

Welcome to our Community Open Day

Thank you for visiting the Community Open Day. Here you will find a selection of information boards outlining the proposals for our three projects in the area:

Shepherds' Rig Wind Farm near Carsphairn
Stroanshalloch Wind Farm near Moniaive
Marnhoul Wind Farm near Corsock

Please take your time to study the information and please do not hesitate to speak with any of the project team members who are here to answer your questions. We will have another round of open days prior to final submission of the applications.

We are looking for your feedback which we would like to feed into the final layout for each site. If you would like to leave a written comment, please help yourself to a 'Voice Your Opinion' comment form, available from the reception desk.

There are several ways to get further information and to contact us:

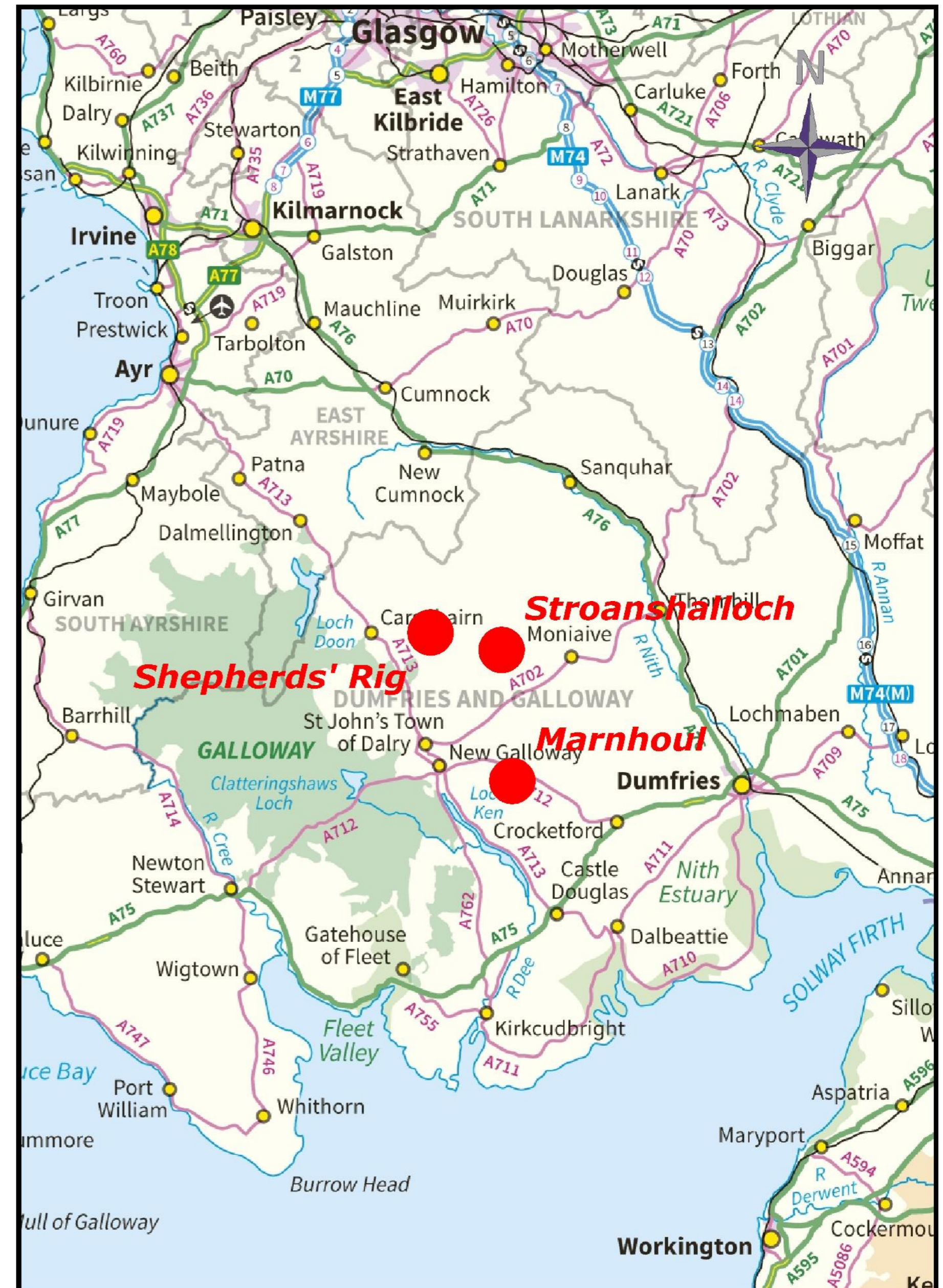
- Our websites, www.shepherdsrigwindfarm.co.uk, www.stroanshallochwindfarm.co.uk and www.marnhoulwindfarm.co.uk will be updated regularly to provide you with the latest information.
- Ring the freephone number **0800 980 4299**.
- Email us at:
info@shepherdsrigwindfarm.co.uk
info@stroanshallochwindfarm.co.uk
info@marnhoulwindfarm.co.uk
- Write to us using **Freepost Infinergy Ltd.** (*no other address details required*)

