Figure 10.1c

Figure 10.1b

Key

- Site Boundary
- Turbines
- LiDAR A
- LiDAR B
- Preferred Access Route
- Alternative Access Route
- Common Access Route
- Existing Yellow Bog Track, Surfacing to be Upgraded and Minor Localised Widening
- Strathy North Access Route
- LiDAR Track

Access Track

- Cut
- Floating
- Upgrade
- Borrow Pit
- Laydown Area
- Temporary Laydown Area
- Construction Compound
- Substation
- Batching Plant
- Hardstanding

- Watercourse (OS Vectomap Local)

SEPA Water Catchment Areas - Over 100km²

- Halladale River - d/s Forsinain Burn
- Loch Badanloch / nan Clar / Rimsdale
- River Helmsdale - Kinbrace Burn to sea
- River Helmsdale - Loch Badanloch to Kinbrace Burn
- River Naver - sea to Loch Naver
- River Strathy - The Uair to sea

Scale 1:60,000 @ A3

0 1 2 Km

N

Figure 10.1a

Local Hydrology

Strathy South Wind Farm
EIAR 2020

sse Renewables

- Site Boundary
- Site Boundary 1km Buffer
- Turbines
- LiDAR A
- LiDAR B
- Preferred Access Route
- Alternative Access Route
- Common Access Route
- Existing Yellow Bog Track, Surfacing to be Upgraded and Minor Localised Widening
- LiDAR Track

Access Track

- Cut
- Floating
- Upgrade
- Borrow Pit
- Laydown Area
- Temporary Laydown Area
- Construction Compound
- Substation
- Batching Plant
- Hardstanding

- Water Crossing Remaining from 2013
- Water Crossing New to 2019
- Watercourse Abstraction Location

Private Water Supply - Source

- Property
- Stream - Unconfirmed
- Watercourse (OS Vectomap Local)
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

SEPA Water Catchment Areas - Over 100 km^2

- Halladale River - d/s Forsinain Burn
- River Naver - sea to Loch Naver
- River Strathy - The Uair to sea

Scale 1:30,000 @ A3

0 0.5 1 Km

N

Figure 10.1b

Local Hydrology

Strathy South Wind Farm
EIAR 2020

sse Renewables

- Site Boundary
- Site Boundary 1km Buffer
- Preferred Access Route
- Alternative Access Route
- Common Access Route
- Strathy North Access Route
- Strathy North Abstraction Borehole
- Water Crossing Remaining from 2013

Contolled Activities Regulation Licensed Sites

- Bridge
- Bridging Culvert
- Removal of River / Loch Crossing
- Sewage (Private) Primary

Private Water Supply - Source

- Loch - Unconfirmed
- Property
- Stream
- Stream - Unconfirmed
- Watercourse (OS Vectomap Local)
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

SEPA Water Catchment Areas - Over 100 km²

- Halladale River - d/s Forsinain Burn
- River Naver - sea to Loch Naver
- River Strathy - The Uair to sea

Scale 1:30,000 @ A3

0 0.5 1 Km

N

Figure 10.1c

Local Hydrology

Strathy South Wind Farm
EIAR 2020

sse Renewables

Key

- Site Boundary
- Turbines
- LiDAR A
- LiDAR B
- Preferred Access Route
- Alternative Access Route
- Common Access Route
- Existing Yellow Bog Track, Surfacing to be Upgraded and Minor Localised Widening
- Strathy North Access Route
- LiDAR Track

Access Track

- Cut
- Floating
- Upgrade
- Borrow Pit
- Laydown Area
- Temporary Laydown Area
- Construction Compound
- Substation
- Batching Plant
- Hardstanding

Soil Type

- Brown earths
- Humus-iron podzols
- Lochs
- Peat
- Peaty gleys
- Peaty podzols

Scale 1:50,000 @ A3

0 1 2 Km

N

Figure 10.2

Soils Mapping

Strathy South Wind Farm
EIAR 2020

sse Renewables

- Site Boundary
- Turbines
- LiDAR A
- LiDAR B
- Preferred Access Route
- Alternative Access Route
- Common Access Route
- Existing Yellow Bog Track, Surfacing to be Upgraded and Minor Localised Widening
- Strathy North Access Route
- LiDAR Track

