Annex 1: Precautions to protect drinking water and Scottish Water assets during windfarm construction and operational activities

General requirements

1. If you are aware the activity is taking place within a drinking water catchment the proposed timing of the works, including planned start and completion dates, should be submitted to Scottish Water 3 months in advance of any activities taking place on-site. This information should be submitted to **protectdwsources@scottishwater.co.uk.**

2. If a connection to the water or waste water network is required, a separate application must be made via the Scottish Water Development Operations Team Portal for permission to connect, this can be found at **Scottishwater/portal**. It is important to note that the granting of planning consent does not guarantee a connection to Scottish Water assets. The Development Operations Team can be contacted by telephone on **0800 389 0379** or via email at **developmentoperations@scottishwater.co.uk**

3. In the event of an incident occurring that could affect Scottish Water we should be notified without delay using the Customer Helpline number **0800 0778 778** and the local contact if known.

Protecting drinking water quality

Regulatory requirements

4. Scottish Water is required to ensure that any activity within a drinking water catchment does not affect the ability of Scottish Water to meet its regulatory requirements.

5. Water Treatment Works are designed to treat the specific parameters of the raw water source they receive (i.e. the specific chemical, biological and other characteristics of natural, untreated water). If the characteristics of the raw water change or deteriorate, it can affect the ability of the works to supply drinking water to customers at the required standards.

6. The regulations relating to the quality of drinking water supplied by Scottish Water are the Public Water Supplies (Scotland) Regulations 2014 as amended. Quality Standards are derived from the European Drinking Water Directive 98/83/EC.

7. Drinking water catchments feed Scottish Water abstractions which supply water to water treatment works. Under Article 7 of the Water Framework Directive, waters used for the abstraction of drinking water are designated as Drinking Water Protected Areas (DWPA). The objective of the Water Framework Directive is to ensure that no activity results in the deterioration of waters within the DWPA. If an activity falls within a DWPA or drinking water catchment, it is essential that water quality and quantity are protected.

Specific precautions for drinking water protection during windfarm activities

8. A detailed, site specific Construction Method Statement including e.g. Construction Environmental Management Plan, Risk Assessment Method Statement, Pollution Prevention and Incident Plan and Contingency Plan must be submitted to Scottish Water at least 3 months prior to the works commencing. This should be agreed with Scottish Water prior to any operations taking place. Any other associated documents (e.g. Drainage Plan, Peat Management Plan etc.) should also be submitted and agreed with Scottish Water at least 3 months prior to works commencing. In the first instance, this information should be supplied to **protectdwsources@scottishwater.co.uk.**

9. If helicopters are being used to transport equipment, machinery or infrastructure you must detail this within your documentation as detailed above. We would request that no refuelling takes place within the catchment where possible. If not possible, please provide as large a buffer as you can from the watercourse and certainly no less than the 50m, locate equipment on a level area sloping away from the watercourse and have spill kits available. Flying directly over the source should be avoided, where possible.

10. Where possible, infrastructure and activities should be located outside of the drinking water catchment. If this can be demonstrated to be impracticable then all infrastructure and activities should be located 100m from any watercourse where possible, and a minimum of 50m distant where 100m can be demonstrated to be undeliverable. This includes turbine locations, crane hard standing areas, cable trenches, access tracks and temporary construction related activities such as borrow pits, plant stockpiled materials, cement batching, wheel washing and construction compound areas.

11. Any potential effect on the hydrology of the area resulting from the construction and operation of the proposed development should be assessed and the findings presented in the Environmental Statement or environmental appraisal accompanying the planning application. This should include consideration of natural drainage patterns, base flows/volume, retention/run-off rates and potential changes to water quantity. Any required mitigation measures and proposed monitoring should also be detailed in the Environmental Statement or environmental appraisal accompanying the planning application.

12. When constructing roads, drainage ditches and trenches, drainage should not be directed into adjacent catchments but retained within the existing catchment.