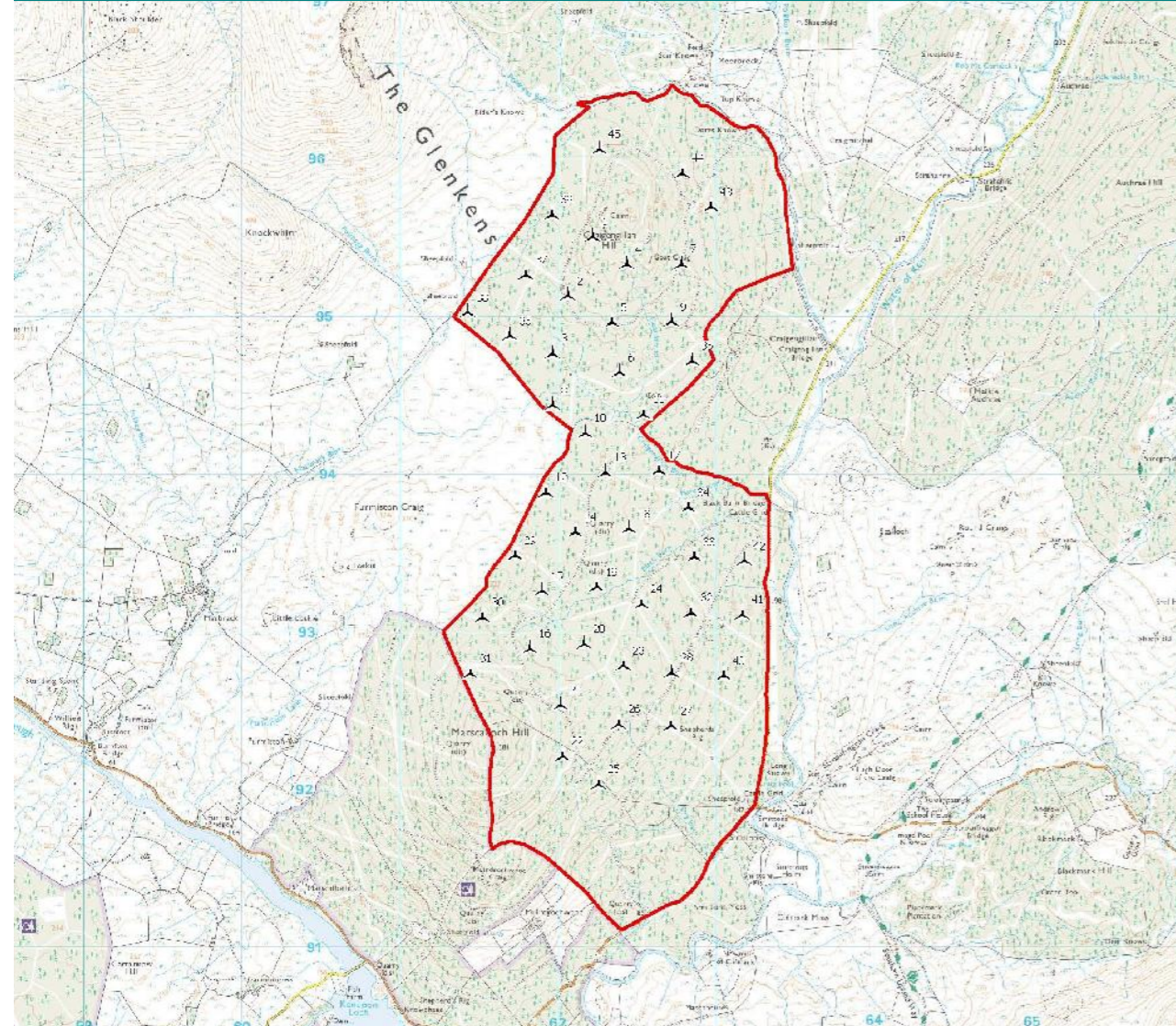


Paul's Hill Wind Farm, Highland
Image for illustrative purposes only

Overview of the plans

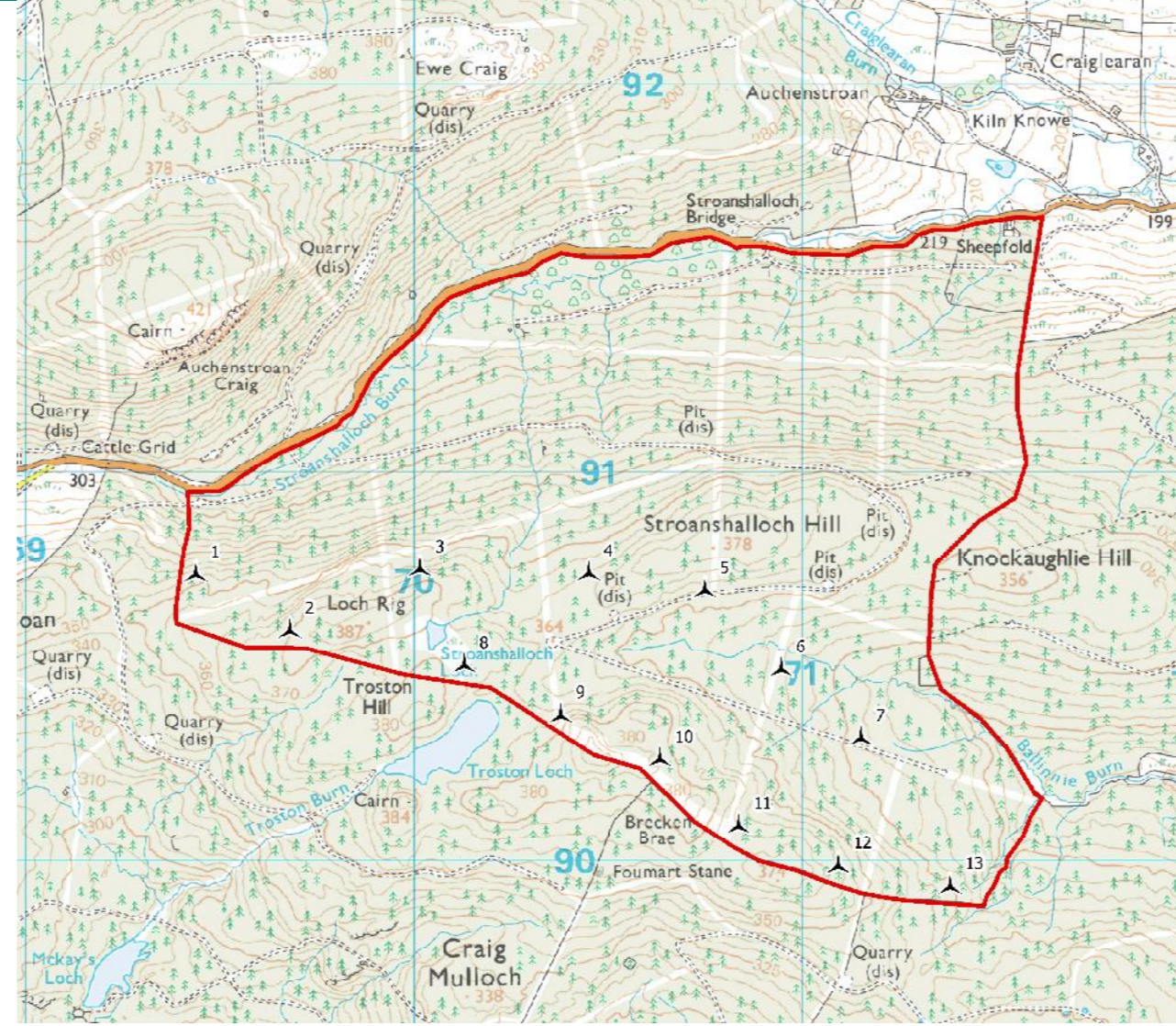
- At each site, the proposed development will include the following:
 - wind turbines
 - on site access tracks
 - crane hardstanding areas
 - permanent anemometer mast
 - temporary construction compound
 - sub-station and control building
 - cabling & borrow pits
- We are currently developing forest management plans which will guide the final design layout and turbine size for each site.
- Shepherds' Rig will be a Section 36 application to the Scottish Government with Stroanshalloch and Marnhoul Major Applications to Dumfries & Galloway Council.





