



Water Policy Unit,
SEPA Corporate Office,
Erskine Court,
Castle Business Park,
Stirling,
FK9 4TR

29th April 2010

Dear Water Policy team,

The Salmon & Trout Association (S&TA) is grateful for this opportunity to respond to SEPA's draft sub 100 kilowatt run of river hydropower schemes Guidelines.

S&TA was established in 1903 to address the damage done to our rivers by the polluting effects of the Industrial Revolution. For 107 years, the Association has worked to protect fisheries, fish stocks and the wider aquatic environment on behalf of game angling and fisheries. In 2008 it was granted charitable status. S&TA's charitable objectives empower it to address all issues affecting fish and the aquatic environment, supported by strong scientific evidence from its scientific network. Its charitable status enable it to take the widest possible remit in protecting salmonid fish stocks, and the aquatic environment upon which they depend.

We would like to make the following comments to specific questions:

- 1. Taking account of the mitigation described in Part B, do you agree that sub-100 kilowatt schemes identified as provisionally acceptable according to the criteria described in Part A will not cause deterioration of the water environment?*

S&TA has concerns over what constitutes a 'degraded part of the water environment'. Under the Water Framework Directive, there is a responsibility to achieve good ecological status or good ecological potential in all water bodies.

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Adverse impact on the environment from badly constructed or sited hydropower schemes could jeopardise this responsibility.

Small, steep streams could well be important locally for spawning salmonid species. In particular, one of the outcomes of the 1st International Sea Trout Symposium at Cardiff University in 2004 was the importance of small, sometimes tiny, streams for sea trout spawning.

Overall improvement of the aquatic environment would have to be significantly evidenced. For example, where a presently impassable obstruction could accommodate a hydropower scheme incorporating a new fish pass might constitute environmental improvement. However, so might total removal of the obstruction.

S&TA would recommend that, as well as prospective developers contacting SEPA at an early stage in the planning process, they should also contact other local stakeholders, especially fisheries interests.

- 2. Are there other circumstances under which you think sub-100 kilowatt schemes could be developed that will not (cumulatively or individually) pose a risk to the water environment?*

S&TA would not support any other circumstances under which sub-100 kilowatt hydropower schemes would not pose a risk to the aquatic environment. On the contrary, we are particularly concerned that other EU countries are decommissioning hydropower schemes in the light of addressing WFD objectives, while the UK seems determined to encourage development, despite evidence that sub-100 kilowatt installations can have individual and cumulative impacts on the environment, particularly fish passage. S&TA would rather see a programme of removing redundant man-made obstructions wherever possible to improve the connectivity of river systems for all water-dependent biodiversity.

- 3. Do you find the checklist format for setting out the criteria for identifying provisionally acceptable sub-100 kilowatt schemes helpful? Please make any suggestions you may have for how SEPA could make the information clearer to users.*

S&TA would be concerned if too much emphasis is placed on generic criteria. We believe that hydropower schemes should be assessed within an integrated catchment management plan with the objective of reaching good ecological status as defined by the WFD. Each hydropower scheme should therefore be assessed on an individual basis, however closely aligned its situation may be to the generic criteria.

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4. *Do you agree that the draft criteria on the efficiency of scheme of 100 kilowatts or more (in terms of energy output per length of river stream affected) will help; 1) deliver Scottish Ministers objective of optimising the use of the resource, 2) ensure deterioration of status is not caused where there are significantly better, 3) environmental options for generating the same quantity of renewable energy?*

Again, S&TA is concerned about the emphasis placed on generic criteria. In particular, we are unconvinced of the public benefit derived from present cost benefit analysis of hydropower schemes in terms of environmental impact. We believe that full valuation techniques of the benefits derived from ecosystem services should be established for all work associated with the aquatic environment, and that these should also be applied to the potential damage that developments, such as hydropower schemes, could cause.

5. *Do you agree that the mitigation identified will help achieve Scottish Ministers' objective of minimising the adverse impacts of hydropower scheme developments on the water environment?*

S&TA has serious concerns over some of these generic criteria as follows:

- Evidence suggests that it is impossible to set generic flow criteria for all hydropower schemes. This is because migratory fish require greater flow to encourage migration over obstructions the higher up the river system they travel. The flow requirements for a fish in upland areas to encourage fish to reach spawning habitat is therefore greater than at the first obstructions they encounter in the lower river on their homeward migrations.
- We have grave concerns over the suggestion that because habitat upstream of a proposed hydropower development might not be suitable for fish, it should be written off as such. The WFD requires water bodies of less than good status to be raised to such, and therefore every effort should be made to abide by WFD objectives in water bodies which fish might normally reach (not obstructed by naturally impassable barriers).
- Fish held up at barriers on both outward and inward migrations have the potential for serious impact on fish stocks. Migrating smolts held up on downward migrations are susceptible to increased predation, and evidence suggests that the cumulative effect of multiple obstructions can lead to the loss of the fishes' ability to smoltify and successfully enter seawater. Low flow barriers to upwardly migrating adults can stop them reaching prime spawning habitat, so impacting on the overall productivity of the river system.
- We are unconvinced of the efficiency of many fish passes, many of which are designed only for the passage of salmonids, whereas the WFD requires management for all fish species likely to be present in a river system –

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particularly relevant to eels. Wherever practical, S&TA would like to see the adoption of rock ramp or natural channel passes, which allow more efficient migration routes for all relevant fish species and also aquatic invertebrates, so greatly improving the connectivity of river systems.

- S&TA is unconvinced that any hydropower turbine is entirely fish friendly, and therefore all turbines should be screened with appropriate sized mesh set at correct angles so that fish are not sucked against screens. This is particularly important for downward migrating smolts and eels.

6. Do you agree that, in general, the mitigation identified is likely to be practicable? If not, please give reasons.

Once again, S&TA believes that hydropower schemes must be assessed on an individual basis to ascertain whether or not mitigation is practical. Where mitigation is assessed as being impractical, the precautionary approach must be adopted and therefore there must be an assumption against allowing development. Indeed, we believe that the WFD and, where relevant, the Habitats Directive (under which Atlantic salmon and eels are designated Annex 1 protected species) demands this.

7. Do you think that there other practicable measures that you think could be taken to achieve an equivalent or greater level of mitigation? If yes, please describe.

We refer to answers already given. S&TA believes that to evaluate individual hydropower schemes in isolation to the requirements of the whole catchment – and all potential environmental stressors – is bad management practice. It will therefore be necessary to assess whether a particular hydropower scheme can fit into an overall catchment management strategy without impact. The amount of energy which can be generated by sub 100 kilowatt run of river hydropower schemes is likely to be so low as to make any significant environmental impact totally unacceptable. Indeed, under the WFD, it is also likely to be illegal, especially if full ecosystem service valuations are undertaken.

Yours sincerely,



Paul Knight
Chief Executive

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