

**Department for Environment, Food and Rural Affairs
May 2008**

**Impact Assessment of Transposition Options for Article
6 of the Groundwater Daughter Directive**

1. Rationale and objectives of Government intervention

The aim of the proposal is to ensure that the UK meets its Treaty obligations to transpose the new Groundwater Directive (GD), 2006/118/EC, into UK law.

The Water Framework Directive (WFD) 2000/60/EC, adopted on 22 December 2000, establishes a framework for Community action in the field of water policy, covering both quality and quantity¹. The WFD sets out a number of general principles with the aim of progressively reducing groundwater and surface water pollution. Article 17 of the WFD requires Member States to take “*all measures to prevent and control groundwater pollution*”, including a prohibition on direct discharges of non-hazardous pollutants. It also requires the European Commission to submit proposals for specific measures to prevent and control pollution with the aim of achieving the objective of good chemical status of groundwater.

The GD was adopted on 12 December 2006. The GD fulfils the requirement at Article 17 of the WFD for “*measures to prevent and control groundwater pollution*”. The GD needs to be transposed in the UK by 16 January 2009. Articles 3 – 5 of the GD focus on establishing the chemical status of groundwater bodies and on the identification of significant and sustained upward pollution trends. These aspects are closely linked to the surface water standards and programmes of measures; they will be carried forward separately as part of the WFD implementation and included within the impact assessments relating to WFD implementation. Article 6 of the GD clarifies the WFD objective to ‘prevent or limit’ the input of pollutants into groundwater. It requires Member States to prevent inputs of hazardous substances to groundwater and to limit inputs of non-hazardous substances to avoid pollution, subject to various exemptions. Article 6 requires immediate transposition to enable the EA to commence its statutory four-yearly review of authorisations on schedule for the wider WFD implementation programme, and in so doing to provide for GD Article 6.

In order to understand the implications of the GD, the Department for Environment, Food and Rural Affairs (DEFRA) has contracted Risk & Policy

¹ Implemented through the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003.

Analysts Ltd (RPA) and ADAS to develop a Regulatory Impact Assessment (RIA). An Initial RIA was prepared on 7 March 2003, based on the draft Proposal available at the time, and made available to stakeholders. A Partial RIA was prepared in October 2003, following publication of the Proposal, issued to stakeholders and attached to the Explanatory Memorandum submitted with the Proposal to Parliament in December 2003. The Partial RIA was revised and updated in May 2006, following developments to the proposal in negotiations. A Post-Conciliation Partial RIA, reflecting the final version of the proposal for the Directive, was prepared in December 2006².

This paper examines the potential impact of the options for transposition of Article 6 of the GD, as set out in Defra’s draft consultation paper. The transposition proposals will be the subject of public consultation; this paper is intended to inform such a consultation exercise. Following consultation, the Post-conciliation Partial RIA will be revised to take account of any issues raised in consultation.

2. Policy options considered

Transposition of Article 6 of the GD takes place against a background of an existing regime relating to groundwater. This is summarised in Table 1.

Table 1: Existing regime relating to groundwater	
Measure	Main elements
Groundwater Regulations 1998	Implement Groundwater Directive 80/68/EEC. Introduce a regime for authorising disposal of listed substances to land; gives powers to control non-disposal activities to control listed substances. Under the GD, Directive 80/68/EEC will remain in force until 22 December 2013. Permits under the Pollution Prevention and Control and Waste Management regimes need to comply with the Regulations.
Water Resources Act 1991	Prohibits un-consented entry into groundwater of any poisonous, noxious or polluting matter or solid waste.

The requirements of the GD are not likely to result in significant changes to the regulation of groundwater, compared to the existing regime. The main changes are summarised in Table 2.

