

Application of the environment protection principles to EPA's approvals process

Guideline



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Table of contents

1	Introduction.....	1
1.1	Purpose.....	1
1.2	Legal status.....	2
1.3	Scope.....	2
1.4	The principles.....	2
	Table 1. The principles of environment protection.....	2
2	Application of the principles to EPA's approvals process.....	4
2.1	Relevance of the principles to the approvals process.....	4
	Table 2. Relevance of the principles to proposals for an EPA approval.....	4
2.2	Consideration of the principles during EPA's approvals process.....	5
2.3	Significance of the principles in approval decisions.....	6
2.4	Application of the principles that are often directly relevant.....	7
2.5	Application of the principles that are sometimes directly relevant.....	10
2.6	Application of the principles that are rarely directly relevant.....	14
3	Case studies.....	15
3.1	Case study 1. Sewage treatment plant - project planning stage.....	15
3.2	Case study 2. Landfill - application and assessment stages.....	15
3.3	Case study 3. Co-generation plant - application and assessment stages.....	16
3.4	Further case studies.....	17

1 Introduction

1.1 Purpose

This guideline provides information and guidance on the application of the principles of environment protection (the principles) to EPA's works approval and licensing approval processes. These principles are part of the environmental management and policy framework of the *Environment Protection Act 1970* (the Act).

The guideline is intended to help project proponents understand how EPA expects them to consider the principles when developing proposals and preparing applications for an EPA approval. It describes how EPA applies the principles when it assesses project proposals and makes decisions on approval applications.

EPA has prepared this guideline on the basis of:

- its practice and experience of the principles
- court and tribunal interpretations and applications of the principles in Victoria and other Australian jurisdictions
- some of the published international experience and discussion of the principles.

This guideline is an output of EPA's Approvals Review, completed in early 2013¹.

¹ *Approvals Review Final Report*, EPA Publication 1521, April 2013, page 26, reform G.2.

Application of the environment protection principles to EPA's approvals process

1.2 Legal status

This guideline provides information and guidance about the application of the principles. Its contents are advisory, not legally binding.

The guideline does not constitute legal advice, nor is it a comprehensive statement of the law as it applies to every particular problem or individual - because no one set of circumstances to which one or more of the principles applies is identical to another.

The legal status of the principles is discussed in sections 1.4 and 2.3.

1.3 Scope

The focus of this guideline is on development proposals that require an EPA decision. The guideline, like the principles it discusses, is **generally applicable** to applications for:

- a works approval (under section 19B of the Act)
- an exemption from a works approval requirement (section 19A)
- an emergency approval (section 30A)
- a research, development and demonstration approval (RD&D approval) (section 19D)
- a licensing approval (section 20).

It is **most applicable** to works approval applications, especially those on the 'standard track' assessment pathway.

'Fast track' works approvals (those assessed by EPA as low risk) are unlikely to require a direct application of the principles. The principles are more directly relevant to large, complex or unusual proposals, or those with significant potential impacts on natural resources and the environment.

Since the principles provide the basis for developing statutory policy (State Environment Protection Policies and Waste Management Policies), their practical effect is already built into many statutory policy requirements (e.g. standards and criteria). Accordingly, there is no need to refer more directly to the principles themselves in many assessments. The exception is where there are complicated issues or unusual circumstances that are not adequately addressed by the specific requirements of relevant statutory policies.

RD&D approvals often involve projects that are limited in scale, are of a temporary and investigative nature, and do not require direct application of the principles.

This guideline does not address how other government agencies interpret, and expect proponents to apply, the principles under other legislation.

1.4 The principles

The 11 principles of environment protection were added to the Act in 2001 and are set out in Table 1.²

Table 1. The principles of environment protection

Section in the Act	Principle
1B	The principle of integration of economic, social and environmental considerations (1) Sound environmental practices and procedures should be adopted as a basis for ecologically sustainable development for the benefit of all human beings and the environment. (2) This requires the effective integration of economic, social and environmental considerations in decision-making processes with the need to improve community wellbeing and the benefit of future generations. (3) The measures adopted should be cost-effective and in proportion to the significance of the environmental problems being addressed.
1C	The precautionary principle (1) If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. (2) Decision-making should be guided by: (a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable (b) an assessment of the risk-weighted consequences of various options.
1D	The principle of intergenerational equity The present generation should ensure that the health, diversity and productivity of the environment is

² The text in Table 1 is the same as in the Act, except for minor changes to punctuation.

Application of the environment protection principles to EPA's approvals process

Section in the Act	Principle
	maintained or enhanced for the benefit of future generations.
1E	<p>The principle of conservation of biological diversity and ecological integrity</p> <p>The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.</p>
1F	<p>The principle of improved valuation, pricing and incentive mechanisms</p> <p>(1) Environmental factors should be included in the valuation of assets and services.</p> <p>(2) Persons who generate pollution and waste should bear the cost of containment, avoidance and abatement.</p> <p>(3) Users of goods and services should pay prices based on the full life cycle costs of providing the goods and services, including costs relating to the use of natural resources and the ultimate disposal of wastes.</p> <p>(4) Established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, which enable persons best placed to maximise benefits or minimise costs to develop solutions and responses to environmental problems.</p>
1G	<p>The principle of shared responsibility</p> <p>(1) Protection of the environment is a responsibility shared by all levels of Government, industry, business, communities and the people of Victoria.</p> <p>(2) Producers of goods and services should produce competitively priced goods and services that satisfy human needs and improve quality of life, while progressively reducing ecological degradation and resource intensity throughout the full life cycle of the goods and services, to a level consistent with the sustainability of biodiversity and ecological systems.</p>
1H	<p>The principle of product stewardship</p> <p>Producers and users of goods and services have a shared responsibility with Government to manage the environmental impacts throughout the life cycle of the goods and services, including the ultimate disposal of any wastes.</p>
1I	<p>The principle of the wastes hierarchy</p> <p>Wastes should be managed in accordance with the following order of preference:</p> <ul style="list-style-type: none"> (a) avoidance (b) reuse (c) recycling (d) recovery of energy (e) treatment (f) containment (g) disposal.
1J	<p>The principle of integrated environmental management</p> <p>If approaches to managing environmental impacts on one segment of the environment have potential impacts on another segment, the best practicable environmental outcome should be sought.</p>
1K	<p>The principle of enforcement</p> <p>Enforcement of environmental requirements should be undertaken for the purposes of:</p> <ul style="list-style-type: none"> (a) better protecting the environment and its economic and social uses (b) ensuring that no commercial advantage is obtained by any person who fails to comply with environmental requirements (c) influencing the attitude and behaviour of persons whose actions may have adverse environmental impacts, or who develop, invest in, purchase or use goods and services which may have adverse environmental impacts.
1L	<p>The principle of accountability</p> <p>(1) The aspirations of the people of Victoria for environmental quality should drive environmental improvement.</p> <p>(2) Members of the public should therefore be given:</p> <ul style="list-style-type: none"> (a) access to reliable and relevant information in appropriate forms to facilitate a good understanding of environmental issues (b) opportunities to participate in policy and program development.