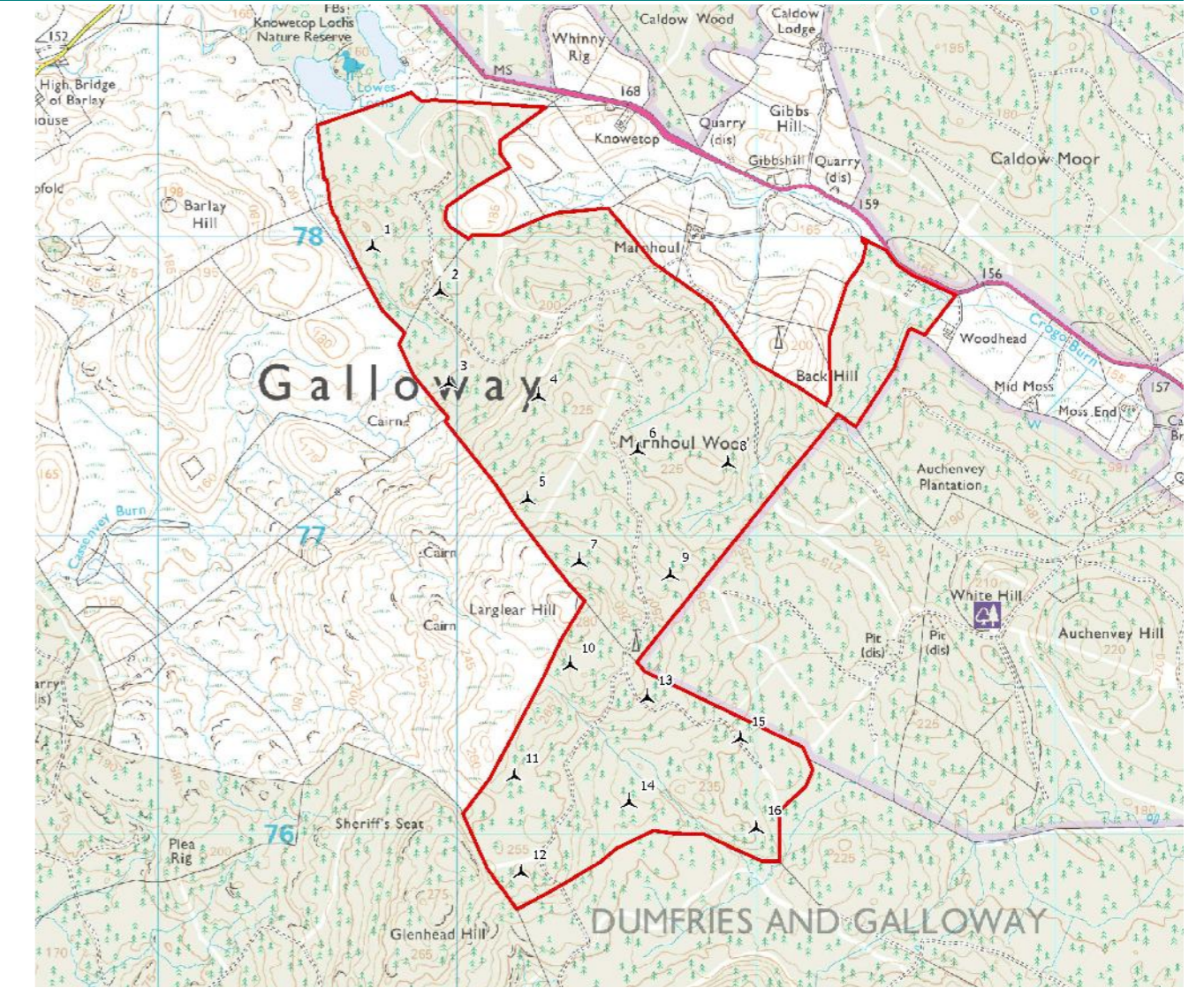
Shepherds' Rig

- A wind farm of up to 45 turbines.
- Located to the East of Carsphairn.
- Proposed turbine heights of 98.4m to hub and 139.4m to tip³.
- Turbine installed generating capacity of up to 3 megawatts.
- They could produce enough green electricity to meet the annual demand of up to 75,420 households every year and would replace the emissions of over 122,000 tonnes of CO₂ each year¹



Stroanshalloch

- A wind farm of up to 13 turbines².
- Located to the West of Moniaive.
- Proposed turbine heights of 84.6m to hub and 125.6m to tip³.
- Turbine installed generating capacity of up to 3 megawatts.
- They could produce enough green electricity to meet the annual demand of up to 21,790 households every year and would replace the emissions of over 35,000 tonnes of CO₂ each year¹



Marnhoul

- A wind farm of up to 16 turbines.
- Located to the North West of Corsock.
- Proposed turbine heights of 98.4m to hub and 139.4m to tip³.
- Turbine installed generating capacity of up to 3 megawatts.
- They could produce enough green electricity to meet the annual demand of up to 26,800 households every year and would replace the emissions of over 43,500 tonnes of CO₂ each year¹

¹Source: RenewableUK. These calculations take the variable output of wind power into consideration and are considered industry standard. Wind assessment has not yet been undertaken and therefore these figures are subject to change.