² RPA and ADAS (2006). Post Conciliation Partial RIA for groundwater proposals under Article 17 of the WFD (prepared for the Department for Environment, Food and Rural Affairs)

Table 2: Main changes in the regulation of groundwater resulting from the WFD as clarified by the GD		
Existing regime requirements	GD Article 6 requirements	Comments
1. Substances and activities covered		
Prevent introduction of List I substances into groundwater and limit the introduction of List II substances. Nitrates and radioactive substance discharges are not covered	Prevent all inputs of hazardous substances and limits inputs of all other substances to prevent pollution. Nitrates and radioactive substances are not specifically exempt; diffuse pollution should be taken into account where possible.	In practice, List I already includes most substances likely to be considered hazardous in groundwater. Non-hazardous substances and activities covered by the 'limit' requirements of the GD could be wider than under the current regulations. Measures are already under way under the Nitrates Directive to prevent pollution from nitrates. Diffuse pollution is being addressed under other WFD workstreams.
2. Measures to be used		
Requires authorisation of discharges to groundwater, and disposals to land, of listed substances and to take 'all measures necessary' to prevent any indirect discharges of List I substances. It also allows Ministers to create codes of practice for potentially polluting activities	Requires Member States to take 'all measures necessary', subject to a range of exemptions relating to practicability, impact and overall benefit. It does not specify what the measures should be. It amends the WFD prohibition on direct discharges to prevent discharges of hazardous substances and limit discharges of non-hazardous substances.	The GD provides greater flexibility for non-hazardous substances, which will be addressed on a risk basis. It enables more modern regulatory approaches than authorisation to be used.
3. Exemptions		
Excludes 'de minimis' discharges, authorised artificial recharges, discharges of domestic effluents from isolated dwellings not connected to sewers, discharge of radioactive substances	Excludes from prevent and limit requirements direct discharges authorised under the WFD, 'de minimis' inputs, authorised artificial recharge, inputs due to serious accidents or exceptional circumstances, inputs which could not technically be prevented without measures which increase health or environmental risks or are disproportionately costly, or certain water management activities (such as dredging).	The overall range of the exemptions in Article 6 of the GD is broader and more risk-based than in the existing regime. However, activities specifically exempted under the existing regime will not automatically be exempt under Article 6 of the GD, unless they meet one of the Article 6 criteria.

There are three potential options for transposition of the GD. These are:

- (1) *No action: the 1998 Groundwater regulations will remain in place until 2013, with non-listed substances subject to the provisions on groundwater in the WFD. After 2013, all substances will be subject to the WFD provisions on groundwater.*
- (2) *Issue amendments to the 1998 Groundwater Regulations to introduce a single regime covering all substances. Thereafter, the groundwater regulations will be brought into the Environmental Permitting Programme (EPP) in future.*
- (3) *Incorporate the requirements of the GD into the EPP.*

3. Analysis and evidence

This Section assesses the impact of the issues to be addressed in transposing Article 6 of the GD, and the different transposition options, on the potential costs and benefits identified in the Post-conciliation partial RIA.

Overall costs and benefits of the new Groundwater Directive

The main findings of the Post-conciliation Partial RIA were that, overall, the new GD imposes no quantifiable incremental costs (and has no quantifiable incremental benefits) compared with the WFD baseline, of the requirements introduced by the WFD. This is in contrast to earlier proposals, which could have significantly increased costs by introducing common European standards for groundwater rather than a risk-based approach.

In relation to Article 6 of the GD, the Post-conciliation Partial RIA noted that:

Option 2 [the Directive as adopted] also requires the prevention of inputs to groundwater of dangerous substances (from Annex VIII to the Water Framework Directive) which are permitted in some circumstances under the current Groundwater Directive. The practical impacts of this requirement should be the same as for Option 1, as a series of exemptions apply under Article 6(3)...Option 2 also requires Member States to take account of inputs of pollutants from diffuse sources wherever possible. The exemptions under Article 6(3) also apply in these cases.

This analysis will be further tested during the consultation, now that specific options for transposition of Article 6 have been developed. The views of stakeholders will be sought on the potential costs and benefits to them of the options.

Impacts of transposition options

None of the transposition options is expected to result in significant changes to current regulatory practice or to the benefits and costs of the Directive, as identified in the post-conciliation partial RIA. Overall, therefore, **the impact of transposition is expected to be cost-neutral**. However, there are differences between the transposition options, which may have impacts for stakeholders.

Option 1: No action

The **risk** associated with this option is that it could be considered as not fully transposing the GD or the WFD, thus potentially leading to infraction proceedings.