Application of the environment protection principles to EPA's approvals process

The principles are also restated and/or referenced in most statutory policies made under the Act.

Section 1A(3) of the Act states:

'It is the intention of Parliament that in the administration of this Act regard should be given to the principles of environment protection.'

When they were incorporated in the Act by Parliament, the principles were considered to be consistent with the community's general expectation that a safe and healthy environment should be provided for the people and the environment of Victoria, and with the Government's commitment to build sustainability principles into its decision-making³.

Despite the generality of the wording of the principles they are not merely aspirational or advisory, as they inform statutory processes and decisions made pursuant to the Act. More specifically, they provide a basis for EPA to develop statutory policy and guidance to support EPA decisions based on statutory policy, including works approvals and other statutory decisions⁴.

2 Application of the principles in EPA's approvals process

2.1 Relevance of the principles to the approvals process

The principles can be conveniently grouped according to how often they are directly relevant to proposals in EPA's approvals process, as in Table 2.

This table is not meant to indicate the relative importance of each principle *per se*. All of the principles are relevant to some extent to all proposals within the approvals process – as per section 1A(3) of the Act, EPA must have regard to them in all of its assessments and decisions. However, as shown in Table 2, the direct relevance of each principle depends on the issues arising in a particular proposal.

Different principles (or combinations of principles) of varying significance may apply to different applications. They can moderate and balance each other in the overall assessment process. However, none of the principles is treated as absolute or totally dominant in any given situation. The principles are commonly applied in an integrated fashion.

In applying the principles, EPA focuses on achieving efficient and practicable outcomes that are in proportion to the significance of the environmental problem(s) being addressed.

Also, the principles are not to be considered in isolation from the other matters (e.g. best practice and other statutory policy requirements) that proponents and EPA need to consider.

Table 2. Relevance of the principles to proposals for an EPA approval

Principles	Relevance	Most likely contexts	Guideline discussion
(s. 1B) integration of economic, social and environmental considerations	Often directly relevant <ul style="list-style-type: none"> commonly or frequently applied in the approvals process 	<ul style="list-style-type: none"> proposals with particular issues or contexts that attract the principles (e.g. where there are development options with environmental, social and economic trade-offs) waste and wastewater management projects (including sewage treatment plants)⁵ – as they often involve waste management choices and the consideration of cross-media implications (e.g. odour, sludge disposal) 	section 2.4
(s. 1I) wastes hierarchy			
(s. 1J) integrated environmental management			

³ Legislative Council, Second Reading Speech by the Minister for Energy and Resources on Environment Protection (Liveable Neighbourhoods) Bill, 3 April 2001.

⁴ Both of these activities – the development of statutory policy and the making of statutory decisions – are part of EPA's administration of the Act. The principles are also relevant to other types of EPA statutory decisions – for example, the precautionary principle helps to inform EPA's decisions under the *Environment Protection (Ships' Ballast Water) Regulations 2006* and the *Waste Management Policy (Ships' Ballast Water)*.

⁵ In recent years, about two-thirds of the works approvals issued by EPA have been for waste and wastewater management projects (mainly sewage treatment works). The list of EPA licences held is also dominated by the same types of facilities: *EPA Approvals Review Draft Report*, EPA Publication 1501, November 2012, pages 9-10.

Application of the environment protection principles to EPA's approvals process

Principles	Relevance	Most likely contexts	Guideline discussion
(s. 1C) precautionary principle (s. 1D) intergenerational equity (s. 1E) conservation of biological diversity and ecological integrity	Sometimes directly relevant <ul style="list-style-type: none"> applicable to assessments of particular types of proposals or in particular circumstances 	<ul style="list-style-type: none"> large or complex proposals proposals with unusual or innovative aspects or features proposals involving consumption of large amounts of resources (especially non-renewable resources) or generation of large quantities of greenhouse gases proposals with potential impacts on vulnerable species, significant habitats or valuable ecological systems or assets proposals involving significant hazards or risks that are difficult to define and characterise with confidence 	section 2.5
(s. 1F) improved valuation, pricing and incentive mechanisms (s. 1G) shared responsibility (s. 1H) product stewardship (s. 1K) enforcement (s. 1L) accountability	Rarely directly relevant <ul style="list-style-type: none"> generally applicable to EPA activities, but more relevant to policy making and program development than to EPA's approvals decision-making 	<ul style="list-style-type: none"> reflected in some aspects of EPA's approvals process - for example, seeking public comments on if works approval applications align with the principle of accountability 	section 2.6

2.2 Consideration of the principles during EPA's approvals process

The principles should be considered by proponents during a number of steps in the approvals process. They are also considered by third parties during several of the stages outlined below.

Project planning

Project proponents should consider the applicability of the principles during project planning, particularly if the proposal is 'significant', controversial or likely to be of concern to the community. Proponents should raise the principles in early discussions with EPA⁶. This helps proponents to subsequently demonstrate how they have considered the principles in their application to EPA.

Community consultation

Community consultation is strongly recommended by EPA for proponents in preparing their proposals. Effective community engagement can reduce community concerns and the likelihood of adverse comments when the application is advertised. Proponents are encouraged to discuss their application of the principles in their consultation with the community. The principles may be raised during the statutory consultation process.

Public comments period

Once EPA has advertised a works approval application, responsible agencies and other third parties may review the application and provide comments to EPA. In preparing these submissions, third parties may call on the principles where they consider them relevant.

EPA assessment and decision-making

There are many issues that EPA may have to consider in assessing an application (see section 2.3). Where a principle is

⁶ EPA's approvals process has recently changed. In early 2014, EPA introduced a new process that involves proponents initially submitting a proposal form, rather than a full application. EPA reviews the proposal form and allocates an assessment pathway within two weeks. If a proposal is allocated to the standard track works approval assessment pathway, the next step is a proposal meeting between EPA, the proponent and other referral or approval agencies. EPA, *Approvals proposal form and pathway - Guideline* (publication 1560, January 2014).