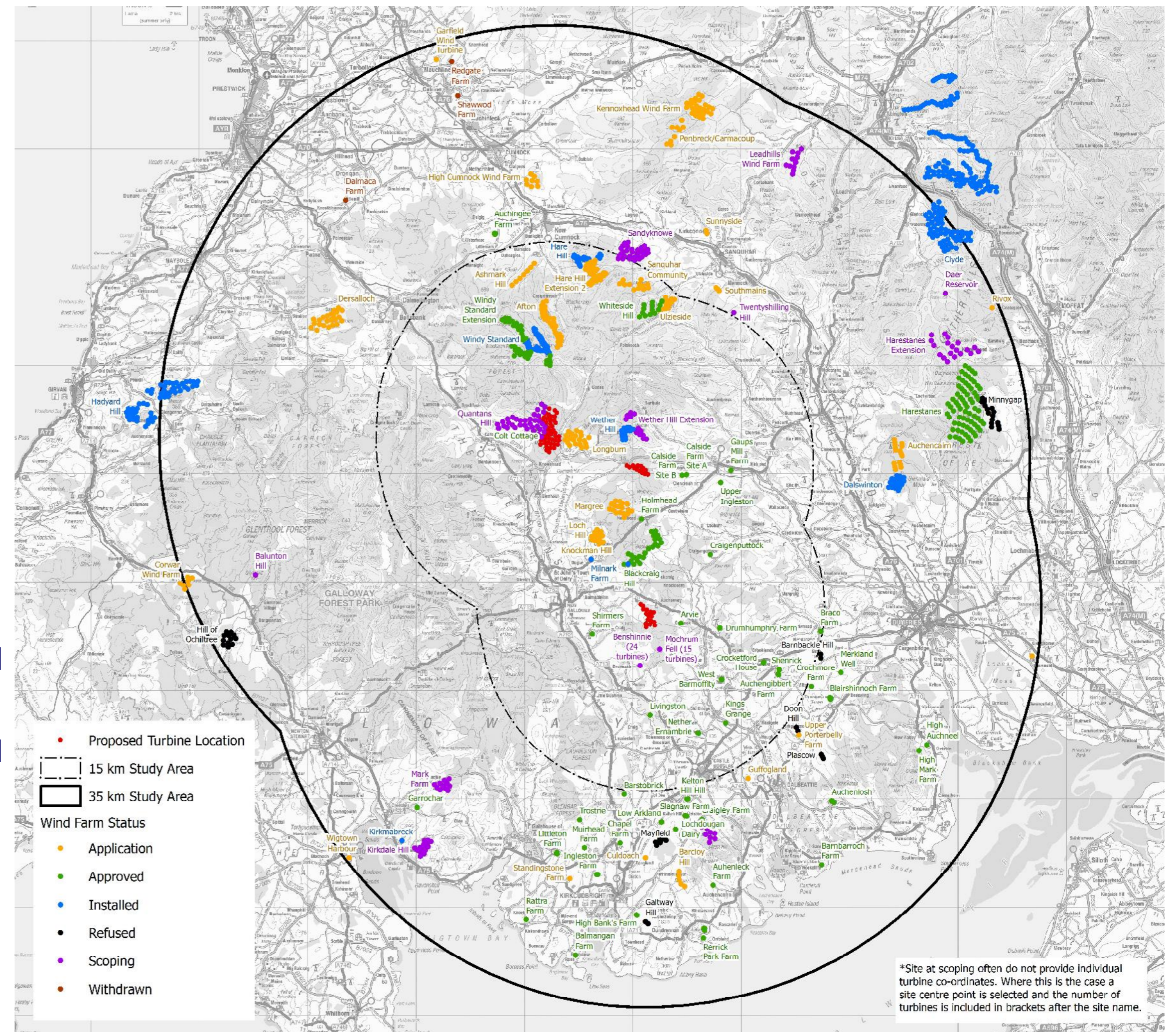
²Initial consultation with local residents following scoping has reduced turbine numbers from 16 to 13.

³Subject to change throughout the design process.

Why these sites?