Access Track

- Cut
- Floating
- Upgrade
- Borrow Pit
- Laydown Area
- Temporary Laydown Area
- Construction Compound
- Substation
- Batching Plant
- Hardstanding

National Importance for Carbon-Rich Soil, Deep Peat and Priority Peatland Habitat

- CLASS 1 All vegetation cover is priority peatland habitats. All soils are carbon-rich soils and deep peat
- CLASS 2 The vegetation cover is dominated by priority peatland habitats. All soils are carbon-rich soil and deep peat
- CLASS 3 Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat
- CLASS 4 Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils
- CLASS 5 Soil information takes precedence over vegetation data. No peatland habitat recorded. May also show bare soil. All soils are carbon-rich soil and deep peat
- Mineral soils - Peatland habitats are not typically found on such soils
- Non-soil (i.e. loch, built up area, rock and scree)

Scale 1:50,000 @ A3

0 1 2 Km

N

Figure 10.3

Peatland Classification

Strathy South Wind Farm
EIAR 2020

sse Renewables

- Site Boundary
- Turbines

Superficial Deposits

- Peat
- Alluvium – Clay, Silt, Sand and Gravel
- Alluvial Fan Deposits - Gravel, Sand, Silt and Clay
- River Terrace Deposits (Undifferentiated) – Gravel, Sand and Silt
- Lacustrine Deposits - Clay, Silt and Sand
- Glaciofluvial Deposits - Gravel, Sand and Silt
- Hummocky (Moundy) Glacial Deposits – Diamicton, Sand and Gravel
- Hummocky (Moundy) Glacial Deposits – Sand, Gravel and Boulders
- Not Mapped - Likely to be Shallow Bedrock

Scale 1:50,000 @ A3

0 1 2 Km

N

Figure 10.4

Superficial Geology

Strathy South Wind Farm
EIAR 2020

sse Renewables

Key

- Site Boundary
- Turbines

Linear Feature

- Fault Inferred, Displacement Unknown
- Reverse or Thrust Fault, Inferred

Igneous Bedrock

- Strath Halladale Granite - Granite, Biotite
- Strath Halladale Granite - Granite, Foliated-Biotite
- Scottish Highland Ordovician Minor Intrusion Suite – Granite
- Scottish Highland Ordovician Minor Intrusion Suite - Granite, Foliated
- Scottish Highland Ordovician Minor Intrusion Suite – Pegmatite
- Unnamed Igneous Intrusion, Pre-Caledonian - Amphibolite, Schistose

Metamorphic and Sedimentary Bedrock - Devonian

- Lower Old Red Sandstone Group - Conglomerate and [Subequal/Subordinate] Sandstone, Interbedded

Metamorphic and Sedimentary Bedrock - Silurian

- Clerkhill Appinite Suite – Amphibolite
- Clerkhill Appinite Suite - Diorite, Hornblende
- Clerkhill Appinite Suite – Ultramafitite

Metamorphic and Sedimentary Bedrock - Neoproterozoic

- Kirtomy Gneisses - Semipelite, Gneissose
- Strathy Complex – Gneiss
- Swordly Pelite Member – Pelite
- Bettyhill Formation - Gneiss, K-Feldspar-Augen
- Bettyhill Formation - Migmatitic Psammite with Migmatitic Semipelite
- Bettyhill Formation - Pelite, Gneissose
- Bettyhill Formation - Semipelite, Gneissose
- Invernaver Pelite Member - Pelite, Gneissose
- Bettyhill Suite - Amphibolite, Schistose
- Loch Coire Formation - Migmatitic Psammite with Migmatitic Semipelite
- Loch Coire Formation - Migmatitic Pelite and Migmatitic Semipelite
- Bighouse Formation - Sandstone, Conglomerate and [Subordinate] Argillaceous Rocks
- Portskerra Psammite Formation - Migmatitic Psammite with Migmatitic Semipelite
- Lewisian Complex – Metaperidotite
- Lewisian Complex – Orthogneiss
- Lewisianoid Gneiss Complex - Orthogneiss, Hornblende-Bearing