Application of the environment protection principles to EPA's approvals process

directly applicable, EPA will look for evidence of the applicant's consideration of the principle. This part of the approvals process is discussed in more detail in section 2.3 below.

VCAT and court review

The applicant and third parties may request a review of EPA's decision by the Victorian Civil and Administrative Tribunal (VCAT). VCAT's decisions can be appealed to the Victorian Supreme Court. The principles may be relied upon by EPA, the proponent or third parties in their participation in VCAT reviews or in court appeals.

Other assessment processes

In addition to EPA approvals, planning permission and other statutory approvals (where applicable), large or environmentally significant proposals may be subject to other regulatory assessment and approval processes – such as those under the *Environment Effects Act 1978* (EE Act), the *Major Transport Projects Facilitation Act 2009* (MTPF Act), the *Flora and Fauna Guarantee Act 1998* and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessments conducted and conclusions reached as part of these other assessment processes can help to inform EPA approval decisions. For example, they may provide information about the broader impacts of a project that is not included in the works approval application. They may also provide information on matters within the scope of the principles, but beyond the direct remit or expertise of EPA, such as social and cultural impacts, and potential impacts on species, habitats and the natural environment.

2.3 Significance of the principles in approval decisions

As noted above in section 2.2, the principles are considered by EPA during its assessment of an approval application, and in its decision on whether to grant an approval and, if so, the conditions relating to the approval.

Section 20C(3)(a) of the Act sets out the grounds on which EPA may refuse to issue, transfer or amend an 'authorisation' (defined as a works approval, licence, accreditation, RD&D approval, or a waste transport permit). EPA may refuse if, in its opinion, the authorisation would:

- be contrary to, or inconsistent with, any applicable policy
- be likely to cause, or contribute to, pollution
- be likely to cause an environmental hazard.

These grounds for refusal do not explicitly include inconsistency with the principles, but the principles inform the decision-making framework of the Authority.

Section 1A(3) makes it clear that EPA is expected to consider the principles in its statutory decision making. Failure to take into account a relevant principle can result in VCAT or a Court setting aside EPA's decision.

In undertaking an assessment, EPA will have regard to a wide range of factors, many of which relate to the grounds under section 20C(3) of the Act. Depending on the nature of the proposal, these factors may include whether:

- it complies with specific statutory policy requirements, such as best practice⁷, environmental standards and design criteria
- it is consistent with the aims and intents of statutory policy, such as resource efficiency, continuous improvement and the protection of beneficial uses
- it would be likely to cause pollution or unreasonable noise
- it would be likely to cause an environmental hazard
- its measures are cost-effective, practicable and in proportion to the significance of the potential environmental impact
- it is consistent with any relevant non-statutory guidance issued by EPA
- it is consistent with other provisions in the Act⁸.

When EPA decides to grant an approval, EPA considers the principles when determining the conditions to be included in it. For example, the precautionary principle can be used to support a decision to impose substantial and comprehensive measures to manage a facility where the risk of adverse environmental impacts is considered to be serious and there is significant uncertainty about what those impacts may be.

EPA also considers the principles in assessments and decisions where statutory policies and Regulations do not provide clear enough guidance on what should be done or decided, or where their provisions do not fully address the potential environmental impacts of a particular development proposal.

⁷ *Demonstrating Best Practice*, EPA Publication 1517, February 2013.

⁸ Forthcoming amendments to the Act will result in EPA giving more consideration to whether a waste-related works approval application is consistent with government policy. A new section 50C will enable EPA to refuse to consider an application if the operations of the facility could be inconsistent with the State-Wide Waste and Resource Recovery Infrastructure Plan or a relevant Regional Waste and Resource Recovery Implementation Plan. These Plans will be required to be consistent with any government policies (under new sections 50AB(2) and 50BB(2)). These amendments will take effect on proclamation, which is likely to occur in mid-2014.

2.4 Application of the principles that are often directly relevant

Principle of integration of economic, social and environmental considerations (s. 1B of the Act)

The integration of economic, social and environmental concerns aims to optimise the outcome of available trade-offs or compromises between competing concerns and values, and assist in reaching a balanced decision, rather than provide the absolute maximum level of protection of the environment.

An integrated assessment of economic, social and environmental impacts may need to consider local, regional and global impacts, and short, medium and long-term timeframes, depending on the nature of the proposal and any other relevant principles.

As noted above, this principle would apply mainly to large, complex and resource-intensive types of projects, or those with significant environmental impacts or risks. Where a proposal has significant social, environmental and economic implications in the wider community or in a regional or global context (especially where these implications are competing), the principle may come into play, and the boundaries of the assessment will expand accordingly.

In a proposal that may generate significant external economic and social impacts (costs or benefits), a proponent should first ensure that the proposal is consistent with statutory policy, will not cause pollution and is unlikely to cause an environmental hazard (as per section 20C(3)(a) of the Act).

In particular, proponents should ensure and demonstrate that their proposal is consistent with best practice, that is, it incorporates technologies, practices and other measures that are proven, cost-effective, relevant, accessible and in proportion to the environmental issues that need to be addressed.

Provided these core environmental requirements are met, EPA may be able to take into account the broader economic and social issues that arise from the proposal in an integrated assessment. Assuming there is an opportunity to do so (e.g. there is room or flexibility to vary some aspects of the proposal while still maintaining best practice and statutory policy compliance), a more 'balanced' overall outcome may be achieved. However, the final decision may still have to rely on subjective judgment in assessing costs and benefits, rather than an objective or quantitative assessment. In making such judgments, EPA will need to be clear about the assumptions, values and criteria it has relied upon, and the weightings it has assigned to particular issues.

It must be recognised that EPA is under no obligation to make a decision that ensures the financial viability of a proposal, and cannot approve a proposal that is inconsistent in any way with statutory policy. The integration principle does not require a decision-maker to balance the financial viability of a proposal with broader economic, social and environmental concerns. It is the overall impact of a proposal on society and the environment (rather than the individual proponent) that is of primary interest in applying the principle.

It is often difficult to compare and 'weigh up' economic, social and environmental costs and benefits because social and environmental impacts are difficult to quantify in economic terms. Even economic impacts need to be robustly modelled and based on sound assumptions.