The main **economic benefit** of this option is that there would be no change to the current requirements for stakeholders discharging or depositing listed substances, and no requirement for action by the public authorities. There are not expected to be any significant **environmental benefits** from this option.

There is potential that this Option could give rise to **environmental costs**, if the greater flexibility and risk-based approach, coupled with wider coverage in terms of substances, afforded by the GD is not available to regulators. In particular, the Environment Agency would have less scope to direct its resources according to risk, particularly before 2013 when the 1980 Directive is repealed. There would also be uncertainty as to the action which needs to be taken on direct discharges to groundwater. These are prohibited under the WFD, but the GD clarifies the prohibition in a more risk-based way. Without this clarification, direct discharges to groundwater that currently pose no risks might be replaced by other disposal methods, which could be more harmful to the environment or which could have other knock-on effects, for example in terms of additional water treatment, pollution clean up costs or failure to achieve WFD objectives.

The main **economic cost** to stakeholders would arise from the following:

- direct dischargers of non-hazardous substances could face a prohibition on such discharges under the WFD from 2012 if they are unable to benefit from the risk-based clarification of this requirement, and the accompanying range of risk-based exemptions, afforded by the GD. Such dischargers could incur significant one-off and ongoing costs in seeking alternative treatment options. As direct discharges of non-listed substances are not currently regulated, no information is available on their numbers and the costs cannot be quantified. The number of direct discharges of listed substances is small (around 400); though seeking alternative disposal means in cases which would be prohibited could impose significant one-off and ongoing costs. The public consultation will seek further information on the potential impacts on stakeholders.
- it would not be possible for stakeholders to take advantage of the exemptions introduced by the GD
- it would not be possible for stakeholders and regulators to taken advantage of the more flexible and risk-based approach to authorisation, general binding rules which would be available under the GD, particularly before 2013 when the 1980 GD is repealed. A range of sectors could be affected by this provision, including agriculture and the water industry.

There might also be costs to stakeholders responsible for diffuse pollution, as the WFD requires Member States to introduce measures to prevent or control the input of pollutants from diffuse sources liable to cause pollution. Without the clarification provided by the GD, this requirement could cause uncertainty. The

potential costs cannot be quantified at present; work to characterise the significance of diffuse sources of pollution, for both surface and ground water bodies, is currently being carried out under the WFD.

There would also be costs if two different regimes for the GD and WFD were to run in parallel until 2013 when the 1980 Directive is repealed. This could also result in ongoing costs over this period for stakeholders, in understanding the different requirements and which applied to their activities.

There would also be ongoing costs to the public authorities – in particular the Environment Agency - of operating two separate regimes for groundwater, one for listed substances and another for non-listed substances, until 2013.

Option 2: Issue amendments to the 1998 Groundwater Regulations

There are no significant **risks** associated with this Option.

The main **economic benefits** associated with Option 2, compared to Option 1, are that:

- the more risk-based approach to authorisation could reduce ongoing administrative costs for low-risk discharges and disposals through substitution of authorisation by 'lighter touch' controls, such as general binding rules and regulation. This could result in cost savings for both dischargers and the Environment Agencies over the entire period of operation of the regulations;
- the wider exemptions introduced by the new regulations could potentially reduce both one-off and ongoing costs of compliance for dischargers, compared to Option 1. The current groundwater regime contains a 'de minimis' exemption, which is taken forward in the GD. This will avoid the potential for disproportionate regulation which is introduced by Option 1;
- under Option 2, unlike Option 1, direct discharges of non-hazardous pollutants would not be prohibited. Option 2 would therefore avoid the one-off and ongoing costs to dischargers of finding alternative disposal routes, which could be significant, even though the number of such discharges is small.

As the proposed regulation introduces a flexible approach, such benefits will arise on a case-by-case basis and therefore cannot be quantified at this stage. However, further information will be sought from stakeholders on the potential benefits, as part of the consultation.

