Water Use

Supporting Guidance (WAT-SG-68)

Assessing Significantly Better Environmental Options

Note

If you need help in applying this method, you should contact SEPA's *Water Unit*.

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Update Summary

Version	Description
v1.0	Unpublished draft document with temporary access available via the *Crosstube* folder.
v2.0	First published version of document, based on: *WAT-SG-68 (v10) 2009-07ref checkedMW.doc*
v3.0	Expired CMS links reviewed and updated.
v3.1	Periodic review, contact details & WAT-FORM-28 title revised

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1. Scope

This supporting guidance is designed for use in conjunction with *WAT-RM-34: Derogation Determination - Adverse Impacts on the Water Environment* when deciding whether or not there is:

- a significantly better environmental option for achieving the benefits expected from a proposal; and
- sufficient evidence to conclude that significantly better environmental options would be technically infeasible or disproportionately expensive.

2. Background

Where there is a reasonable likelihood that a proposal would:

- result in deterioration of status; or
- compromise the future achievement of a Ministerial objective for improving the water environment (e.g. an objective set out in a river basin management plan)

SEPA cannot authorise that proposal unless the following test is passed[1]:

> for reasons of technical infeasibility or disproportionate cost, the benefits that would result from the proposal must not be achievable by other means, which are a significantly better environmental option.

[1] This test must be passed to comply with paragraph 7 of Article 4 of the Water Framework Directive

3. Is it a Significantly Better Environmental Option?

In assessing whether an alternative option is a significantly better environmental option, SEPA will take into account the significance of the adverse environmental impacts associated with the proposal[2] compared with the significance of those associated with the alternative option.

An option may be a significantly better environmental option if:

- the benefit it delivers is at least equivalent to the benefit that would be delivered by the proposal;
- its environmental cost is significantly less than the environmental cost of the proposal (SEPA will assess the environmental cost of a proposal by identifying the significance of the proposal's adverse impacts using the method set out in *WAT-SG-67: Assessing the Significance of Impacts - Social, Economic, Environmental*); and
- it is economically viable and hence a realistic option.

For there to be a significantly better environmental option, the adverse impacts of the proposal must be of reasonably high significance. If the impacts of a proposal are not of reasonably high significance, an alternative option might be a slightly or moderately better option but it cannot be a significantly better environmental option.

For example, if the adverse impacts of a proposal are of very low or low significance, an alternative option may be a better environmental option (e.g. if its impacts are of negligible or very low significance) but it cannot be a significantly better environmental option: The impacts of the proposal are not sufficiently significant for the alternative to be a significantly better option.

Table 1 below provides an indicative guide to deciding if an alternative option is a significantly better environmental option.

[2] Supporting guidance *WAT-SG-67* describes the method SEPA uses to judge the significance of impacts on social, environmental and economic factors

Table 1 Indicative guide to assessing whether an alternative option is a significantly better environmental option

Significance of adverse impacts of proposal						
Alternative option	**Proposal**					
	Neg.	V low	Low	Moderate	High	V high
Negligible	No	No	No	Yes	Yes	Yes
Very low	No	No	No	Yes	Yes	Yes
Low	No	No	No	A	Yes	Yes
Moderate	No	No	No	B	Yes	Yes
High	No	No	No	No	C	Yes
Very High	No	No	No	No	No	D

Key:
"No" means the alternative option is not a significantly better environmental option.
"Yes" means the alternative option is a significantly better environmental option.
"A" means the alternative option is a significantly better option if the proposal would have two or more adverse impacts of moderate significance.
"B" means the alternative option is a significantly better option if the proposal would have two more adverse impacts of moderate significance than the number of moderate significance adverse impacts caused by the alternative option.
"C" means the alternative option is a significantly better option if the proposal would have one more impact of high significance than the number of high significance adverse impacts caused by the alternative option.
"D" means the alternative option is a significantly better option if the proposal would have one more impact of very high significance than the number of very high significance adverse impacts caused by the alternative option

4. Identifying Alternative Options

For the purpose of this guidance, an 'option' is defined as an alternative means of securing the benefits expected from a proposal.

When applying the tests and as a minimum, SEPA will require appropriate consideration of the relevant options listed in Table 2 below.

Table 2 Options to be considered in relation to different types of activity

Purpose of proposal	Option A	Option B	Option C
1. Modifications for hydropower Options should provide equivalent energy benefits	Use an alternative site for the hydropower development	Improve the output of existing hydropower schemes	Use an alternative but comparable renewable energy technology
2. Modifications for flood defence Options should be able to provide an equivalent level of flood defence	Use catchment measures to reduce and dissipate flood flows	Locate the asset in need of protection at an alternative site	
3. Modifications for water supply Options should provide an equivalent volume of supply requiring similar or less treatment	Use water from another existing source of supply with available capacity to meet demand	Develop a new source of supply with available capacity to meet demand	
4. Abstraction for land irrigation Options should provide for the production of crops	Use water from another existing source of supply with available capacity to meet demand	Develop a new source of supply with available capacity to meet demand	Switch to crops that have lower water needs
5. Modifications for transport infrastructure Options should provide for the relevant transport objective	Locate the transport infrastructure elsewhere	Upgrade or otherwise make better use of the capacity of existing transport infrastructure	
6. Point source discharges to dispose of effluents Options should provide for the management of effluents	Locate the activity in an area where the effluent will not pose a risk	Discharge effluent (e.g. via a trunk sewer) to a part of the water environment with sufficient carrying capacity to accommodate it or where the adverse impacts of the discharge will be of much lower significance	

5. Feasibility and Cost of Alternative Options

SEPA will consider the derogation test for alternative options failed if:

- it is likely that there is at least one significantly better environmental option; and
- there is a reasonable likelihood that a significantly better environmental option is not technically infeasible or disproportionately expensive.