As with integrated environmental management (see below), multi-criteria analysis (MCA) can be used to assess and compare the relevant economic, social and environmental issues in an integrated way. However, the same limitations apply, and decision-makers may still have to supplement the results of the MCA with balanced judgment in reaching a decision, based on the best information and advice at their disposal. Whichever approach is used, it is important that the assumptions, values and criteria used in an overall assessment are explicitly recognised.

This integration principle may become more relevant when an application is refused, or an approval holder objects to some conditions in the approval. There may also be third party objections on the grounds of adverse social or socio-economic 'costs'. In these cases, the broader social and economic impacts (positive or negative) of a project may be advanced as a reason for varying EPA's decision, altering its approval conditions or questioning its technical assessment.

For proponents/applicants

This principle will usually be applicable to a proposal that:

- involves large amounts of resources and greenhouse gas generation, or significant hazards to health and the environment
- may have significant social or economic impacts (costs and benefits) on local communities
- has significant medium to long-term economic, social and environmental implications

or

- has non-negligible impacts or implications on a regional, national or global scale.

Proponents should:

- consult EPA about the external economic, social and environmental implications of the proposal and how/whether they should be addressed in the application (e.g. scope, approach)
- conduct a comparative analysis of competing concerns and implications, based on clearly stated criteria, assumptions and values, taking into account relevant spatial scales and timeframes

Application of the environment protection principles to EPA's approvals process

- look for opportunities to address significant adverse impacts by optimising the balance between the project (e.g. its financial and technical aspects) and its external implications (e.g. by varying the proposal without compromising best practice or statutory policy compliance)
- document the analyses and reasoning behind the final proposal in the application.

Examples: see section 3 - case studies 2 and 3

Principle of the wastes hierarchy (s. 11 of the Act)

This well established principle involves a hierarchy of preference for the management of wastes that echoes approaches that are widespread in human health protection, that is, prevention is better than cure, and it is preferable to address the cause rather than manage the impacts or consequences.

The hierarchy should be used by proponents in conjunction with an analysis of technical, logistical and financial issues when assessing waste management options.

The mix and relative emphasis of waste management options may vary according to local socio-economic and physical conditions, rates of waste generation, and waste types and compositions.

Proponents should apply the wastes hierarchy to the waste management aspects of their proposal and should document this in their application.

In its assessment, EPA will apply the approach outlined in its guideline on applying the principles in waste management⁹ and, in particular, will adopt the following perspectives when applying the wastes hierarchy:

- practicability does not mean lowest cost
- the expenditure that is considered 'practicable' may increase with the hazard level of the waste
- practicability is generally considered in terms of what is 'affordable' in the context of the relevant industry sector, rather than what may be affordable for the individual business
- logistical considerations include issues of location and scale.

EPA will look for evidence in an application that:

- the applicant has considered the possibility of adopting options at higher levels in the wastes hierarchy, and has not rejected them without adequate investigation and analysis
- the applicant's proposal is at the highest level in the wastes hierarchy that allows an outcome consistent with statutory policy and best practice, involves acceptable risk, and is 'practicable', that is, relevant and reasonably available and affordable
- the applicant is advancing a proposal at a lower level in the hierarchy that it believes is significantly superior in overall terms (based on environmental risk and practicability considerations), and has documented the investigations and analyses undertaken to reach this conclusion.

EPA will allow a *departure* from the wastes hierarchy if it can be shown to produce a significantly superior outcome. Departing from the hierarchy may also be acceptable for reasons of technical feasibility. This approach is in keeping with the interpretation of the principle as a hierarchy of preference, and not a mandatory requirement. However, EPA would need to ensure that the applicant is able to justify the departure, using a comparative assessment of the options, for example, an integrated environmental assessment of the kind described below.

The principle will often be applied in concert with other relevant principles, especially the integrated environmental management principle, because waste management options often involve potential impacts on various environmental sectors or media (air, water, land, etc).

For proponents/applicants

This principle will usually be applicable to a proposal for which:

- wastes will be generated, recycled, reused, processed, treated, stored and/or disposed of
- or
- a number of waste management options with different implications (technically, financially, environmentally) are available.

Proponents should:

- consult EPA (at the planning or pre-application stage) about the application of the wastes hierarchy to the proposal

⁹ Applying the Environment Protection Principles in Waste Management Regulation, EPA Publication 1360, December 2010.

Application of the environment protection principles to EPA's approvals process

- analyse and compare the environmental, technical, logistical and financial issues associated with the proposal and its implementation options
- ensure that the final proposal conforms with best practice, and corresponds to the highest level in the hierarchy at which a practicable approach is available, *unless* a significantly superior overall outcome is available at a lower level
- document the analyses and reasoning behind the preferred approach in the application.

Examples: see section 3 - case studies 1 and 2

Principle of integrated environmental management (s. 1J of the Act)

This principle requires that, where the management of potential impacts on one *environmental medium or sector* (e.g. air, water, land) or in one *aspect or area* of environmental management (e.g. resource efficiency, risk management) has potential impacts on another medium, sector, aspect or area, EPA should look for the *best overall (balanced) environmental outcome*.

Best practice is strongly related to the principle of integrated environmental management, especially where there are competing environmental demands (e.g. environmental impact, resource use, waste generation) associated with different development options. A comparative analysis of the impacts, risks and benefits of each option will be required, based on appropriate decision-making criteria (quantitative or qualitative, as the case may be).

An integrated assessment will be applicable in two situations:

- where possible performance improvements (e.g. reduced environmental impacts or risks) in one or more areas within a proposal would lead to performance deficits (e.g. increased energy consumption or waste generation) in other areas

or

- where there are several discrete development options for a proposal and the options affect environmental outcomes in different ways (e.g. one option is superior in performance in one or more areas, but inferior in others).

An integrated assessment of a development proposal will need to consider:

- best practice for managing emissions or discharges to different environmental media (e.g. air, water, land)
- the wastes hierarchy in determining preferred waste management approaches or options
- greenhouse gas generation and resource efficiency
- the risks associated with the proposal or its options (e.g. the possible impacts of climate change and non-routine events)
- other issues such as siting, separation distances, odour and noise control, regional circumstances, etc.

For some proposals there will be only two competing factors to consider, but, for more complex proposals, there may be more than two factors involved.

Once a proposal has been evaluated for best practice and the wastes hierarchy has been applied, it will be possible to identify whether there are any competing environmental factors or issues that need to be addressed with an integrated assessment, and which development option(s) might lead to the best overall outcome.

