Part Load Characteristics

Values source	Manufacturer/user-created
Irradiance	200 W/m ²
Voltage in MPP at Part Load	36.847 V
Current in MPP at Part Load	2.652 A
Open Circuit Voltage (Part Load)	42.689 V
Short Circuit Current at Part Load	2.827 A

Additional Parameters

Temperature Coefficient of Voc	-129.4 mV/K
Temperature Coefficient of Isc	6.9 mA/K
Temperature Coefficient of Pmpp	-0.35 %/K
Incident Angle Modifier (IAM)	100 %
Maximum System Voltage	1500 V

Mechanical Data

Width	1134 mm
Height	2094 mm
Depth	35 mm
Frame Width	11 mm
Weight	25.3 kg

Inverter Data Sheet

Inverter: S5-GC50K (v2)

Manufacturer	Ginlong (Solis)
Available	Yes
Electrical data - DC	
DC nominal output	50 kW
Max. DC Power	104 kW
Nom. DC Voltage	600 V
Max. Input Voltage	1100 V
Max. Input Current	160 A
Max. short circuit current	200 A
Number of DC Inlets	10
Electrical data - AC	
AC Power Rating	50 kW
Max. AC Power	55 kVA
Nom. AC Voltage	230 V
Number of Phases	3
With Transformer	No
Electrical data - other	
Change in Efficiency when Input Voltage deviates from Rated Voltage	0.2 %/100V
Min. Feed-in Power	5 W
Standby Consumption	10 W
Night Consumption	1 W
MPP Tracker	
Output Range < 20% of Power Rating	99.6 %
Output Range > 20% of Power Rating	99.9 %
Count of MPP Trackers	5
MPP Tracker 1-5	
Max. Input Current	32 A
Max. short circuit current	32 A
Max. Input Power	20.8 kW
Min. MPP Voltage	180 V
Max. MPP Voltage	1000 V