Scale 1:50,000 @ A3

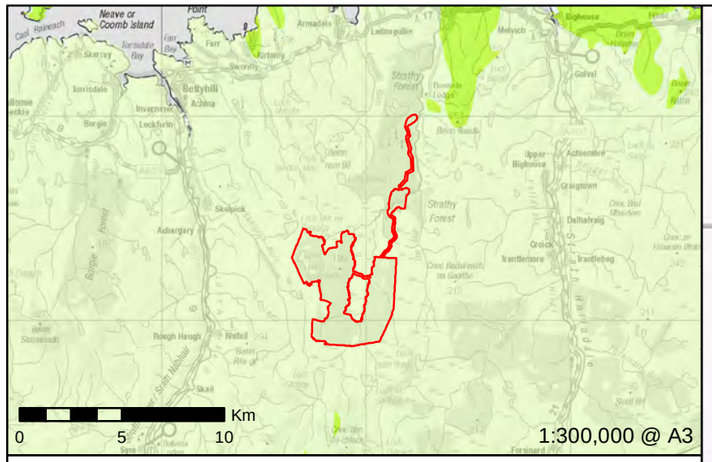
0 1 2 Km

N

Figure 10.5

Solid Geology

Strathy South Wind Farm
EIAR 2020



Key

Site Boundary

Aquifer in Which Flow is Virtually All Through Fractures and Other Discontinuities

2B, Moderately productive aquifer

2C, Low productivity aquifer

INDEX AND EXPLANATION

1. Aquifers in which intergranular flow is significant

a. Highly productive aquifers (not extensive)
- Permian at Thornhill
- Upper Old Red Sandstone in Fife

b. Locally important aquifers
- Recent: Blown sand
- Quaternary sands and gravels
- Permian in North West Grampian

2. Aquifers in which flow is dominantly in fissures and other discontinuities

a. Highly productive aquifers (not extensive)
- Permian
- Carboniferous: Dinantian and Namurian
- Upper Old Red Sandstone

b. Locally important aquifers
- Triassic and Permian
- Carboniferous: Westphalian
- Lower and Middle Old Red Sandstone

3. Concealed aquifers, aquifers of limited potential, regions without significant groundwater

a. Concealed aquifers; aquifers with limited or local potential
- Quaternary: coastal and river alluvium
- Jurassic
- Permian at Stranraer
- Cambro-Ordovician and Precambrian Limestones

b. Regions underlain by impermeable rocks, generally without groundwater except at shallow depth
- Silurian and Ordovician
- Precambrian
- Extrusive rocks
- Intrusive rocks

Surface water features
- Perennial river or stream
- Perennial river or stream in which the chloride ion concentration is known to exceed 1000 mg/l under low flow conditions
- Stream gauging station with mean annual runoff in m^3/s, over catchment area in km^2
- Hydrometric area boundary
- Freshwater loch, reservoir or standing water
- Loch or standing water in which the chloride ion concentration is known to exceed 1000 mg/l

Groundwater features
- Recognised mineral water spring or borehole with less than 1000 mg/l total dissolved solids.
- Spa water spring or well with greater than 1000 mg/l total dissolved solids
- Areas where the chloride ion concentration exceeds 1000 mg/l above −80 m O.D.