If a more systematic integrated assessment is needed at this stage, the following process could be followed:

1. Prepare an inventory of emissions, discharges, wastes generated and resources consumed for each option, using best practice as the basis for the estimates.
2. Identify and evaluate the environmental impacts, risks and uncertainties associated with each option.
3. Identify and (where feasible) evaluate the external economic and social 'costs and benefits' of each option (which would move the assessment closer to an integrated assessment of economic, social and environmental considerations).
4. Identify significant differences between the options, excluding common elements or differences which are insignificant or 'low risk'.
5. Document and compare the differences (e.g. using multi-criteria analysis, or balanced judgment based on the best available information) to assist in reaching a final determination of the best overall option.

Multi-criteria analysis (MCA) can be used to assess and compare the differences between options in an integrated way. This approach usually involves assigning a relative priority or weighting to various factors and rating the predicted performance of different options against each factor. However, the value of this approach is highly dependent on the validity of the weighting choices and assumptions used in the analysis.

Therefore, in addition to any formal type of analysis such as MCA, decision-makers will often have to rely on balanced judgment in reaching their overall assessments or decisions, based on the best information and advice at their disposal. Whichever approach is adopted, it will be important to explicitly acknowledge the assumptions and criteria used in the comparative assessment.

For proponents/applicants

This principle will usually be applicable where:

- a proposal may involve trade-offs between impacts on different sectors (e.g. air, land, water) or different aspects of environmental management (e.g. waste management, resource efficiency)
- or
- the options available for implementing a proposal have 'competing' environmental outcomes.

Proponents should:

- consult EPA about the implications of potential environmental trade-offs, and whether/how they should be addressed in the application
- ensure that all options considered comply with statutory policy, and reflect best practice and (where applicable) the wastes hierarchy
- analyse and compare the impacts, benefits and risks associated with each option, based on clearly stated criteria and assumptions
- select the best overall environmental approach that is technically, logistically and financially practicable, and document the analyses and reasoning behind the selection in the application.

Examples: see section 3 – case studies 1 and 3

2.5 Application of the principles that are sometimes directly relevant

The precautionary principle (s. 1C of the Act)

Applying the precautionary principle does not require the total avoidance of all risks. An assessment of the risk-weighted consequences of optional courses of action is needed to find a solution that strikes a reasonable balance between the risks and costs associated with various measures and the benefits to be derived from them.

To decide whether the precautionary principle is applicable, a proponent should first determine whether two necessary and sufficient conditions are satisfied, namely:

1. a *threat of serious or irreversible environmental impacts; and*
2. *scientific uncertainty* about those impacts.

In relation to the threat, if it is considered serious, it does not matter whether it is irreversible or not. In addition, the expectation of damage should have 'reasonable scientific plausibility'¹⁰, even if it is not fully demonstrable.

The need for precautionary action increases with both the level of possible harm (potential threat) and the degree of uncertainty.

A proponent should also consider any potential *cumulative impacts* arising from a proposal, that is, whether the project's impacts or risks would add significantly to the seriousness of a threat which already exists.

In assessing the threat and uncertainty about the impacts associated with a proposal, EPA may have regard to the following factors, where they are relevant:

- the spatial scale of the threat (e.g. local, regional, national, global)
- the magnitude of possible impacts on both natural and human systems
- the perceived value of threatened environmental assets and resources
- the temporal scale of the impacts, in terms of both timing and longevity (persistence)
- the complexity and connectivity of the impacts
- the manageability of the impacts, having regard to the availability of effective means of their management
- levels of public concern and their rational, scientific or other evidentiary basis/bases
- the reversibility of the impacts and associated timeframes (where applicable)
- the difficulty and expense of reversing the impacts
- the adequacy and sufficiency of evidence that there might be serious or irreversible impacts
- the level of uncertainty about the impacts, including the kind of uncertainty (e.g. technical, methodological)
- the potential to reduce uncertainty, having regard to what is possible (e.g. what is economically practicable within a reasonable timeframe).

¹⁰ *Telstra Corporation Limited v Hornsby Shire Council* [2006] NSWLEC 133; (2006) 67 NSWLR 256.

Application of the environment protection principles to EPA's approvals process

In accordance with accepted interpretations of this principle, once EPA has decided that it requires detailed consideration for a proposal, it will fall to *the proponent* to demonstrate that the impacts of the project will be tolerable and acceptable. Otherwise, a 'precautionary' decision will be taken.

Taking precautionary action does not necessarily mean that an application would have to be refused. The action should still be proportional to the risks, that is, the perceived threats and uncertainties. Additional measures (e.g. going beyond 'best practice', higher levels of emission control, better risk management and/or more extensive project monitoring) may be required before the project is allowed to proceed with an acceptable level of confidence that serious adverse impacts will not occur.

Other principles are often involved in cases that attract the precautionary principle. For example, the principle should be combined with the principle of intergenerational equity where anticipated environmental degradation or resource depletion will cause a serious or irreversible liability for future generations, and there is scientific uncertainty about its scale or timing.

Proposals that have potential impacts with long-term, irreversible or global implications will often involve the principles of intergenerational equity and conservation of biological diversity and ecological integrity, because of the sheer size of possible impacts (e.g. climate change and extensive loss of biological diversity), the uncertainties that exist about their scale and seriousness, and the possible implications for future generations.

For projects involving greenhouse gas emissions, the principle will not usually be applicable unless the possible impacts are significant on a State, national or global scale¹¹.

For proponents/applicants

This principle will usually be applicable to a proposal that:

- involves a threat of serious or irreversible environmental impacts and there is significant uncertainty about those impacts
- involves large amounts of resources and greenhouse gas generation, or significant hazards to the environment and human health

or

- may have significant impacts on biodiversity or ecological integrity (e.g. vulnerable species, significant habitats, valuable ecological systems or assets).

Proponents should:

- consult EPA about whether/how the principle should be addressed in the application and its possible joint consideration with other principles (e.g. the conservation principle)
- where applicable, consult relevant experts and authorities, and gather information and advice about the nature of the threat, and the likelihood of serious, irreversible and/or cumulative impacts
- organise and present this information in the application, taking into account the factors identified above and the onus on the proponent to demonstrate that precautionary action is not necessary.

Example: see section 3 - case study 1

Principle of intergenerational equity (s. 1D of the Act)

The principle of intergenerational equity means taking a long-term view, in addition to looking at the short to medium-term costs and benefits of a project. The principle is built on the idea that humans hold the natural and cultural environment of the earth in common possession, both with other members of the present generation and with future generations.