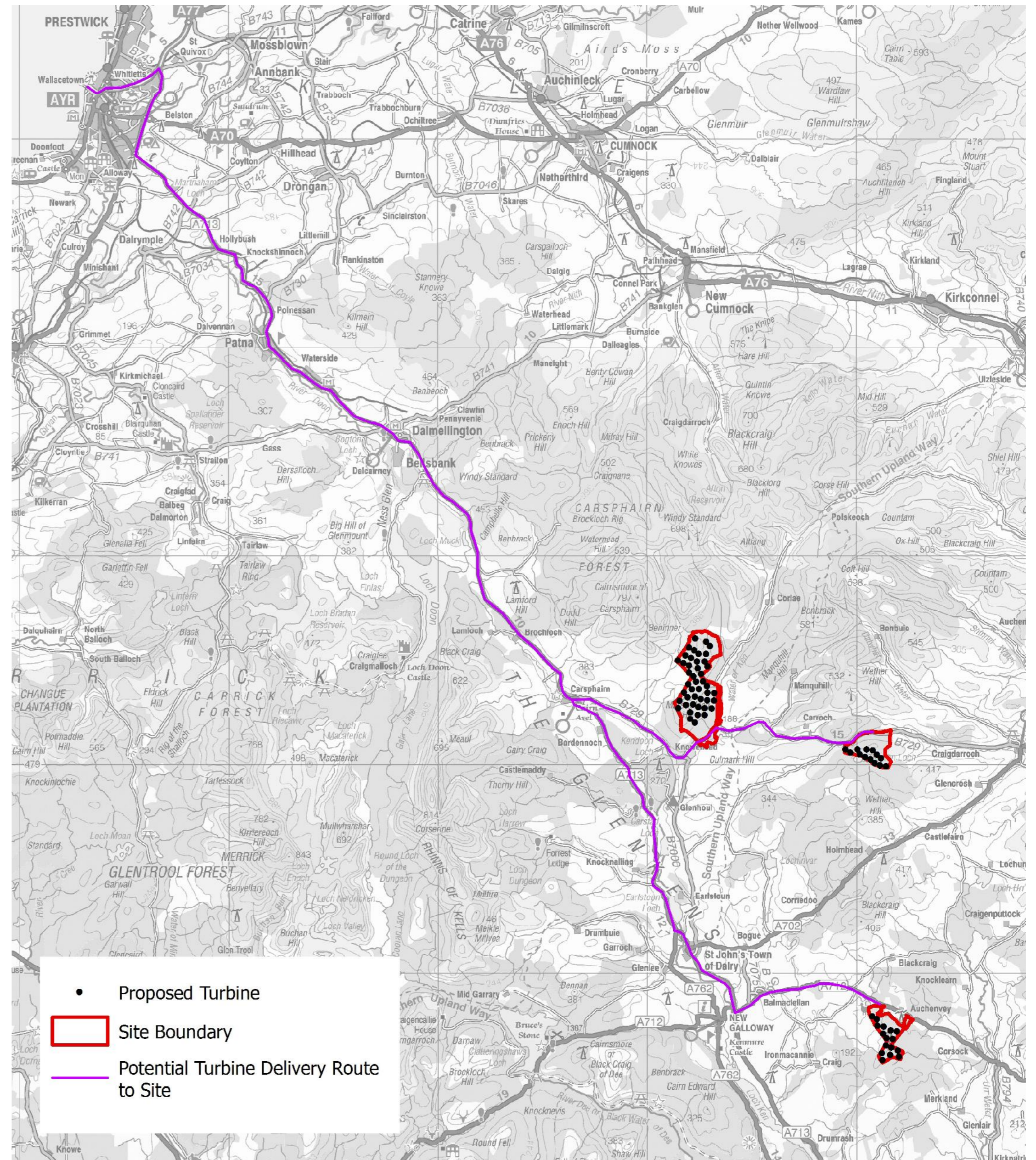
- Scotland leads the way in harnessing renewable energy sources. However, the set target of 100% of electricity from renewables by 2020 cannot be met without further development of onshore wind as part of the mix of solutions. To ensure the landscape can accommodate this, projects need to be carefully sited.
- These sites are large enough to accommodate projects that can deliver a good level of capacity towards the Scottish Government's targets.
- Whilst there are a number of projects in the area, only those that can demonstrate their benefit outweighs any negative impacts will be approved.
- The sites are well suited for wind power because:
 - They have a good average wind speed given the elevated and exposed locations.
 - They are outside any known technical constraints and landscape or ecological designations.
 - The sites are located far from large settlements reducing the number of potential residential receptors. The turbines are also located a sufficient distance from closest residential properties such that residential amenity effects are considered to be acceptable.
 - The largely low value forestry habitats on each site will be disturbed only during the relatively short operational life of the developments. Once the wind farm is removed, forestry activities can return to normal.

Wind Farms within 35km



Transport and Access

- The preferred option to transport turbines to the sites is from the port of Ayr.
- Ayr Port has suitable facilities and experience to handle the turbine components and there is a proven transportation route from the port to the main road network.
- The following access routes are proposed for the three sites, as illustrated on the accompanying map:
 - Shepherds' Rig – Port of Ayr via A77, A713 and then via the western end of the B729.
 - Stroanshalloch – Port of Ayr via A77, A713 and then via the western end of the B729 past the Shepherds' Rig site.
 - Marnhoul – Port of Ayr via A77, A713 and the A712.
- The proposed wind farms would utilise existing roads leading into the sites and, where necessary, upgrading would occur.
- The proposed access track route minimises disturbance to residential properties.
- Journeys would be undertaken during off-peak hours and where necessary with a police escort.



Ecology & Ornithology

- Given the nature of wind power projects, ecological surveys (protected species, fisheries, flora and habitats) and ornithological surveys have been taking place on each site since October 2012. Through this wide range of studies, a thorough understanding will be gained of each site, of the potential implications of the proposed developments and how, if necessary, impacts can be avoided or mitigated.
- The sites lie in forestry plantation of varying stages of maturity and as a result the habitats are generally considered to be of limited ecological value. A detailed Phase I habitat survey will be conducted at the sites to identify and map all habitats on site and detailed species surveys will be conducted as necessary. These results, along with other key issues such as disturbance to habitats and displacement of species, will then be fed into the site design process and impacts on sensitive habitats will be minimised as far as possible through appropriate siting of turbines and associated infrastructure.
- Given the habitat at the sites, potential sensitive ornithological receptors mainly include birds of prey such as peregrine falcon, merlin, goshawk, hen harrier, osprey and short-eared owl as well as black grouse. Ongoing surveys have been designed to focus on these species.
- The presence of peregrine falcon to the north of Stroanshalloch has already helped shape the layout and design on this site.
- Given the proximity of the sites to the Loch Ken and River Marshes SPA (Special Protection Area) and Ramsar site, designated for wintering geese, due consideration will be given to bird species which not only live on or around the site, but also those that pass through the area. The SPA/Ramsar site is located 13km from Shepherds' Rig and Stroanshalloch and 20km from Marnhoul.