13. Restoration or reseeding of access routes should be considered as routes can become degraded as work progresses.

14. Bog Mats or Ground Guards are recommended for use as ground protection solutions for creating long term temporary access roads and trackways onto sites, limiting the impact on the environment as they limit surface degradation.

15. Any potential pollution risk which could affect water quality should be considered and mitigation measures implemented to prevent deterioration in water quality and pollution incidents. This includes sediment run-off, soil or peat erosion, management of chemicals and oils, etc. (see also point 17 below). This should be considered for operations at all stages of development including pre- and post-construction.

16. Mitigation measures to prevent pollution to watercourses should be outlined in the application and/or documents for the forestry works prior to work starting onsite. Any mitigation measures implemented should be checked regularly, maintained and improved if deterioration in water quality or potential pollution pathways occur.

17. Sustainable drainage (SUDs) options should be considered, such as settlement ponds and designated filtration areas.

18. Consideration should be given to the use of food grade oils within turbines in close proximity to watercourses. The use of food grade oils within other plant and vehicles should also be considered depending on the risk to the drinking water catchment.

19. Watercourses that feed into any watercourses or reservoirs that Scottish Water abstracts from should be considered when developing new road or access infrastructure. Any crossing of these watercourses should be kept to a minimum. Pollution prevention measures should be put in place at each crossing point and silt traps, or equivalent, should be installed at regular intervals to minimise the risk from pollution. Any waste must be removed safely from site for the required treatment and disposal.

20. Once constructed, site roads and access routes should be regularly maintained to ensure minimal erosion, and hence run-off and pollution, from the road surface. Avoid using material resulting in metallic, sulphide-rich or strongly acidic polluted water run-off, ideally using inert materials with low erodibility

21. No refuelling or storage of fuel or hazardous materials should take place within the drinking water catchment area. If this can be demonstrated to be impracticable, then the appropriate Pollution Prevention Guidelines (PPGs) or updated Guidance for Pollution Prevention (GPPs) should be followed. This includes, GPP 2: Above ground oil storage tanks, GPP 5 Works and maintenance in or near water, PPG 6: Working and Construction and Demolition Sites, GPP 8: Safe storage and disposal of used oils, GPP 21: Pollution incident response planning and PPG 22: Incident response – dealing with spills. Rather than 10m buffers from watercourses, we would recommend 50m buffers are applied to watercourses and 50m applied to spring, well or borehole. Oil storage should be in accordance with The Water Environment (Oil Storage) Regulations (Scotland) 2006. There should be dedicated oil storage areas created. Spill kits should be located within all vehicles, plant and high risk areas, as well as the consideration and use of nappies and booms.

22. Waste storage, concrete preparation and all washout areas should not be within the drinking water catchment area. If this can be demonstrated to be impracticable then this should be in dedicated areas 50m from a watercourse and designed to be contained and to prevent escape of materials/run-off to the environment.

23. Welfare/waste water facilities should preferably be located outside the drinking water catchment. If not practicable, then portable toilets should be used and waste disposed of off-site. Alternatively secondary treatment and soakaways should be used and, if required, a sampling chamber installed and sampling programme agreed. The proposed method of managing welfare and waste water facilities should be detailed in the Environmental Statement or environmental appraisal accompanying the planning application. If sampling is required, Scottish Water should be contacted via **PlanningConsultations@scottishwater.co.uk** in the first instance.

24. Any proposed abstractions for activities such as welfare facilities or cement batching plants should be detailed in the Environmental Statement or environmental appraisal accompanying the planning application.

25. Induction training should be given to all personnel on-site and should include Scottish Water site sensitivities in relation to drinking water catchments and assets (see below), as well as spill response as outlined in PPG 22: Dealing with spills.

26. Construction and Environmental Management Plans, Pollution Prevention and Incident Plans, Risk Assessment Method Statements and Contingency Plans and other associated documents should include the Scottish Water Customer Helpline Number **0800 0778 778** and the local contact details.