Also, the Earth and its environment should be seen as offering more than just economic potential. Even if future generations gain from current economic progress, those gains might be more than offset by environmental deterioration, resource depletion and the resulting loss of opportunities.

Proponents should consider the application of this principle if their project involves issues of a physical and temporal scale that may lead to impacts *across generations*. A major project involving emissions of greenhouse gases is a good example where current activities can have, or contribute to, significant impacts on future generations.

The principle requires that, as far as possible, development proposals should be sustainable, and sources of energy that produce less greenhouse gases (GHG) should be substituted for existing GHG-intensive sources. EPA has existing statutory policy requirements that proponents must satisfy in the approvals process, including *resource efficiency* and *greenhouse gas management*.

¹¹ Section 14 of the *Climate Change Act 2010* (Vic) requires EPA, when it makes a works approval decision, to have regard to the potential impacts of climate change relevant to the decision and the potential contribution of the decision to Victoria's greenhouse gas emissions.

Application of the environment protection principles to EPA's approvals process

Climate change has intergenerational impacts and so, potentially, reduces biological diversity and causes damage to ecological integrity. In its assessments, EPA addresses these impacts by applying existing statutory policy measures in the approvals process, along with the precautionary and conservation principles, where applicable. Intergenerational equity can be a strong supportive and complementary principle in cases where these other two principles are invoked.

The principle of intergenerational equity is generally coupled with the precautionary principle where there are health or climate change risks, and with the principle of conservation of biodiversity and ecological integrity in relation to potentially significant impacts on the natural environment and its ecology (including those caused by climate change).

This principle will also be relevant, in conjunction with the precautionary principle, when assessing the risk of leaving a legacy of future environmental contamination associated with the use, handling and potential release of environmentally persistent substances.

Where the consideration of this principle forms part of an assessment, it should be assessed with reference to:

- the conservation of options - which requires each generation to conserve natural and cultural diversity in order to ensure that development options are available to future generations
- the conservation of quality - so that each generation should maintain the quality of the Earth so that it is passed on in no worse condition than it was received
- the conservation of access - so that each generation has a reasonable and equitable right of access to the natural and cultural resources of the Earth¹².

As with the other principles, the application of the principle of intergenerational equity needs to be tempered by issues of practicability (both physical and economic) and proportionality, and by those other principles that are relevant to a particular case.

For proponents/applicants

This principle will usually be applicable to a proposal that:

- involves the generation of significant amounts of greenhouse gases
- may have significant impacts on biodiversity or ecological integrity (e.g. vulnerable species, significant habitats, valuable ecological systems or assets)

or

- has any other significant adverse implications for future generations (e.g. deterioration of environmental quality, significant resource depletion).

Proponents should:

- consult EPA about whether/how the principle should be addressed in the application, and its possible joint consideration with other principles (e.g. the conservation principle)
- ensure that the proposal complies with statutory policy requirements for greenhouse gas management and resource efficiency
- where applicable, gather expert information, advice and opinion on the application of the principle to the proposal
- apply this information and advice to the application, taking into account the issues of conservation of options, conservation of quality, and conservation of access
- present an evaluation of the application of this principle in the application.

Example: see section 3 - case study 2

Principle of conservation of biological diversity and ecological integrity (s. 1E of the Act)

The conservation of biodiversity and the protection of ecological integrity should be a fundamental constraint on all human activity. The widespread and ongoing losses of valuable species and habitats resulting from human development now place greater responsibility on current generations to conserve the natural environment, its species and its ecosystems.

EPA is not directly responsible for the protection and management of biological and ecological assets or natural resources, and does not have wide-ranging expertise in these areas. However, some of the environmental standards in its policies have been adopted to protect unmodified ecosystems and prevent vegetation damage.

Other assessment systems may be activated (e.g. an Environmental Effects Statement) in cases where significant potential threats or impacts to these assets are identified. The information from these assessments and advice from responsible

¹² *Gray v The Minister for Planning and Ors* [2006] NSWLEC 720; (2006) 152 LGERA 258.

Application of the environment protection principles to EPA's approvals process

authorities (e.g. the Victorian Department of Environment and Primary Industries (DEPI) and/or the Commonwealth Environment Department) and relevant experts, would help guide any approval decision that EPA is required to make.

Based on the intended operation of the principles (i.e. to 'have regard' for them in the 'administration of the Act'), EPA will use the principle in reaching a decision on relevant cases where:

- it can be demonstrated that the project may have significant impacts on species, habitats, ecology or other valuable natural assets
- these impacts are associated with emissions or discharges from the project, risks associated with its operations, or its physical location in relation to sensitive assets
- EPA has information and advice (e.g. from other Government agencies, and professional and academic experts) about the impacts, their mechanisms and effects, and their extent or seriousness, to inform that decision.

The most obvious application of this principle in EPA's approvals process is for projects proposed to be located on large-scale 'Greenfield' sites that are in (or close to) sensitive or protected areas or habitats, or are valuable natural or biological assets.

Some of the issues that would be considered in evaluating a project's impacts on biodiversity include:

- the nature, size and quality of the affected areas and their associated ecological systems
- the diversity and value of the biological species and resources in these areas
- the nature and scale of the impacts and the seriousness of the threats to these resources
- the degree of permanence and irreplaceability of any potential losses
- the adequacy of any proposed mitigating and offset measures.

Where there is a perceived threat to ecological systems, the assessment will have regard to the three main factors in maintaining ecological integrity, namely:

- ecosystem health (e.g. species richness, species composition, food web architecture)
- ecosystem functioning (e.g. productivity, nutrient dynamics, decomposition)
- ecosystem services (e.g. conditions and processes through which ecosystems and their biological diversity, confer benefits on humanity, including the production of goods, life support functions, life-fulfilling conditions and preservation of options)¹³.

There are also strong links and relationships between this principle, the principle of intergenerational equity (the need to preserve the living environment for future generations) and the precautionary principle (e.g. there are threats of irreversible losses of species, and there is scientific uncertainty about the long-term implications of these losses).

In these cases, in conjunction with the precautionary principle (e.g. where there are threats of irreversible losses of species, and there is scientific uncertainty about the long-term implications), this principle provides support for either (i) refusing approval or (ii) regulating the project's design, construction and operation to avoid or minimise potentially serious impacts.