Typical undertaking of ecology survey

Noise

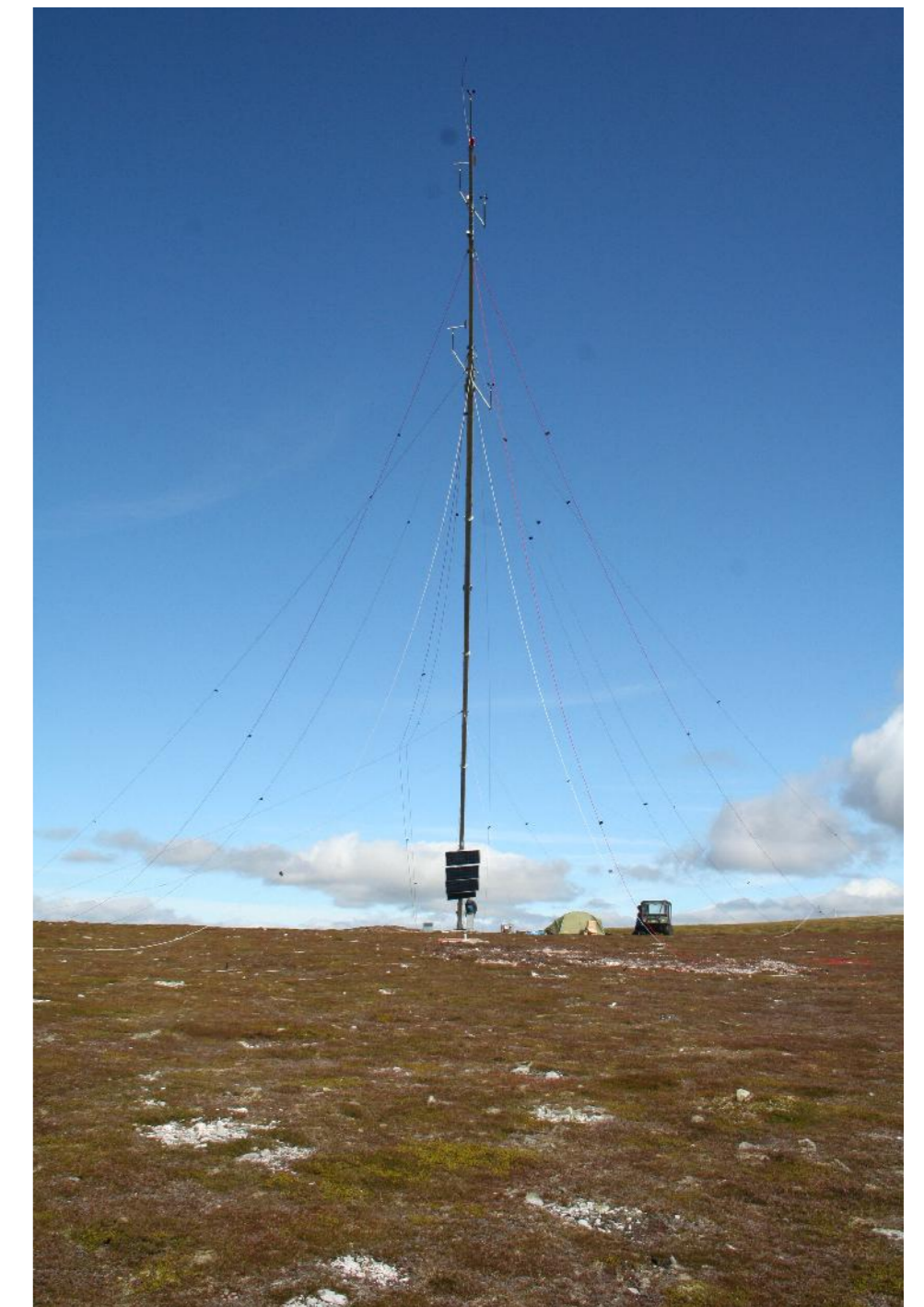
- There are two potential sources of noise from a wind turbine:
 1. The turbine blades passing through the air as they rotate.
 2. The rotation of the gearbox and generator in the hub of the turbine.
- Standing next to a turbine, it is possible to hear a swishing sound as the blades rotate.
- Turbine technology has over the years advanced and is constantly doing so, for example, certain turbine models have no gearbox. As a result this greatly decreases any noise level.
- Generally wind turbine noise levels increase as wind speeds increase, however so does the background noise level as the wind passes around the local area.