The option will also generate **environmental benefits**; it will enable discharges and disposals to groundwater to be managed flexibly, to avoid the risk of pollution of groundwater. As it will apply to all substances, not just those listed under the

current regime, the Environment Agencies will have the flexibility to adapt regulation to take account of any new risks to groundwater as soon as they are identified. By introducing a flexible regime for regulation, the Option will also allow the Environment Agency to focus its activities on the areas of greatest risk to groundwater, increasing its effectiveness in protecting the environment. This will help balance any consequences of the coverage of additional substances, compared to Option 1.

No **environmental costs** are anticipated from this option. A number of stakeholders may face some additional **economic costs** under Option 2 compared to Option 1; however, the costs for these stakeholders are expected to be significantly lower than the costs associated with Option 1:

- *disposers of hazardous substances that might lead to indirect discharges to groundwater not currently included on List I of the existing regulations.* Under the revised regulations, such discharges would be prevented, unless they are subject to the exemptions listed in Article 6(3) of the new Directive. This could give rise to one-off and ongoing costs in seeking alternative disposal methods. However, the EA believes that there are few, if any, such discharges (as most, if not all, hazardous substances are List I) and therefore the costs are minimal;
- *disposers of non-hazardous substances not included in List II of the current regulations that might lead to direct and indirect discharges.* The EA believes that only a few such discharges exist that are not currently regulated, either because the substances are part of a discharge which also includes List II substances or because the discharge will already be regulated under the more general powers of the Water Resources Act. Costs to these stakeholders are expected to be significantly lower under Option 2 than under Option 1. Under the revised regulations, such discharges would be subject to limitations to avoid pollution. Dischargers could incur one-off administrative costs in applying for authorisation. The revised regulations will aim to minimize these costs by enabling the EA to use a flexible approach to regulation, such as general binding rules and registration rather than determination of applications for authorisation and associated cost recovery. As such discharges are not currently regulated, there are no firm data on the numbers of discharges involved. Additional information on the numbers of such discharges will be sought through consultation. Some of these stakeholders may also incur one-off and ongoing costs in implementing controls over the discharges to prevent pollution. In the few cases where discharges of substances not controlled under the current regulations are giving rise to pollution, the introduction of controls to prevent pollution are necessary and proportionate to comply with the WFD and protect groundwater quality.

- Stakeholders with discharges to groundwater which are specifically excluded or exempted from the current regulations.* These comprise discharges relating to radioactive substances; and domestic effluent from isolated dwellings not connected to a sewerage system and away from drinking water sources. Discharges of radioactive materials to groundwater from landfills are already subject to waste management permitting so ending the exemption from groundwater permitting should have no significant effect. Although the exclusion for domestic effluent from single dwellings not connected to mains sewerage would cease, this is not expected to result in significant costs for householders. There is a requirement to consent such discharges under the Water Resources Act which conflicts with the current exemption under the 1980 directive. These discharges are generally low risk. Therefore currently, in line with the modern regulation agenda, the EA does not seek to consent sewage discharges of two or less cubic metres per day unless within a sensitive location or there are particular reasons to impose controls to avoid pollution. There are thought to be several thousand such discharges but records are limited. If control were to be required in particular instances, the revised regulations seek to provide flexibility for the EA to adopt a 'light touch' approach, for example registration, codes of practice and general binding rules. This will regularise the current conflict between different regulations.
- holders of authorisations under the existing regulations.* Option 2 may result in additional one off or ongoing compliance costs for stakeholders with higher risk activities, but reduced costs for those with lower-risk activities. During the four-yearly review of permits under the current regulations, due to begin in 2008, the EA may make changes to the conditions of permits in line with the risk-based approach of the proposed amended regulations. This will be determined on a case-by-case basis, taking account of the risks posed by individual discharges. The costs cannot be quantified at this stage but, because of the limited changes in regulatory practice anticipated and the opportunity to introduce 'light touch' controls, any additional costs would not be expected to be significant.
- diffuse sources of groundwater pollution.* The existing regulations do not directly control diffuse sources of groundwater pollution, although there are powers to enforce statutory codes of practice. Controls are currently in place only over diffuse sources of nitrates from agriculture (under the Nitrates Directive). The amended regulations would retain existing notice powers in respect of diffuse pollution sources and make the potential to enforce codes of practice. This might incur some additional costs to those responsible for diffuse groundwater pollution, in complying with codes of practice or with notices. Such costs cannot be quantified at present; work to characterise the significance of diffuse sources of pollution, for both surface and groundwaters, is currently being carried out under the WFD. However, they are not expected to be significant because of the limited changes in regulatory practice anticipated and the opportunity to introduce 'light touch' controls.