Protecting drinking water in peatland areas

27. When peat is present within the proposed area of activity the Environmental Statement or environmental appraisal accompanying the planning application should include an assessment on the potential release of colour, dissolved organic carbon and total organic carbon as a result of changes to hydrology and/or physical disturbance. This should cover the construction and post-construction phases.

28. Excavations and ground disturbance in areas of deep peat should be avoided. Deep peat is considered to be peat greater than 0.5m deep as stated in Good Practice During Windfarm Construction, 2015 (joint publication by Scottish Renewables, Scottish Natural Heritage, SEPA, Forestry Commission Scotland and Historic Environment Scotland).

29. The natural hydrology within peat should be maintained and/or restored. This should be taken into account when designing the turbine foundations, crane hardstanding areas, access tracks and cable trenches, etc. Any necessary measures to maintain natural drainage of peat and sub-surface hydrology, such as tailored drain spacing on access tracks, should be implemented as part of the design of the development.

30. Scottish Water requests that, where possible, access tracks in the drinking water catchment are constructed as floating tracks with adequate provision for maintaining existing drainage patterns.

31. Exposed soils and peat can release sediment, colour and dissolved organic carbon. The use of geotextiles, turf replacement and/or reseeding, should be undertaken as soon as possible.

32. Restoration of any degraded peat should be considered for areas within the drinking water catchment.

33. Turves should be carefully removed and stored vegetative side up so they can be placed back over any excavated soils to ensure the soils surface stabilises and recovers as quickly as possible

Protecting drinking water due to forestry activity

34. An assessment of any forestry activity, including felling, planting or other activity, likely to affect the drinking water catchment should be included in the Environmental Statement or environmental appraisal accompanying the planning application. Any specific mitigation measures should be identified and incorporated into the Construction Environmental Management Plan for the site prior to works commencing.

35. The Environmental Statement or environmental appraisal accompanying the planning application should include details on the harvesting/clearance process for any felling/woodland removal. The least disturbing method/s should be selected where possible.

36. Any historic drains or ditches within the windfarm area that discharge directly to a watercourse in the drinking water catchment should be blocked and slowly discharged to a buffer area in line with current Forestry and Water Know the Rules booklet. Where possible, this should be undertaken in advance of any work being carried out on-site, to provide protection for watercourses during site activities.

Monitoring requirements to protect drinking water quality

37. A water sampling programme shall be established and agreed with Scottish Water. This should assess the baseline water quality for a minimum of one year prior to any activities commencing on-site where possible, including ground investigations and any felling activities, to allow an accurate understanding of baseline conditions at the site. Water sampling should continue during construction and then post-construction for a minimum of one year. Following completion of one year of sampling post-construction, this should be reviewed to determine whether this should continue for a further agreed period. The parameters, frequency and sampling locations will also need to be agreed with Scottish Water. This monitoring will establish if any decline in water quality can be attributed to the development. It may also be necessary to establish trigger levels to determine when any potential issues should be reported to Scottish Water.

38. During activities, a programme of daily visual inspection of the watercourses, flow conditions (i.e. high, medium, low, or no flow), prevailing weather and any other pertinent observations, will be required to be implemented. The results should be recorded and the information submitted to Scottish Water (i.e. in a monthly progress report). This should be undertaken when water quality samples are taken if sampling has been agreed as necessary. Proposals for monitoring should be submitted to **protectdwsources@scottishwater.co.uk**

39. The appointed Ecological or Environmental Clerk of Works should be accredited with the Association of Environmental and Ecological Clerk of Works (AEECoW) and should have relevant knowledge and experience to provide advice and monitor compliance with measures for the protection of water quality in relation to abstractions for water supply.

40. Depending on the vulnerability of the public water supply, Scottish Water may request that a dedicated Environmental Manager be appointed and present on-site to assess and monitor any effects caused by the development.