How is noise from the development assessed and measured?

- Wind farm noise is assessed using ETSU-R-97 "The Assessment & Rating of Noise from Wind Farms".
- Noise is measured in decibels - **dB(A)**
- Typically, a modern wind farm 500m away should not surpass 45 decibels.
- We will be undertaking noise surveys as part of this process to ensure residential amenity is safeguarded

Wind Measurement

- Planning permission for an 80m mast at each site to measure wind has been applied for, for a temporary period of 2-3 years.
- Planning permission has been granted at Shepherds' Rig and Stroanshalloch with construction due in late August.
- Planning was withdrawn at Marnhoul due to a potential conflict with a local air-strip.
- Anti-bird-strike deterrents will be fitted to each mast.
- Masts will be fitted with infra-red aviation safety lighting and so will not be a nuisance during the hours of darkness.



Met Mast, Highland
Image for illustrative purposes only

Community Benefit

Infinergy believes that the local community should benefit from the development of a wind farm and is committed to providing Community Benefits.

We are very aware however that just giving a cash amount can create its own challenges for the communities involved and would like to try and make sure the benefits are spread out via a variety of initiatives that will help create a vibrant and thriving place to live and work. This area of Dumfries & Galloway has had a lot of experience in the ways in which community benefit can be spent and we would appreciate hearing your ideas.

For example, should the wider package include:

- **investment in skills and education?**
- **investment in business enterprise?**
- **tourism infrastructure, eg. mountain bike trails, investment in access, signage etc?**
- **energy discounts for local people via LEO: Local Energy Organisation?** *(see separate panel)?*
- **energy saving measures for local people?**
- **affordable housing?**

In addition to any specific initiatives, typically a set amount per installed megawatt will be donated to a trust fund. This fund will normally receive revenues from the project at the end of each operational year of the wind farm's lifetime, usually 25 years.

Whatever the right solution for your area, we will work closely with you to make sure those benefits are realised.



Community Ownership

In addition to any Community Benefit attached to each project, Infinergy would like to investigate the possibility of some type of community ownership at one or all of these sites.

The Scottish Government has set an ambitious target of 500MW to be in the hands of communities by 2020. Infinergy acknowledges the possibilities of working with communities and would like to play a constructive role in empowering communities to become partners in our wind farms should they wish to.

Examples of this approach are already working successfully, generating renewable energy and providing a sound investment for local communities.

Please feel free to write any ideas that you have on how community benefit could make a positive contribution to your local community on the 'post-it notes' provided and stick them up on this panel.

We'd also be very keen to hear whether you would support some form of community ownership.

Alternatively, please complete a '**Voice Your Opinion**' comment form which is available from the reception desk.

Next steps

- We'll take away your comments and suggestions and review them all. We'll then come back in advance of submitting the planning applications to show you the final plans we propose to submit.
- Planning applications for each proposal are then expected to be submitted to the relevant planning authority by the middle of next year.
- Dumfries and Galloway Council as the local planning authority is an important consultee in this process as well as being the decision maker in relation to Marnhoul and Stroanshalloch.
- Environmental Statements including all the results from the surveys carried out will be printed and submitted along with each planning application. In addition to being available to view via Dumfries & Galloway Council, hard copies will be available to view locally (venues will be confirmed nearer the time).
- If you would like to receive a DVD containing all the planning application documents or a hard copy of the Non Technical Summary (a condensed version of the ES), please request this in the '**Voice your Opinion**' comment form, available at the reception desk. Copies of the DVD and the NTS are provided free of charge for as long as stocks lasts.



ZTVs and Visualisations

For each site we have produced a tip height Zone of Theoretical Visibility map. This map also shows the viewpoints proposed at Scoping along with the two viewpoints for each site for which wireframes and photomontages have been prepared for the purposes of these community open days. An explanation of what a ZTV is and how to view the visualisations is provided below:

Zone of Theoretical Visibility (ZTV)

- ZTVs are computer generated and illustrate the theoretical visibility of the turbines, based upon local topography and the height of the turbines. They do not take account of screening elements such as buildings and vegetation which can substantially reduce visibility.
- ZTVs are not distance sensitive in that they do not take account of the decreasing size of the turbines with increased distance as a proportion of the view.
- ZTVs also do not distinguish whether the theoretical visibility of the turbine extends to full turbine height or just the blade-tips, which can have a considerable effect on the visual influence of the turbines.
- Notwithstanding these limitations, ZTVs are a useful tool in identifying areas from which the turbines will be potentially visible.

Photomontage Viewing Instructions

- Please note that it is important to view the visualisations (Existing view, Wireline and Photomontage) from a distance of 55cm*. A line has been marked on the floor to help you gauge where to stand. This is to ensure that an accurate impression of the proposed wind farm is obtained.
- Your view of the visualisation must always be perpendicular to the plane of the image and viewed by moving along in front of it, as shown in the diagram.

