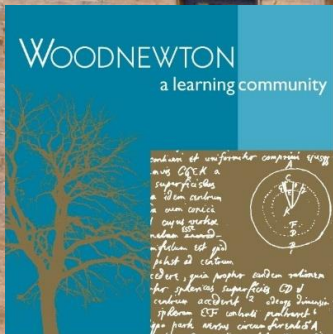# Harborough Solar Projects

Annual Output Summary

06SEP20/DJR/v1.1 (FINAL)

HARBOROUGH ENERGY

Harborough Energy is a not for profit cooperative formed in 2014 via Sustainable Harborough

WOODNEWTON
a learning community

Archway
HEALTH HUB

NBJ

SUSTAINABLE HARBOROUGH

OUR PURPOSE

• To engage local organisations and businesses in the opportunities offered by installing low carbon systems like solar panels, battery storage, biomass and heat pumps to generate clean energy

• To show how the local community can work together to generate its own clean energy, improve energy efficiency in homes and facilitate access by all to affordable clean energy

• To generate greater community benefit through our wider energy related work, such as reducing energy costs and improving the carbon footprint of local businesses, schools and public facilities
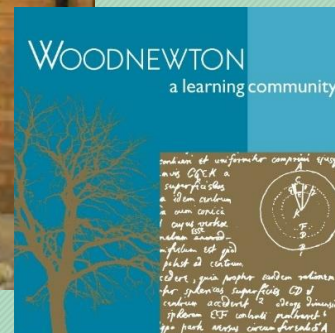
OUR CURRENT PROJECTS
Harborough Solar - Project 1 (installed mid 2016)

Links to our case studies for **Woodnewton** and **Archway**

Woodnewton Academy - Corby
56.2 kW installation across 4 roofs

Archway House - Harborough
10.3 kW installation

OUR CURRENT PROJECTS
Harborough Solar – Project 2 (installed end 2018)

Link to our news article about **NBJ**

NBJ Joinery – Sibertoft Road, Husbands Bosworth
102.6 kW ground mounted installation

Harborough Solar - Summary Solar PV Output

Our 170 kW of community owned installations at Woodnewton, Archway and now NBJ have generated 393,000 kWh* of clean electricity since our first installations in AUG 2016 - saving 176 Tonnes of CO2*

HARBOROUGH ENERGY

* As at 31JUL20 - based on data from **The Energy Meter Information Gateway (eMIG)**

Host Site Output (Capacity / Started)	Woodnewton Roof 1&2 (20kWp 23AUG16)	Woodnewton Roof 3 (20kWp 31AUG16)	Woodnewton Roof 4 (17kWp 31AUG16)	Archway House (10kWp 23SEP16)	Project 1 Total for Year (kWh)	Capacity Factor % (kWh Output / kWp Cap Per An)	Project 2 Total for Year (kWh) NBJ (103kWp 15DEC18)	Capacity Factor % (kWh Output / kWp Cap Per An)	Rolling Total Output (kWh)
AUG16-JUL17	14,945	15,764	12,682	6,897	50,288	9%	-	-	50,288
AUG17-JUL18	16,960	18,284	14,688	8,821	58,753	10%	-	-	109,041
AUG18-JUL19	16,813	18,068	14,501	8,763	58,145	10%	56,951	11%	224,137
AUG19-JUL20	17,528	18,570	15,565	9,206	60,869	10%	108,116	12%	393,122

Notes - 'Capacity Factor' indicates relative efficiency independent of size (avg. was 10.8% for UK solar PV in 2019) - Project 1 output approx. 11 mths of 16/17; Project 2 output approx. 7 mths in 18/19.
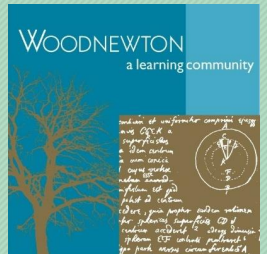
HOW ARE WE PERFORMING?

WOODNEWTON *ROOF 1&2* – 31JUL20

Last reading received at	66,277.86 kWh	(29,779.97 kg CO_2)
	Jul 31, 2020 3:58 PM	
Last 24 hours	0.00 kWh	0.00 kg CO_2
Last Week	179.39 kWh	80.60 kg CO_2
Last Month	1,888.04 kWh	848.33 kg CO_2
Last Year	17,528.27 kWh	7,875.80 kg CO_2

CO_2 saving based upon 0.44932 kg CO_2 / kWh

Installation Details

SIM Enabled	
Meter ID	16079837
Installed	Aug 23, 2016
Registered on eMIG	Aug 24, 2016 8:46 AM
kW Peak	19.76 kW

HOW ARE WE PERFORMING?