Guidance documents

41. Please ensure that appropriate Guidance Documents are followed, including:

- Good Practice during Wind Farm Construction, Version 3. SNH/SEPA/Scottish Renewables/Forestry Commission Scotland (September 2015).
- Floating Roads on Peat. Forestry Civil Engineering and SNH. (August 2010).
- Constructed tracks in the Scottish Uplands, 2nd edition. SNH (June 2013).
- The UK Forestry Standard – The Governments approach to Sustainable Forestry 2017
- Forestry and Water Scotland (http://www.confor.org.uk/resources/forestry-water-scotland/guidance-documents/)
- General Binding Rules under the Controlled Activities Regulations (see The Water Environment (Controlled Activities) Scotland Regulations 2011 (as amended) A Practical Guide, Version 8.3 February 2019
- SEPA Pollution Prevention Guidance (http://www.sepa.org.uk/regulations/water/guidance/).
- CREW Rural Sustainable Drainage Systems (visit https://www.crew.ac.uk/sites/www.crew.ac.uk/files/sites/default/files/publication/Rural%20SuDS%20Design%20and%20Build%20Guide%20December%202016.pdf)

Protecting Scottish Water assets

42. If an activity associated with any third party works is located within the vicinity of an existing Scottish Water asset, it is essential that these assets are protected from damage. To this end, the developer will be required to comply with Scottish Water's current process, guidance, standards and policies in relation to such matters.

43. Copies of Scottish Water's relevant record drawings can be obtained from the undernoted Asset Plan Providers. This is distinct from the right to seek access to and inspect apparatus plans at Scottish Waters area offices, for which no charge is applied.

Site Investigation Services (UK) Ltd
Tel: 0333 123 1223
Email: sw@sisplan.co.uk
www.sisplan.co.uk

National One-Call
Tel: 0844 800 9957
Email: swplans@national-one-call.co.uk
www.national-one-call.co.uk/swplans

Cornerstone Projects Ltd
Tel: 0151 632 5142
Email: enquiries@cornerstoneprojects.co.uk
http://www.cornerstoneprojects.co.uk/index.php/scottishwaterplans

44. It should be noted that the site plans obtained via the Asset Plan providers are indicative and their accuracy cannot be relied upon.

45. It is recommended for EIA's, housing and mixed developments that the developer submits their proposals to the **Scottish Water Development Enablement Team** via the online portal - https://swastroprodweb.azurewebsites.net/home/default - for further advice if assets are shown to be located in the vicinity of the proposed development, and where the exact location and the nature of the infrastructure shown could be a key consideration for the proposed development. An appropriate site investigation may be required to confirm the actual position of assets in the ground. Scottish Water will not be liable for any loss, damage or costs caused by relying upon plans or from carrying out any such site investigation.

46. Proposals for Forestry, Hydro Projects, Mining/Quarries, Peatland Restoration and Utility Projects should be sent to the HAUC Diversions Team via the online portal - https://swastroprodweb.azurewebsites.net/home/default for further advice if assets are shown to be located in the vicinity of the proposed development, and where the exact location and the nature of the infrastructure shown could be a key consideration for the proposed development. An appropriate site

investigation may be required to confirm the actual position of assets in the ground. Prior to any activity commencing, all known Scottish Water assets should be identified, located and marked-out. Please note that Scottish Water records are indicative only and it is your responsibility to accurately locate the position and depth of these pipes on site before preparing and submitting your plans. No intrusive site investigation works (e.g. trial holes) should be undertaken without written permission from Scottish Water.

47. Scottish Water requires Risk Assessment Method Statements (RAMS) and Safe Systems of Work (SSoW) to be prepared and submitted in advance to Scottish Water for formal review and acceptance. These documents shall consider and outline in detail how existing Scottish Water assets are to be protected and/or managed for the duration of any construction works and during operation of the development if relevant. These documents must be submitted to Scottish Water for formal prior written acceptance.