For proponents/applicants

This principle will usually be applicable where a proposal may have significant impacts on biodiversity or ecological integrity (e.g. vulnerable species, significant habitats, valuable ecological systems or assets).

Proponents should:

- consult EPA about whether/how the principle should be addressed in the application, and its possible joint consideration with other principles (e.g. the precautionary and intergenerational principles)
- where applicable, consult relevant experts and authorities (e.g. DEPI, Commonwealth Environment Department) and gather information and advice about the impacts, taking into account the issues identified above (e.g. nature, mechanisms, scale, seriousness, value of potential losses, available mitigation, reversibility of damage/loss, etc)
- undertake any surveys and investigations that are needed (based on discussions with relevant experts and authorities) to support the application
- apply this information and advice to the application, taking into account the factors of ecosystem health, ecosystem functioning and ecosystem services
- present an evaluation of the application of this principle in the application.

Example: see section 3 - case study 2

¹³ *Bentley v BGP Properties Pty Ltd* [2006] NSWLEC 34.

2.6 Application of the principles that are rarely directly relevant

Principle of improved valuation, pricing and incentive mechanisms (s. 1F of the Act)

Under this principle, environmental costs should be integrated into economic activities so that:

- the prices of goods and services include their full life cycle costs
- producers of goods and services operate in conformance with the 'polluter pays' principle
- consumers pay the 'true cost' of the goods and services that they acquire
- the environment is not seen as a free commodity or resource.

In accordance with the 'polluter pays' principle, the costs of preventing pollution, managing wastes or other environmental measures should be borne by those responsible for generating the emissions or wastes in the first place. Prices for the use of natural resources (e.g. as inputs to production) and the environment (e.g. as a 'sink' for waste disposal) should be set to recover their full social and environmental costs, both in the short and long term.

Apart from the setting of licensing and other approval fees, this principle has no direct application in the approvals process, although the 'polluter pays' principle is inherent in this principle and underpins many of EPA's policies and programs.

For example, broadly speaking, the projects or activities that require works approval and licensing under the Act are those which, by virtue of their scale, the materials they handle or process, or the wastes they generate, pose the greatest threat to the environment and public health.

While the fees for issuance of an approval or licence are primarily set in accordance with Government policy on cost recovery, they are structured in ways that:

- encourage waste minimisation by providing financial incentives to reduce emissions
- reflect environmental principles such as 'user pays' and 'polluter pays'.

Principles of shared responsibility and product stewardship (s. 1G and 1H of the Act)

Shared responsibility implies that each partner or stakeholder needs to have the knowledge, capacity and opportunity to contribute its 'share' of the overall responsibility for environment protection. This requires openness, transparency, effective consultation, and access to reliable and relevant information in appropriate forms.

Product stewardship is the responsible and ethical management of a product throughout its life cycle, from its invention/creation, through to its productive use and ultimate disposal. It has the objectives of ensuring best practices at each stage of the life cycle, providing beneficial and high quality products that satisfy consumers and other stakeholders, and minimising risks to human health and the environment during the life cycle. As far as possible, product life cycle costs (including environmental 'costs') should be included in product costs.

It can be seen from the wordings of these two principles in the Act that they are very closely related. However, with one exception, they are not particularly relevant to EPA's approvals process.

Proponents seeking an exemption from a works approval or licence requirement under Regulations 11(d) or 12(c) of the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007* are required to prepare and submit an Environment Improvement Plan (EIP) or a Health and Environment Management Plan (HEMP), in line with EPA's guidance on wastewater reuse and biosolids. These EIPs and HEMPs draw on the principles of shared responsibility and product stewardship, as they include management controls and accountabilities for the suppliers and users of the wastewater and biosolids.

Apart from this example, EPA's approvals system is not the best vehicle for promoting product stewardship and shared responsibility, as it is primarily concerned with regulating the construction and operation of *individual facilities*. For example, a works approval or licence is not a suitable means of imposing requirements on a producer to engage with suppliers or end users. Industry-wide approaches are generally best addressed through industry-wide agreements (e.g. sustainability covenants between EPA and an industry peak body under section 49AC of the Act and accredited product stewardship schemes) that bring all significant producers 'into the loop', along with others in the supply chain, where this is appropriate.

Principle of enforcement (s. 1K of the Act)

This principle requires environmental enforcement to be designed and implemented to ensure that no commercial advantage arises from non-compliant behaviour, and that enforcement activities discourage behaviour that has adverse impacts on the environment. Enforcement activities should also reflect the community's expectation that polluters should pay the costs of complying with approval conditions and cleaning up any pollution they cause.

The enforcement principle has little relevance to the approvals process, apart from the need to ensure that EPA's approval and licence conditions are fair, even-handed, practical and enforceable. However, the enforcement function effectively supports the protective and preventative functions of assessment by focusing on effective and timely implementation of the measures prescribed in approvals.

EPA uses a set of standardised and outcome-focused conditions in its approval documentation and, in some cases, will develop special conditions for particular approvals. EPA will ensure that the conditions in an approval document are relevant,

Application of the environment protection principles to EPA's approvals process

proportionate and consistent with the principle of enforcement in the Act, especially the need to ensure a 'level playing field' for approval holders.

Just as the conditions and requirements in EPA approvals are targeted and proportionate, then so will be the efforts of EPA personnel in enforcing them.

Principle of accountability (s. 1L of the Act)

The general public should have the opportunity to participate in, and contribute to, the development of EPA's policies and programs, through effective information programs and opportunities to comment on draft policies and program proposals.

In relation to EPA's approvals process, the principle of accountability operates through the provisions of the Act that provide opportunities for the public and other third parties to comment on an application when it is advertised, and to request VCAT to review EPA's decision on the application.

The information in this guideline may assist external stakeholders to evaluate works approval applications and decisions in the context of the principles, and respond accordingly. Also, as a result of the Approvals Review, EPA has made commitments, consistent with the principle of accountability, to publish:

- the criteria and procedures that it will use in deciding how applications will be processed (e.g. whether they will be exempted or 'fast-tracked')
- summaries of its assessment reports
- information on its key decisions and the rationale behind them (which includes how the principles were taken into account).

3 Case studies

The following case studies are hypothetical. Their purpose is to illustrate how proponents should take the environment protection principles into account in their project planning and approval applications. They also show how EPA takes the principles into account in its assessments and decision-making. In each case study, several principles are relevant.