WOODNEWTON *ROOF 3 – 31JUL20*

Last reading received at	70,717.91 kWh	(31,774.97 kg CO$_2$)
	Jul 31, 2020 3:57 PM	
Last 24 hours	87.23 kWh	39.19 kg CO$_2$
Last Week	605.70 kWh	272.15 kg CO$_2$
Last Month	2,473.82 kWh	1,111.54 kg CO$_2$
Last Year	18,570.16 kWh	8,343.95 kg CO$_2$

CO$_2$ saving based upon 0.44932 kg CO$_2$ / kWh
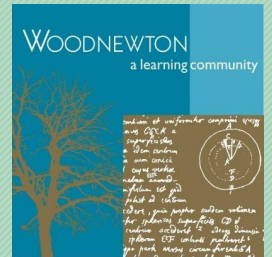
Installation Details
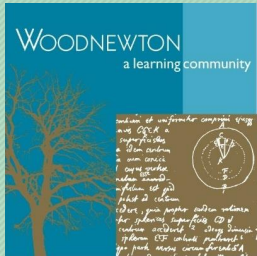
SIM Enabled

Meter ID	16038858
Installed	Aug 31, 2016
Registered on eMIG	Aug 30, 2016 12:39 PM
kW Peak	19.76 kW

HOW ARE WE PERFORMING?

WOODNEWTON *ROOF 4* – 31JUL20

HARBOROUGH ENERGY

Last reading received at	57,493.29 kWh Jul 31, 2020 3:57 PM	(25,832.88 kg CO$_2$)
Last 24 hours	70.76 kWh	31.79 kg CO$_2$
Last Week	485.10 kWh	217.97 kg CO$_2$
Last Month	1,995.28 kWh	896.52 kg CO$_2$
Last Year	15,565.51 kWh	6,993.89 kg CO$_2$

CO$_2$ saving based upon 0.44932 kg CO$_2$ / kWh

Installation Details

SIM Enabled

Meter ID	16038857
Installed	Aug 31, 2016
Registered on eMIG	Aug 30, 2016 12:37 PM
kW Peak	16.64 kW

WOODNEWTON
a learning community

HOW ARE WE PERFORMING?

ARCHWAY HOUSE – 31JUL20

HARBOROUGH ENERGY

Archway HEALTH HUB

Last reading received at	33,690.38 kWh Jul 31, 2020 3:58 PM	(15,137.76 kg CO₂)
Last 24 hours	37.70 kWh	16.94 kg CO₂
Last Week	262.39 kWh	117.90 kg CO₂
Last Month	1,091.44 kWh	490.41 kg CO₂
Last Year	9,206.32 kWh	4,136.58 kg CO₂

CO₂ saving based upon 0.44932 kg CO₂ / kWh

Installation Details

SIM Enabled

Meter ID	16079836
Installed	Sep 23, 2016
Registered on eMIG	Sep 21, 2016 2:36 PM
kW Peak	10.26 kW

HOW ARE WE PERFORMING?

NBJ – 31JUL20

Last reading received at	166,676.34 kWh (74,891.01 kg CO_2) Jul 31, 2020 4:01 PM	
Last 24 hours	492.78 kWh	221.41 kg CO_2
Last Week	3,115.50 kWh	1,399.86 kg CO_2
Last Month	13,114.97 kWh	5,892.82 kg CO_2
Last Year	108,116.25 kWh	48,578.79 kg CO_2