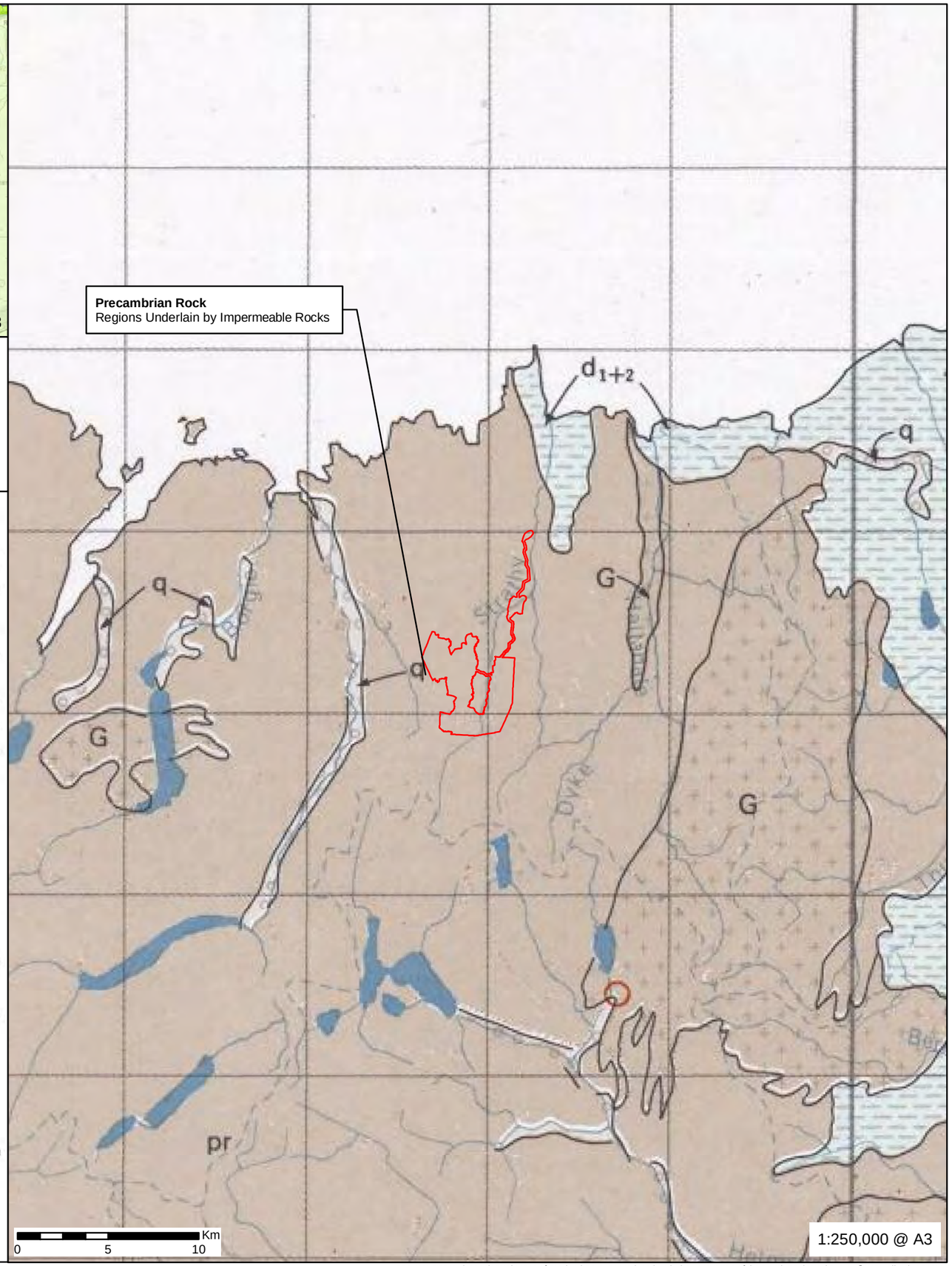
Sources of known abstraction (licences are not required):

a) 10-19 l/s, b) 20-29 l/s, c) > 29 l/s } normal discharge or pumping yield

- Springs
- Springs used for public supply
- Wells and boreholes
- Sources of public supply
- Artesian boreholes
- Artesian boreholes used for public supply
- River or loch intake for public supply with ≥ 10 Ml/d capacity

Artificial works
- Impounding reservoir with design yield ≥ 10 Ml/d (figures in Ml/d)
- Canal
- Hydroelectric station

Geological symbols
- Geological boundary
- Geological boundary beneath cover
- Fault
- Contours on the surface of the Old Red Sandstone in m relative to O.D.