3.1 Case study 1. Sewage treatment plant - project planning stage

A water corporation undertakes an analysis to determine the best option for connecting three rural towns to sewer. Currently, properties in the towns have their own septic tanks, many of which are old types of systems. The rationale for connecting the towns to sewer is to ensure the protection of human health and to reduce environmental risks.

The water corporation considered a range of options, including:

- local treatment and reuse/disposal of the wastewater to land, streams, groundwater and/or extractive industry
- transfer of the wastewater from the towns to one of several regional schemes.

The water corporation engaged extensively with community members and industries in the three towns, and with relevant government agencies, including EPA.

The water corporation took into account the requirements and standards in the State Environment Protection Policy (Waters of Victoria), and in EPA codes and guidance, relating to sewage planning, the management of wastewater discharges, and wastewater reuse and recycling.

The water corporation recognised that environment protection principles were relevant to its evaluation of the options.

The **principle of integrated environmental management** was relevant, as the options had varying impacts on different sectors. For example, treating and disposing of the wastewater locally required less energy than transferring it to a regional scheme, however, some local options had the potential to impact on groundwater.

The **principle of the integration of economic, social and environmental considerations** was also relevant, as the project had significant impacts on local communities and also economic impacts on the water corporation's other customers.

The water corporation used multi-criteria analysis to assess the potential impacts of different options on different environmental segments, and to compare the relevant economic, social and environmental issues in an integrated way. By using this technique, the water corporation made clear what its assumptions, values and criteria were. It sought and incorporated feedback on these from stakeholders, including EPA. This process helped the water corporation identify the best option and demonstrate its thinking in its subsequent EPA works approval application.

3.2 Case study 2. Landfill - application and assessment stages

A proponent was project planning for a new landfill in rural Victoria. One part of the proposed site was next to a native forest and a stream flowed near the proposed site into the adjacent forest. Other sites were available in the region, but at longer distances from the townships to be served, so the costs of disposal operations would be significantly higher. The existing landfill in the region was projected to reach its capacity within three years and the proposed site was noted in the region's waste management plan.

Application of the environment protection principles to EPA's approvals process

The proponent's primary focus was on demonstrating that their project would comply with statutory policy - in particular, with the Waste Management Policy (Siting, Design and Management of Landfills) and Best Practice Environmental Management requirements. This involved technical assessments and reports on how the proponent planned to manage leachate, landfill gas, odours, dust and surface water run-off, and mitigate visual and noise impacts.

The proponent also considered which environment protection principles might be relevant to their proposal. They discussed these with EPA prior to lodging their full works approval application.

The proponent discussed the following principles with EPA:

- the **wastes hierarchy** - EPA advised it would consider if there was a legitimate need for a new landfill in the region, and if reasonably available options corresponding to higher levels in the wastes hierarchy would be implemented (e.g. off-site and on-site waste separation, recycling etc)
- the **principle of the integration of economic, social and environmental considerations** - EPA would consider the comparative costs, environmental impacts and risks, and other implications of the proposed site compared to plausible alternative sites
- the **principle of intergenerational equity** - EPA would consider if there were longer-term residual risks to the environment, including after the site had finished receiving wastes
- the **principle of the conservation of biological diversity and ecological integrity** - as the site was next to a native forest, the proponent needed to assess whether their proposal could detrimentally affect protected flora and fauna, and EPA would seek an expert review of this.

EPA advised the proponent that its consideration of these principles would inform its decision on whether to grant an approval and, if the approval was granted, the types of conditions that would be attached to the works approval and the subsequent operating licence.

As a result of this discussion, the proponent had a clear understanding of the supporting information that EPA expected when the full works approval application was lodged.

3.3 Case study 3. Co-generation plant - application and assessment stages

A company applied for a works approval for a waste to energy plant [scheduled category A08 under the *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007*]. The proposed plant was designed to recover energy from the waste residues of its paper machine and material recycling operations. At the time of the application, these wastes were being disposed of to landfill.

Key features of the proposal were a fluidised bed combustion unit with special design features for dealing with high-moisture residues, removing non-combustible and recyclable materials, enhancing combustion efficiency and advanced emission control systems.

The energy recovered would be used to generate steam (replacing most of the plant's demand for natural gas) and electricity for on-site use. The proposal would decrease the site's carbon emissions and divert significant quantities of waste from landfill. Bottom ash produced would still require disposal to landfill, but the fly ash was to be recycled.

To enable EPA to make an assessment, including against the principles, the proponent undertook an extensive study to identify best practice options. These were based on their own experience and inspections of similar facilities overseas. The proponent also took into account EPA's guidance on energy from waste¹⁴.

As part of its project planning, the company considered the application of the **principle of the wastes hierarchy**. Given that the generation of the waste residues from the company's operations was unavoidable, and options for the reuse and recycling of those wastes were not practicably accessible, EPA accepted that the proposed recovery of energy was, in this case, consistent with this principle. The proposal moved the management of these waste residues further up the wastes hierarchy, from disposal to recovery of energy.

In its proposal, the company also applied the **principle of integrated environmental management** by comparing its benefits and disbenefits across environmental segments. The benefits included:

- diverting significant quantities of waste residues from landfill
- recovering energy for on-site use
- reducing the site's carbon emissions, both from the recovery of energy and the avoidance of landfilling.

The disadvantages and risks were:

- air emissions from the plant's combustion process
- noise generation
- the production of bottom ash and fly ash by the plant (the former requiring disposal to landfill)
- risks associated with the operation (or malfunctioning) of the co-generation plant.

¹⁴ *Energy from Waste - Draft EPA Victoria Guideline*, EPA Publication 1549, September 2013.

EPA accepted that the design features and technology proposed for the plant were 'best practice' at the time of the application and consistent with EPA's current guidance on energy from waste. The proposal was consistent with statutory policy in relation to air, noise and greenhouse gas emissions. There were no expected impacts on surface water or groundwater.

On the basis of these conclusions and the integrated environmental management assessment, EPA concluded that the proposal had net environmental benefits over the current disposal practice.

Based on a risk assessment, EPA felt that a contingency plan should be developed, with procedures and controls for dealing with any mechanical or operational failure of the plant, and any controlled shutdowns. This is consistent with good risk management practice and with the **precautionary principle**.

3.4 Further case studies

EPA's *Demonstrating Best Practice Guideline* (EPA Publication 1517, February 2013) includes further case studies on the application of the wastes hierarchy, the principle of the integration of economic, social and environmental considerations, and the principle of integrated environmental assessment (see pages 11-12).