CO_2 saving based upon 0.44932 kg CO_2 / kWh

Installation Details

SIM Enabled

Meter ID	18065055
Installed	Dec 15, 2018
Registered on eMIG	Dec 12, 2018 3:26 PM
kW Peak	102.60 kW
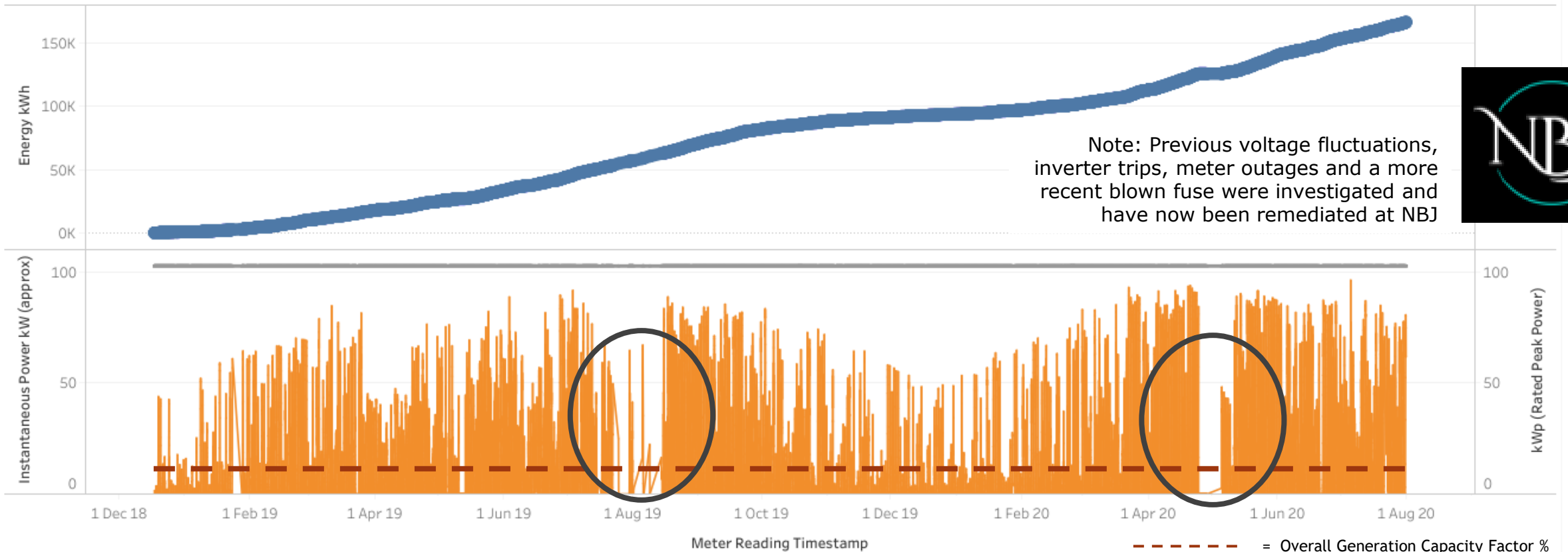
HOW ARE WE PERFORMING?
Half Hourly Capacity Factor %
(01JAN19 to 31JUL20)

HARBOROUGH ENERGY

Note: The variations in output are due to the daily sunshine levels. Very occasionally data transmission gaps may indicate equipment failure and there may be zero output, so monitoring supervision is alerted for rapid repair.
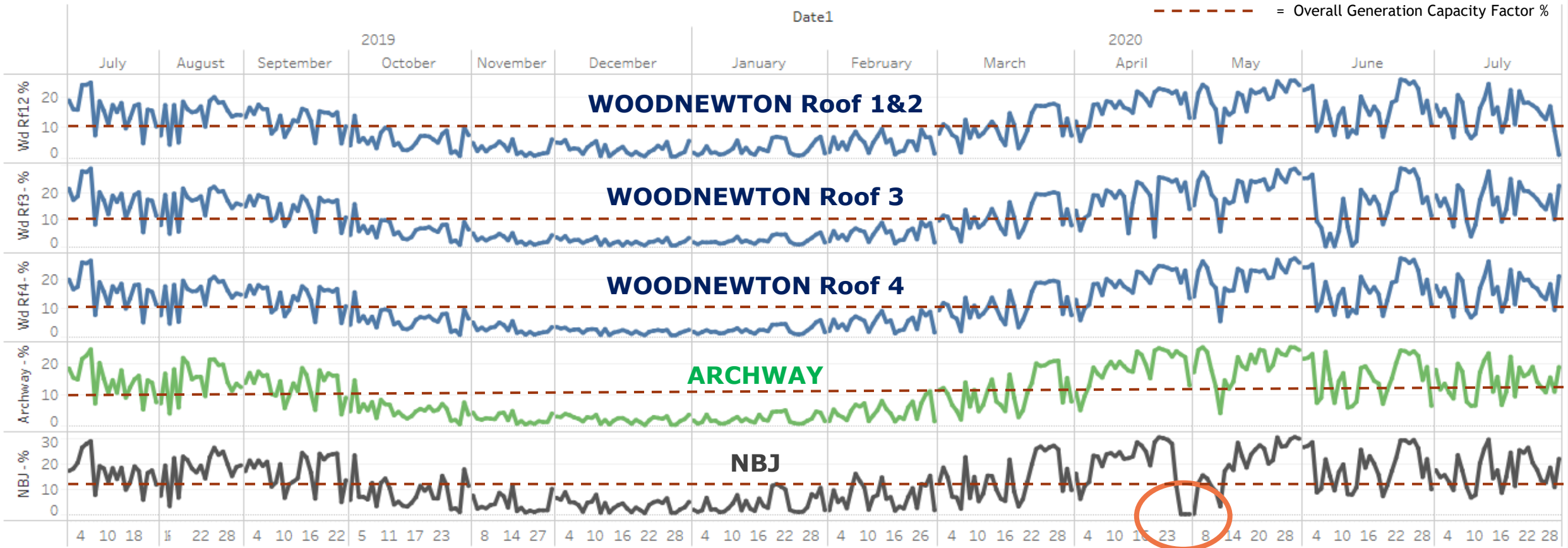
- - - - - = Overall Generation Capacity Factor %