Failing the derogation test does not imply that an applicant is in anyway obliged to implement the option.

A significantly better environmental option would only be disproportionately expensive if its total cost (financial cost + environmental cost) would be out of proportion to the benefit it would deliver. SEPA believes that it is reasonable to assume that this would not be the case under either of the following circumstances:

a) developments that are reasonably comparable to the option have been undertaken in the recent past; are known to be being undertaken or known to be being planned; or

b) there is no evidence that the financial cost of the alternative option is likely to be substantially higher than the financial cost of the proposal.

SEPA also considers it reasonable to assume that an alternative option is an economically viable and, hence, realistic option (see *Section 3*) if points (a) and (b) above apply.

SEPA believes it reasonable to conclude that there is sufficient evidence that an alternative option is disproportionately expensive if:

- points (a) and (b) above do not apply;
- there are good reasons to believe that the financial cost of the option would be substantially higher than the financial cost of the most similar developments (recently undertaken, being undertaken or being planned) to the option; and
- there would be no proportionately greater benefit to off set the higher relative economic cost of the option.

Unless all three of these points apply, SEPA believes that it cannot reasonably conclude that an option is disproportionately expensive.

SEPA also believes that it would be reasonable to conclude that an option is technically feasible if:

- developments that are reasonably comparable to the option have been undertaken in the recent past; are known to be being undertaken or known to be being planned; and
- any particular environmental resources or characteristics on which the option relies in order to deliver at least an equivalent benefit to that of

the proposal are present in the geographic area in which the option would need to be located.

There would be sufficient evidence to conclude that an option would be technically infeasible if:

- any particular environmental resources or characteristics on which the option relies in order to deliver at least an equivalent benefit to that of the proposal are absent in the geographic area in which the option would need to be located; or
- there is good reason to believe that the option could not be delivered using any established techniques.

For example, when considering whether there may be significantly better locations for an activity, SEPA will take into account factors such as:

- the occurrence of waters with hydro-geographical characteristics likely to be capable of supporting the proposed activity;
- studies conducted by the sector or by independent experts which provide estimates of the capacity for development of the activity within Scotland; and
- the frequency of enquiries and applications made to SEPA about the development of similar activities at other sites.

It will not take into account very detailed technical or operational considerations which may favour some sites over others in terms of costs, benefits or technical challenges.

SEPA will not determine a significantly better environmental option to be technically infeasible or disproportionately costly purely on the basis that it would be beyond the financial resources of the applicant or operator to implement.

Table 3 below provides an example of the considerations relevant to determining whether there are significantly better environmental options to a hydropower proposal that are technically feasible and not disproportionately expensive.

Table 3 Examples of factors considered when assessing alternative options to a proposed hydropower scheme

	Option not a significantly better environmental option; or excluded for reasons of disproportionate cost or technical infeasibility	Option a significantly better environmental option & cannot be excluded for reasons of disproportionate cost or technical infeasibility
Use of alternative sites	Evidence that: • adverse impact of a scheme would be higher at other locations because of the particular characteristics of the site (e.g. the proposal is to utilise a pre-existing impoundment); or • there are likely to be very few sites where a comparable size scheme could be developed and the significance of proposals adverse impacts derives primarily from the scale and nature of the proposal rather than from any particular sensitivity or importance of the site.	Evidence that: • adverse impact of proposal derives primarily from the particular sensitivity or importance of the site rather than just from the scale or nature of the proposal itself; • there are a reasonable number of potential alternative sites; [e.g. independent studies on the capacity for similar scale hydropower schemes in Scotland; expert opinions on the capacity for similar scale hydropower schemes stemming from industry representatives; information on the hydrological characteristics of undeveloped rivers; etc]; and • other sites are feasible and not disproportionately costly to develop [e.g. knowledge of significant numbers of applications for comparable size schemes in the process of being made or being determined].
Use of a comparable and established renewable energy technology known to have considerable capacity for development in Scotland	Evidence that: • the proposed scheme has significant storage and can therefore generate on demand unlike wind or other renewables	Evidence that: • wind farms capable of producing at least the equivalent energy output have potential to be developed [e.g. knowledge of applications; recent development trends; etc].
Improve the output of existing hydropower schemes	Evidence that: • the energy output of the scheme is large; or • output has been maximised at all existing medium and large schemes.	Evidence that: • the energy output of the scheme is small or very small; and • output has not been maximised at all medium and large schemes.

References

Key Documents

WAT-RM-34: Derogation Determination - Adverse Impacts on the Water Environment

WAT-SG-67: Assessing the Significance of Impacts - Social, Economic, Environmental

Other Derogation Documents

WAT-RM-41: Derogation Determination – Improvements to the Water Environment

WAT-SG-68: Assessing Significantly Better Environmental Options

WAT-SG-81: Derogation Determination Form Guidance

WAT-FORM-28: Derogation Decision Document

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