sse Renewables

Key

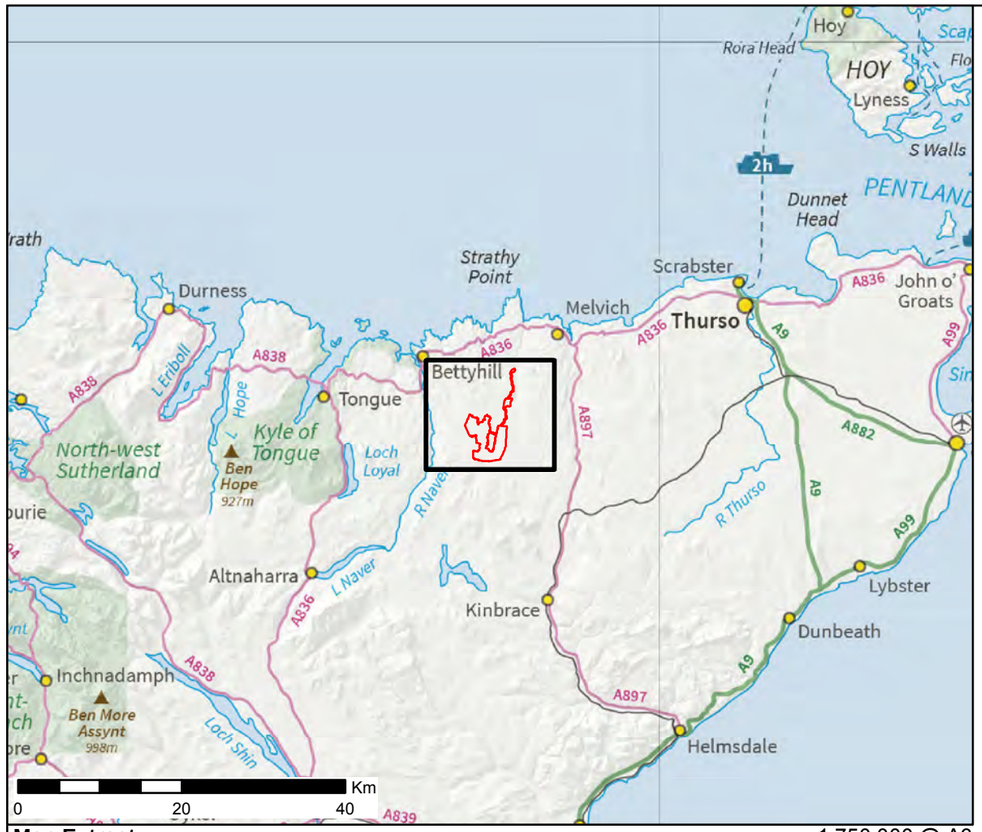
Site Boundary

N

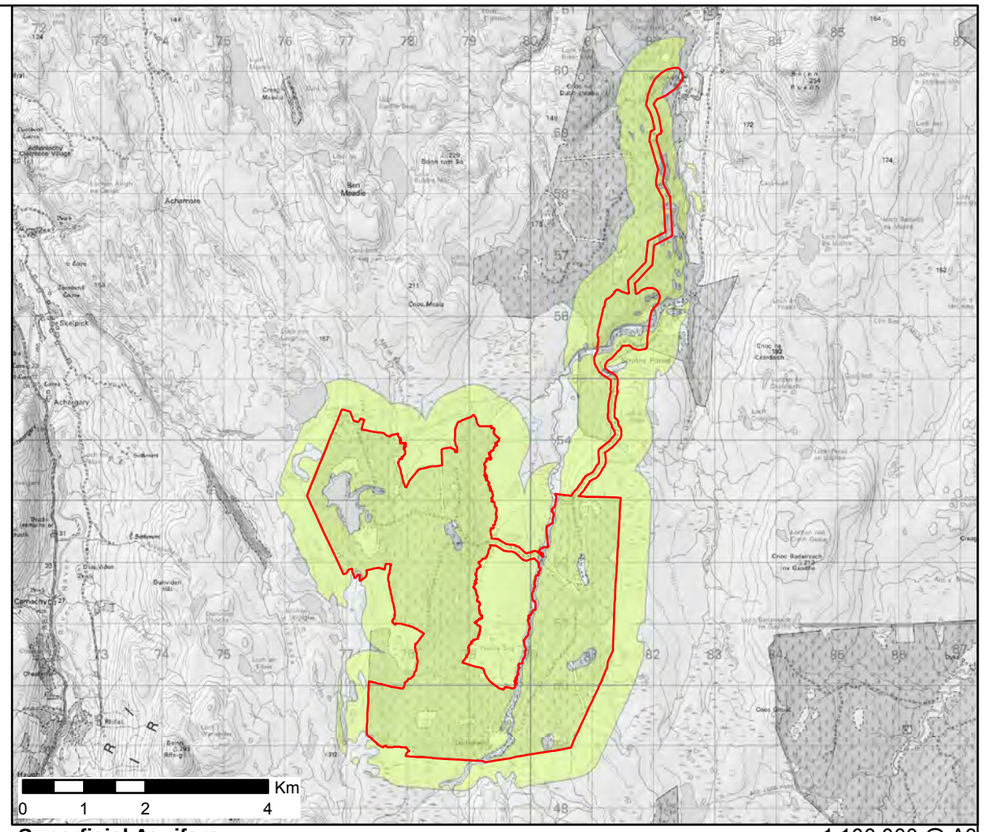
Figure 10.6

Regional Hydrogeology

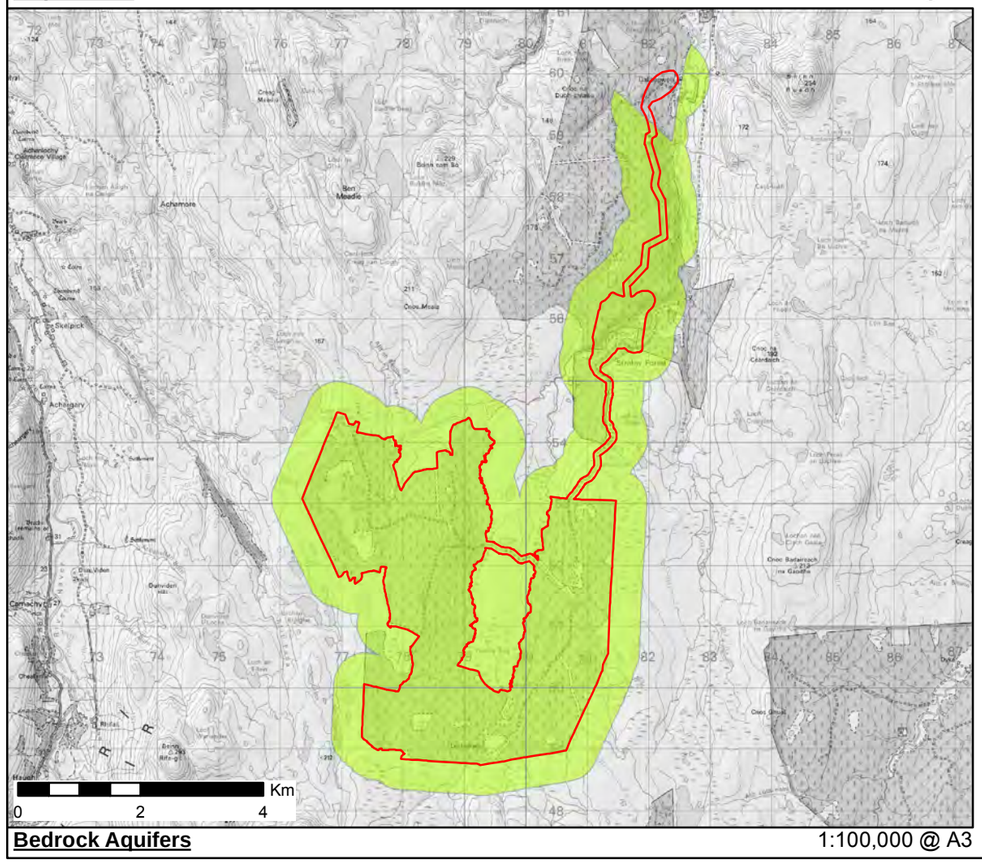
Strathy South Wind Farm
EIAR 2020



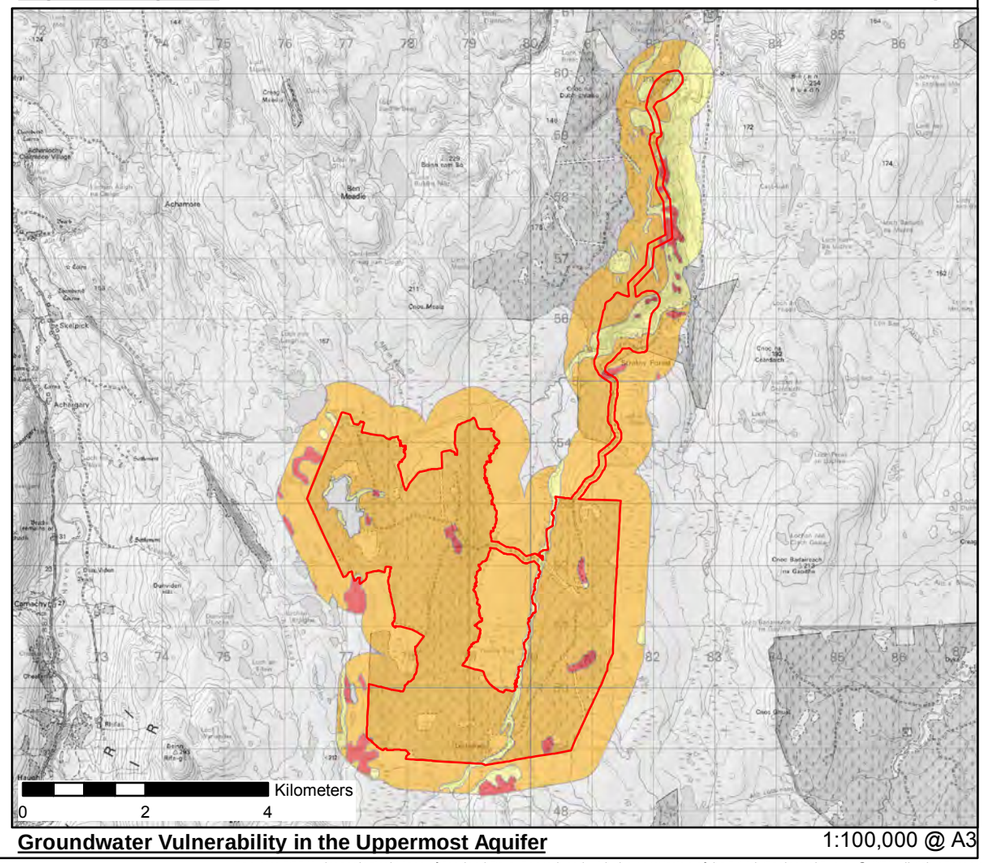
Map Extract 1:750,000 @ A3



Superficial Aquifers 1:100,000 @ A3



Bedrock Aquifers 1:100,000 @ A3



Groundwater Vulnerability in the Uppermost Aquifer 1:100,000 @ A3

sse Renewables

Site Boundary

Superficial Aquifer

Not A Significant Aquifer

Bedrock Aquifer

Fracture Flow; Low Productivity

Groundwater Vulnerability in the Uppermost Aquifer Vulnerabilty Class

4a – Vulnerable to those pollutants not readily adsorbed or transformed. May have low permeability soil; less likely to have clay present in superficial deposits.

4b – Vulnerable to those pollutants not readily adsorbed or transformed. More likely to have clay present in superficial deposits.