Solar Efficiency % (Instantaneous Output kW / Rated kWp)

WOODNEWTON Roof 1&2

WOODNEWTON Roof 3

WOODNEWTON Roof 4

ARCHWAY

NBJ

Meter Readings (Half Hourly)
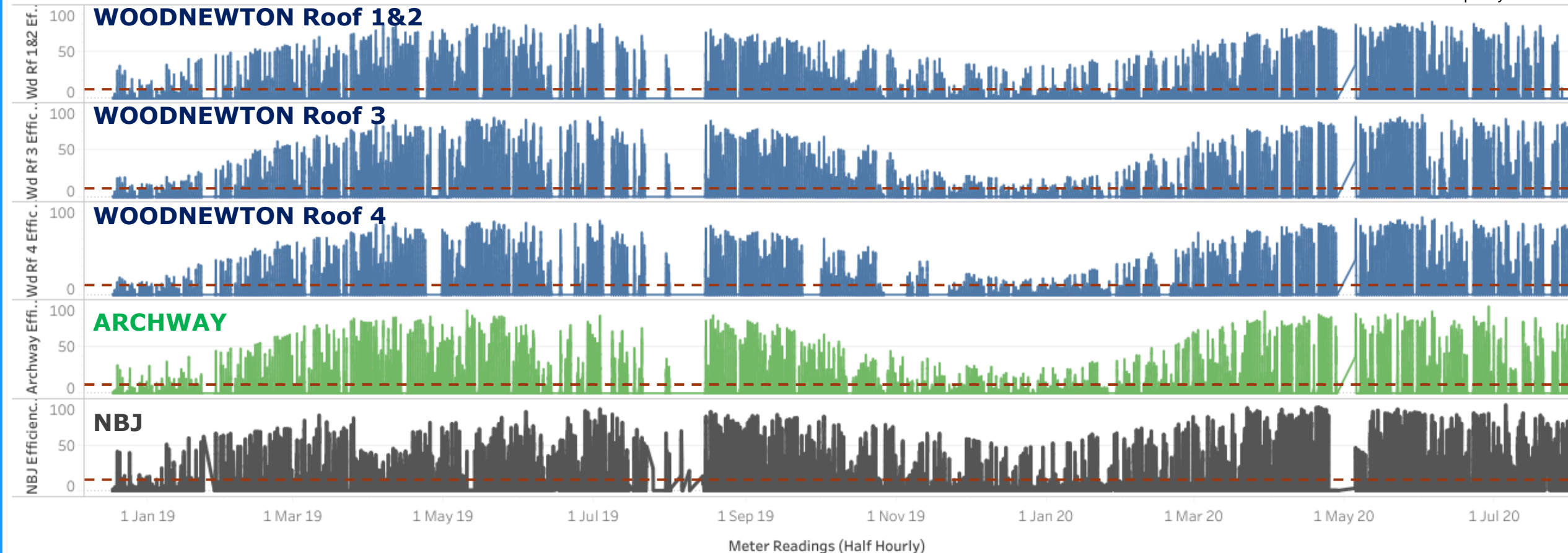
HOW ARE WE PERFORMING?