48. The developer shall obtain written acceptance from Scottish Water where any site activities are intended to take place in the vicinity of Scottish Water's assets. The relevant team can advise on any potential risk mitigation measures that may be required.

49. Scottish Water and its representatives shall be allowed access to Scottish Water assets at all times for inspection, maintenance and repair. This will also ensure that the Scottish Water assets are protected and that any Scottish Water requirements are being observed.

50. Any obstruction or hindrance of access to Scottish Water assets should be avoided. The prompt and efficient use and manipulation of valves, hydrants, meters or other apparatus is required at all times. There should also be no interference with the free discharge from water main scours or sewer overflows.

51. In the event of an incident occurring that could affect Scottish Water, including any damage to assets, Scottish Water should be notified without delay, using the Customer Helpline number **0800 0778 778**, and the local contact if known. Scottish Water apparatus should not be interfered with or operated by anyone other than Scottish Water personnel.

52. Minimum Distances of Sewers/Water Mains from Buildings/Structures/other Obstructions – There are two critical issues relating to how close you can build to water mains and sewers.

    1. Scottish Water has a legal right of access in order to maintain and repair assets and there are minimum distances required in order to facilitate future SW access to water mains and sewers. No buildings, structures or any other obstructions that will restrict our access or put at risk the integrity of the assets is permitted within this distance.
    2. For pressurised pipes there is a recommended distance to be used in order to protect adjacent buildings and structures should the asset burst. This is the recommended distance to minimise the risk of damage to adjacent properties and structures in the event of a water main failure. It is suggested that this distance may include garden areas but should not include inhabited structures.

    The details of these requirements should be confirmed with Scottish Water as an early part of the design process.

53. Stationary plant, equipment, scaffolding, construction or excavated material, etc. should not be placed over, or close to, any Scottish Water assets without the prior written consent of Scottish Water which may be withheld depending on circumstances on-site.

54. Special care should be taken to avoid the burying of Scottish Water assets or the obstruction of sewers or manholes with fill or other material. Arrangements for altering the level of any chambers should be agreed in advance with Scottish Water and these should be constructed in accordance with Scottish Water requirements. The cost of any work to Scottish Water assets will be met by the project developer.

55. Excavation works (e.g. of wind turbine foundations) should not be carried out in the proximity of a water or waste water main without due notice having been given to Scottish Water and prior written acceptance obtained. The developer will comply fully with any Scottish Water specific site requirements.

56. Any tree planting associated with the development (e.g. compensatory planting or screening etc.) should be undertaken in line with Water for Scotland 4th Edition 2018 and Sewers for Scotland 4th Edition 2018 to ensure that Scottish Water's assets are not put at risk by future growth of tree roots.

57. Vibration in close proximity to Scottish Water pipelines or ancillary apparatus should be managed in accordance with British Standard 5228-1:2009 (Code of practice for noise and vibration control on construction and open sites). The predicted levels of vibration should be agreed in advance with Scottish Water as part of the risk assessment and method statement and agreed vibration monitoring arrangements will be required.

58. The developer will consider the possibility of increased loading on Scottish Water apparatus and measures will be taken to eliminate or mitigate increased loading on assets. Care should be taken to identify the exact location (line and level) of any assets, which may be crossed by vehicles on the access route to the site and crossing points will be engineered to the requirements of Scottish Water. Any pipe crossing proposals are subject to prior written acceptance by Scottish Water.

59. Scottish Water will not accept liability for any costs incurred in fulfilling any of the above requirements during the development planning, construction or operational phases, either by the developer, the developer's associates, contractors or any other person or organisation involved in the project.

60. If the developer damages any Scottish Water asset they will be held liable for any costs resulting from this.

61. Scottish Water may require costs associated with the development to be reimbursed by the developer or the developer's agents.