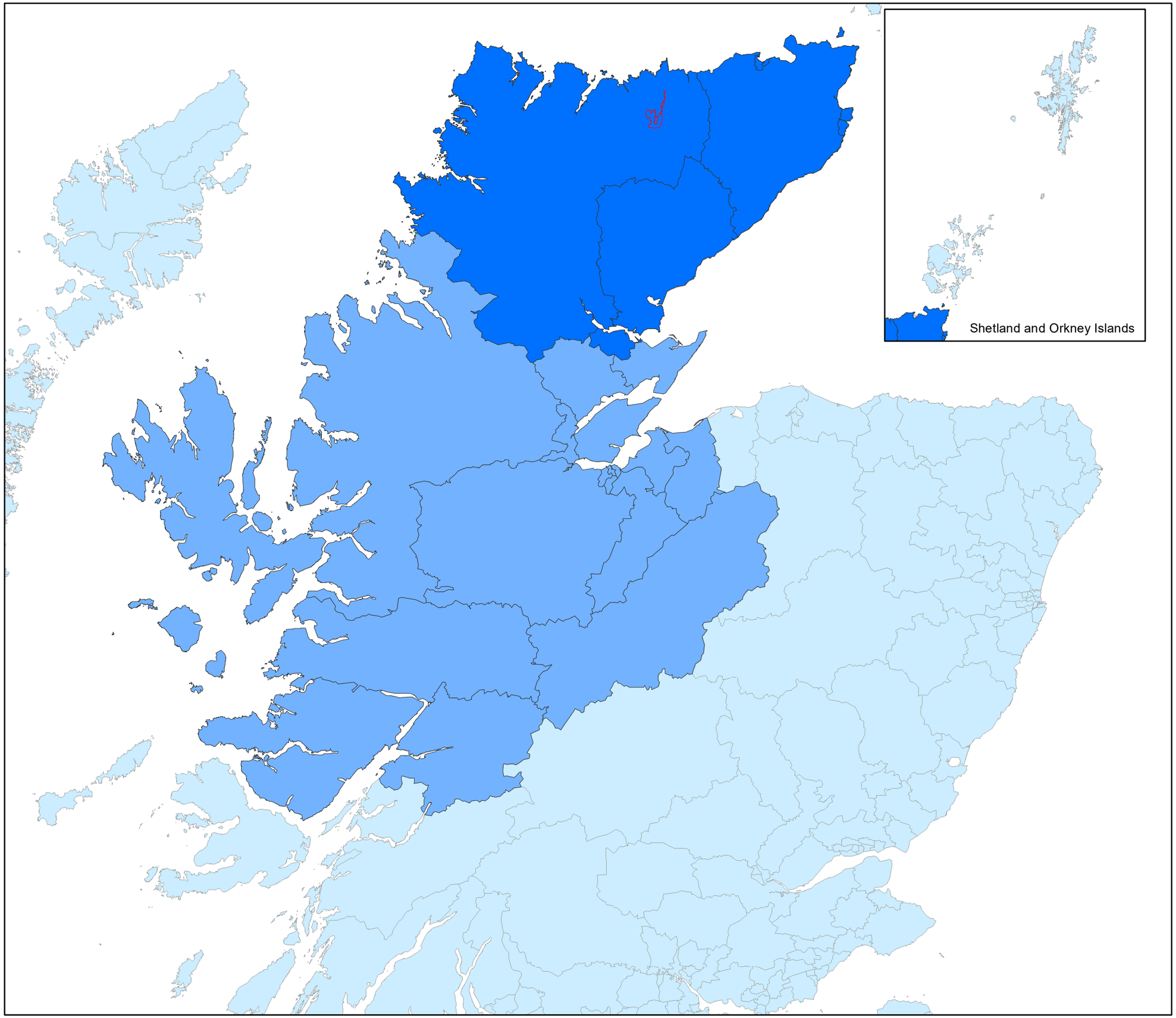
5 – Vulnerable to most pollutants, with rapid impact in many scenarios.

N

Figure 10.7

Groundwater Vulnerability

Strathy South Wind Farm
EIAR 2020



sse Renewables

Key

Legend

- Site Boundary
- Caithness and Sutherland
- Highland
- Rest of Scotland

Scale 1:1,100,000 @ A3

0 50 Km

N

Figure 11.1

Socio-economic Study Areas

Strathy South Wind Farm
EIAR 2020

sse Renewables

Key

- Site Boundary
- Turbine
- 11 Rotor Diameter Buffer
- Residential Property

Scale 1:45,000 @ A3

0 0.5 1 Km

N

Figure 12.1

Shadow Flicker

Strathy South Wind Farm
EIAR 2020