Daily Capacity Factor %
(01JUL19 to 31JUL20)

HARBOROUGH ENERGY

Generation Capacity % (Calculated Daily Output kWh / 24xRated kWp)

Note: The variations in output are due to the daily sunshine levels. Very occasionally data transmission gaps may indicate equipment failure and there may be zero output, so monitoring supervision is alerted for rapid repair.

Date1

2019   2020

– – – – – = Overall Generation Capacity Factor %

WOODNEWTON Roof 1&2

WOODNEWTON Roof 3

WOODNEWTON Roof 4

ARCHWAY

NBJ

HOW ARE WE PERFORMING?

NBJ Exported Energy (01AUG19 to 31JUL20)

Month	kWh End Jul 2019	kWh End Jul 2020
Aug	-	5,229.8
Sep	-	3,594.0
Oct	-	1,382.4
Nov	-	751.6
Dec	-	1,105.0
Jan	-	758.4
Feb	-	991.2
Mar	-	2,668.0
Apr	1,656.5	4,811.4
May	2,771.6	5,295.3
Jun	4,544.9	4,204.3
Jul	2,876.8	4,329.3
Year	11,849.8	35,120.8

Note: In addition to regular payments from our hosts under their Power Purchase Agreement (PPA), Harborough Solar One are paid quarterly (via Good Energy) for our generated electricity and for the electricity 'exported' by the host site (at rates set by the Government in our Feed in Tariff agreements).

This is either:

- 'Deemed' - at 50% for Woodnewton and Archway (reported via EMIG) or

- 'Metered' – as with NBJ (via Stark)

HOW ARE WE PERFORMING?

NBJ Exported Energy (01AUG19 to 31JUL20)

Annual Energy Consumption — 35,121 kWh

Energy consumption equivalent to:

1 litre kettles boiled — 308,077

Energy saving light bulbs in use all year — 200

CO2 Conv. Factors for Elec 2020: 0.253 kg CO2/kWh (from UK Government), 2019: 0.277 kg CO2/kWh
Gas: 0.1839 kgCO2/kWh (from UK Government); Oil: 0.268 kg CO2/kWh
Energy consumption for boiling 1L water in kettle = 0.114kWh based on value from which? (http://www.which.co.uk); Energy saving light bulb power rating equal to 20W

Annual CO2 Emissions — 8,892 kg CO2
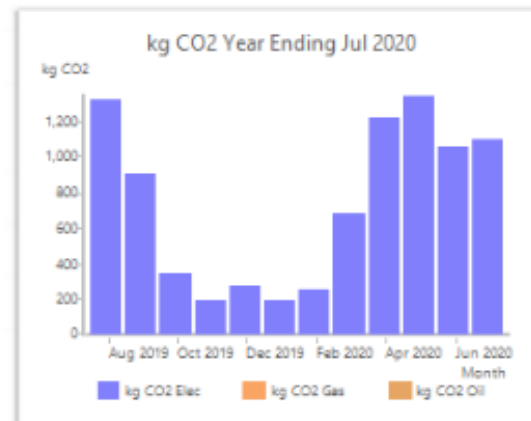
Emissions equivalent to:

Number of hot air balloons filled — 1.8

No. times round the Earth in a car — 1.1

Volume of Typical Hot Air Balloon at 2500m³; Average Car emissions 0.20282 kg CO2 per km

Month	kWh Year Ending Jul 2020	kg CO2 Year Ending Jul 2020
Aug	5,230	1,324
Sep	3,594	910
Oct	1,382	350
Nov	752	190
Dec	1,105	280
Jan	758	192
Feb	991	251
Mar	2,668	676
Apr	4,811	1,218
May	5,295	1,341
Jun	4,204	1,064
Jul	4,329	1,096
Total	35,121	8,892

kg CO2 Year Ending Jul 2020

kg CO2 Elec — kg CO2 Gas — kg CO2 Oil

Report Time Zone: (UTC+00:00) Dublin, Edinburgh, Lisbon, London (With Daylight Saving)

For further details,

please visit our website:

www.HarboroughEnergy.co.uk

Or contact us on:

Info@HarboroughEnergy.co.uk

HARBOROUGH ENERGY

Our Generation data is provided by **The Energy Meter Information Gateway (eMIG)** - an online tool for remotely measuring and monitoring energy generation.

Our Export data is provided by **STARK** – a specialist platform for energy data and analytics.