

Renewable Energy Resource Assessment Study

South Gloucestershire Renewable Energy Resource
Assessment Study – Maps

South Gloucestershire Council

Project number: 60642451

October 2021

Quality information

Prepared by	Checked by	Verified by	Approved by
Parham Andishehtadbir	Simon Hartley		
Sustainability Consultant	Regional Director		

Revision History

Revision	Revision date	Details	Authorized	Name	Position
	21/10/2021				
	26/10/2021				

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

South Gloucestershire Council

Prepared by:

Parham Andishehtadbir
Sustainability Consultant
T: +44-(0)29-2005 1500
E: Parham.Andishehtadbir@aecom.com

AECOM Limited
1 Callaghan Square
Cardiff CF10 5BT
United Kingdom

T: +44-(0)29-2005 1500

aecom.com

© 2021 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

Introduction	6
R1-SG: Existing Renewable Energy Generators in South Gloucestershire	7
W1-SG: South Gloucestershire Boundary.....	8
W2-SG-0.5MW: Wind Resource for 500kW Wind Turbines Constraints – Areas to Exclude from Further Consideration.....	9
W2-SG-1.0MW: Wind Resource for 1.0MW Wind Turbines Constraints – Areas to Exclude from Further Consideration.....	10
W2-SG-2.5MW: Wind Resource for 2.5MW Wind Turbines Constraints – Areas to Exclude from Further Consideration.....	11
W3-SG-0.5MW: Remaining Land Parcels for 500kW Wind Turbines After Constraining of the Areas that are Excluded from Further Consideration in W2 Map.....	12
W3-SG-1.0MW: Remaining Land Parcels for 1.0MW Wind Turbines After Constraining of the Areas that are Excluded from Further Consideration in W2 Map	13
W3-SG-2.5MW: Remaining Land Parcels for 2.5MW Wind Turbines After Constraining of the Areas that are Excluded from Further Consideration in W2 Map	14
W4-SG-0.5MW: Suitable Areas of Land for Installation of 500kW Wind Turbines Constrained by Wind Speed Only	15
W4-SG-1.0MW: Suitable Areas of Land for Installation of 1.0MW Wind Turbines Constrained by Wind Speed Only	16
W4-SG-2.5MW: Suitable Areas of Land for Installation of 2.5MW Wind Turbines Constrained by Wind Speed Only	17
W5-SG-0.5MW: Remaining Land Parcels from Resource Map (W3) After Constraining the Unsuitable Areas due to Wind Speed Map (W4) for Installation of 500kW Wind Turbines	18
W5-SG-1.0MW: Remaining Land Parcels from Resource Map (W3) After Constraining the Unsuitable Areas due to Wind Speed Map (W4) for Installation of 1MW Wind Turbines	19
W5-SG-2.5MW: Remaining Land Parcels from Resource Map (W3) After Constraining the Unsuitable Areas due to Wind Speed Map (W4) for Installation of 2.5MW Wind Turbines	20
W6-SG-500kW: Remaining Land Parcels from W5 Map for 500kW Wind Turbines After Constraining Land Slivers, Fire Breaks and Tracks, As Well As Parcels of Land Allocated to 1.0MW and 2.5MW Wind Turbines	21
W6-SG-1.0MW: Remaining Land Parcels from W5 Map After Constraining Land Slivers, Fire Breaks and Tracks, As Well As Parcels of Land Insufficient to Support a Wind Farm of 5MW or More Based on 1.0 MW Wind Turbines	22
W6-SG-2.5MW: Remaining Land Parcels from W5 Map After Constraining Land Slivers, Fire Breaks and Tracks, As Well As Parcels of Land Insufficient to Support a Wind Farm of 5MW or More Based on 2.5MW Wind Turbines	23
W7-SG: Combined Wind Search Areas in South Gloucestershire	24
W8-SG -0.5MW: Wind Resource Other Constraints – to Consider Further.....	25
W8-SG-1.0MW: Wind Resource Other Constraints – to Consider Further.....	26
W8-SG-2.5MW: Wind Resource Other Constraints – to Consider Further.....	27
W9-SG: Wind Local Search Areas from W7 Map and Natural England’s Wind Impact Risk Zones (IRZs) in South Gloucestershire.....	28
W10-SG: Wind Local Search Areas from W7 Map and Areas of Outstanding Natural Beauty (AONB) in South Gloucestershire.....	29
W11-SG: Wind Local Search Areas from W7 Map and Flood Zones in South Gloucestershire	30
W12-SG: Wind Local Search Areas from W7 Map and Green Belt Area in South Gloucestershire	31
W13-SG-0.5MW: Wind Local Search Areas for 500kW Turbines from S6 Map and MOD, NATS and Aviation Safeguarded Zones	32
W13-SG-1.0MW: Wind Local Search Areas for 1.0MW Turbines from S6 Map and MOD, NATS and Aviation Safeguarded Zones	33
W13-SG-2.5MW: Wind Local Search Areas for 2.5MW Turbines from S6 Map and MOD, NATS and Aviation Safeguarded Zones	34
W14-SG: Combined Wind Search Areas and Conservation Areas (Heritage) in South Gloucestershire	35