- *public authorities.* The Environment Agency may incur additional costs in regulating discharges of hazardous substances not currently on List I, non-hazardous substances not currently on List II, no longer exempt discharges and diffuse sources. However, the EA believes that such costs are likely to be minimal and indeed could assist with regulation of a small number of known problems; they are also likely to be lower than the costs associated with Option 1. In addition, the flexible approach (such as use of general binding rules and registration) should enable the EA to operate controls over groundwater pollution more cost-effectively.

Option 3: Incorporate the requirements of the GD into the EPP

The main **risk** with this option is that, because extensive guidance and schedules would need to be drafted for incorporation of groundwater into the EPP, there will be a delay in transposing the requirements of Article 6 of the GD in time to commence review of authorisations in 2008.

This option would incur similar costs to, and generate similar benefits as Option 2.

The **benefits** associated with this option compared to Option 2 are:

- Some minor potential cost savings to the public sector by immediately incorporating the GD requirements into EPP, compared with Option 2 (which involves first amending the groundwater regulations and then transferring the regime to EPP).
- Potentially, additional clarity for stakeholders from moving to EPP in one step. However, as permits granted under Option 2 will simply be deemed to be EPP permits once the regime is transferred to EPP, these benefits are not expected to be significant.

These potential benefits are likely to be offset by the likely **costs** compared with Option 2:

- it is likely that, given the extent of guidance that will need to be drafted for groundwater under EPP, transposition of the new Groundwater Directive will not be achieved in time to avoid infringement proceedings;
- this option would be less transparent, as the changes to the existing regime introduced by the GD might be masked by the move into EPP; and
- the fact that the time required for drafting guidance will mean that incorporating groundwater into the EPP cannot be achieved to coincide with

the timetable for review of authorisations under the existing regulations. This could mean that the EA would first have to review authorisations under the existing regulations and then review them again once the GD requirements were incorporated into EPP. This could also give rise to additional administrative and compliance costs for stakeholders. There might also be a risk of infraction proceedings under the WFD if Programmes of measures do not include authorisations updated in line with the WFD/GD.

Conclusion

The relative costs and benefits of the options are summarised in Table 3; the table indicates that Option 2 provides the best overall balance of costs and benefits for transposing Article 6 of the GD.

Option	Benefits	Costs	Risks
1. No action	No changes to existing regime until 2013. Possible environmental benefit from cessation of discharges	Potentially significant costs to stakeholders from cessation of discharges after 2013 Costs to stakeholders and industry from running two parallel regimes until 2013.	Could be considered as not fully transposing Article 6, leading to infraction proceedings
2. Amendment to 1998 Groundwater Regulations	Risk-based approach will allow for flexible and proportionate regulation, with potential cost savings for stakeholders and regulators, particularly from allowing non-hazardous discharges Environmental benefits from focus of regulatory resources on highest risk activities	Some (minor) additional costs up to 2013 for discharges specifically exempted from current regime	None identified
3. Incorporate requirements into EPP	Minor cost savings for public authorities compared to Option 2 Possible greater	Potential additional costs to public authorities and stakeholders since transposition could not be completed in line with the timetable for review of current authorisations	Extent of guidance required to be developed may delay transposition beyond the deadline, risking infraction proceedings

Stakeholders affected

The main stakeholders affected by the transposition of Article 6 of the GD will be:

- stakeholders who are currently authorised to discharge or deposit listed substances to groundwater or deposit listed substances on land. This includes the water industry, waste disposal, agriculture, and certain mining and manufacturing operations;

- stakeholders who currently discharge or deposit non-listed substances. These are likely to be primarily the waste management sector, which is subject to other regulation. However, because these are not currently regulated, there may be other sectors affected. Information on this will be sought through consultation;
- stakeholders whose discharges and deposits are currently exempted from regulation and do not fall into the “de minimis” category. However, light touch regulation should limit any additional costs.