W15-SG-0.5MW: Buffer Zones for Wind Local Search Areas from 500kW Turbines	36
W15-SG-1.0MW: Buffer Zones for Wind Local Search Areas from 1.0MW Turbines	37
W15-SG-2.5MW: Buffer Zones for Wind Local Search Areas from 2.5MW Turbines	38
W16-SG-1.0MW: Wind Search Areas and Grid Connection.....	39
W16-SG-2.5MW: Wind Search Areas and Grid Connection.....	40
W17-SG: Wind Search Areas and Landscape Sensitivity Results in Band C – 0.5MW SAs.....	41
W17-SG: Wind Search Areas and Landscape Sensitivity Results in Band D – 1.0MW SAs.....	42
W17-SG: Wind Search Areas and Landscape Sensitivity Results in Band E – 2.5MW SAs.....	43
S1-SG: South Gloucestershire Boundary.....	44
S2-SG: Solar PV Resource Constraints - Areas to Exclude from Further Consideration	45
S3-SG: Remaining Land Parcels After Constraining of the Areas that are Excluded from Further Consideration in S2 Map.....	46
S4-SG: Suitable Areas of Land for Installation of Solar PV Constrained by Land Orientation and Inclination Only.....	47
S5-SG: Remaining Land Parcels from Resource Map (S3) After Constraining the Unsuitable Areas due to Land Orientation and Inclination.....	48
S6-SG: Remaining Land Parcels After Constraining Land Slivers, Fire Breaks and Tracks, As Well As Parcels of Land Insufficient to Support a Solar PV Farm of 5MW or More.....	49
S7-SG: Solar PV Search Areas in South Gloucestershire.....	50
S8-SG: Solar PV Resource Other Constraints – to Consider Further	51
S9-SG: Solar Local Search Areas from S7 Map and Agricultural Land Grade 1 and 2 in South Gloucestershire	52
S10-SG: Solar Local Search Areas from S7 Map and Natural England’s Solar Impact Risk Zones (IRZs) in South Gloucestershire.....	53
S11-SG: Solar Local Search Areas from S7 Map and Areas of Outstanding Natural Beauty (AONB) in South Gloucestershire.....	54
S12-SG: Solar Local Search Areas from S7 Map and Flood Zones in South Gloucestershire.....	55
S13-SG: Solar Local Search Areas from S7 Map and Green Belt Area in South Gloucestershire	56
S14-SG: Solar PV Search Areas and Conservation Areas (Heritage) in South Gloucestershire.....	57
S15-SG: Solar PV Local Search Areas and Pipeline Solar PV Projects in South Gloucestershire	58
S16-SG: Solar PV Search Areas and Grid Connection in South Gloucestershire	59
S17-SG: Solar PV Search Areas and Landscape Sensitivity Results in Band A	60
S17-SG: Solar PV Search Areas and Landscape Sensitivity Results in Band B.....	61
S17-SG: Solar PV Search Areas and Landscape Sensitivity Results in Band C.....	62
S17-SG: Solar PV Search Areas and Landscape Sensitivity Results in Band D.....	63
S17-SG: Solar PV Search Areas and Landscape Sensitivity Results in Band E.....	64
B1-SG: Potential Biomass Resource Map (Grade 4 Agricultural Land).....	65
B2-SG: Biomass Resource Constraints – Areas to Exclude from Further Consideration	66
B3-SG: Remaining Biomass Resource (Grade 4 Agricultural Land) After Constraining of Ancient and Broadleaved Woodlands, Primary Heritage and Ecological Constraints and Existing and Consented Renewable Generation Installations.....	67
E1-SG: Indicative Heat Demand Based on Gas Consumption – Total Gas Consumption by MSOA in 2019 (MWh per Year).....	68
E2-SG: Total Electricity Consumption by MSOA in 2019 (MWh per Year).....	69
E3-SG: Indicative Residential Heat Demand Gas Consumption in 2019 (MWh per Year)	70
E4-SG: Heat Opportunity Plan for South Gloucestershire.....	71
E5-SG: Heat Opportunity Plan and Wind Search Areas.....	72
E6-SG: Heat Opportunity Plan and Solar PV Search Areas.....	73
H1-SG: Wind Search Areas and Industrial Clusters for Potential Green Hydrogen Generation and Demand	74
H2-SG: Solar PV Search Areas and Industrial Clusters for Potential Green Hydrogen Generation and Demand	75

Introduction

This report contains the maps created for and referenced in the Renewable Energy Resource Assessment Study for South Gloucestershire Council. The methodology of the creation of the maps is detailed in the aforementioned report.