



PINTS – Policy Integration for Sustainability

Background Paper

# Environmental Policy Integration: An Introduction

by

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June 2004

## Policy Integration for Sustainability (PINTS)

Policy Integration for Sustainability (PINTS) is a four-year research project (2002-2006) focused on the energy and agricultural sectors in Sweden and EU. The project seeks to contribute to a policy-making system that better integrates environmental concerns into its processes and structures. It is funded by FORMAS and the research partners are SEI, Umeå University (Dept. of Political Science) and the Royal Institute of Technology (Environmental Strategies Research Group).

This Background Paper was originally prepared in October 2002 as an initial literature review for the PINTS project. The aim was to contribute to the conceptual basis of the research and demonstrate different ways in which EPI could be interpreted and clarify implications for the study of EPI. A secondary aim was to get an initial overview of EPI in Sweden, as well as EU initiatives. Since then, the project has resulted in other publications, such as the article by Nilsson and Persson on an analytical framework for EPI published in the Journal of Environmental Policy and Planning in 2003 (see References). Later research outputs illustrate how the understanding of EPI within the project team has gradually evolved towards a form of *policy learning*, rather than as a set of concrete measures imposed on existing policy-making structures, such as green accounting, sustainable development strategies and strategic environmental assessment.

This revised version of the paper has been prepared to update the sections on EPI initiatives in Sweden and the EU and add conclusions from recent academic publications in the field. I hope this paper can have a wider relevance than as an input to the PINTS project and that it provides a useful overview of the existing literature for researchers, policy-makers and others interested in EPI.

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# Abstract

The sustainable development agenda has introduced a number of principles to guide policy-making – for example, long-term planning horizons should be employed, equity implications should be considered, and opportunities for international cooperation should be sought (OECD, 2001a). One of the principles that has been relatively easy to agree upon is environmental policy integration (EPI). It refers to the integration of environmental aspects and policy objectives into sector policies, such as energy and agricultural policy, and has also been referred to as sector integration. EPI is not only politically challenging, in terms of difficult trade-offs between environmental and other sector objectives, but also conceptually elastic and vague. The purpose of this paper is to provide a literature review of the EPI concept and how it has been studied and evaluated in practice, in order to identify key conceptual choices for further theorisation and empirical study of EPI. Following a brief overview of EPI initiatives at the global level (Agenda 21), EU level and national level in Sweden, three questions have guided the literature review. First, what is meant by EPI? The examination of a range of conceptions suggests that the two most important differences at the conceptual level are whether a weighting criterion giving ‘principled priority’ to environmental objectives is attached to EPI or not, and whether it is seen as process or an output. Second, how is EPI achieved? The review of both theoretical and practitioner-oriented literature suggests that variables and measures for EPI can be roughly divided into three broad and inter-related categories: normative (e.g. political leadership, overall policy framework, change of policy-making culture), organisational (e.g. integrated government departments, change of the budgeting process), and procedural factors (e.g. EPI strategies and action plans, systematic impact assessment procedures). Thirdly, what criteria can be used to evaluate the degree of EPI? While there are a few different sets of procedural criteria for evaluating specific EPI measures, there is a lack of criteria for evaluating the degree of EPI in substantive policy outputs resulting from ‘normal’ sector policy-making. The paper is concluded by highlighting key conceptual choices and making recommendations for further EPI study, including more theory-driven and explorative approaches.

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### **Abbreviations**

EAP	Environmental Action Plan
EEA	European Environment Agency
EMS	Environmental management system
EPI	Environmental policy integration
EU	European Union
IEEP	Institute for European Environmental Policy
NEO	National environmental quality objectives
OECD	Organisation for Economic Co-operation and Development
PI	Policy integration
SEA	Strategic environmental assessment
SEPA	Swedish Environmental Protection Agency
UN	United Nations
WCED	World Commission on Environment and Development

## Introduction

The sustainable development agenda has introduced a number of principles to guide policy-making – for example, long-term planning horizons should be employed, consideration of equity implications should be made, and opportunities for international cooperation should be sought (OECD, 2001a). One of the principles that has been relatively easy to agree upon is environmental policy integration (EPI). It refers to the integration of environmental aspects and policy objectives into sector policies<sup>1</sup>, such as energy and agricultural policy, and has also been referred to as sector integration. The need for EPI was one of the key messages of the Brundtland report (World Commission on Environment and Development, 1987:313):

*“The ability to choose policy paths that are sustainable requires that the ecological dimensions of policy be considered at the same time as the economic, trade, energy, agricultural, industrial, and other dimensions on the same agendas and in the same national and international institutions. That is the chief institutional challenge of the 1990s.”*

The reasons for supporting the policy integration principle as a tool for finding sustainable policy paths are twofold. First, there is a broad agreement that it facilitates more *rational* policy-making, in that negative environmental consequences of a sector policy decision can be considered at an earlier stage and more easily prevented or mitigated. Likewise, positive environmental consequences could more easily be maximised. Second, many also agree on the *normative* case for giving a higher priority to environmental issues in relation to traditional sector and economic objectives. However, while the rationale of the EPI concept seems straightforward and desirable at a global level, it is more complex and difficult to implement in concrete terms at sector level. While many “win-win” opportunities exist for achieving environmental and sector policy objectives together, there will inevitably be trade-offs. Trade-offs between the three dimensions of sustainable development – environmental, economic and social aspects – can be highly complex and politically controversial. Addressing environmental and sector concerns in an integrated way may still be preferable to separate policy-making processes, though. First, as different policy actors are brought together the pool of knowledge grows and chances for identifying previously unknown “win-win” opportunities increase. Second, even if positive “win-win” opportunities do not exist, it may still be possible to avoid obvious policy contradictions. Third, efforts to achieve more integrated policy-making may serve democratic objectives since it can lead to more comprehensive and transparent policy overviews, allowing actors to participate in a more informed way.

EPI is not only politically challenging, but also conceptually elastic and vague. It allows for various interpretations, which is reflected in the different understandings offered in the existing theoretical literature on environmental and sustainable development policy. As stated by Weale and Williams (1993:46) “there is in fact no canonical statement of what precisely it might involve and those concerned to advance the idea of integrated environmental policy have typically had a range of rather disparate problems in mind”. For a long time, environmental economists dominated the EPI literature and it was “considered to be synonymous with the application of economic instruments to other sectors” (Hey, 2002:128; see also European Eco Forum, 2003). In addition to disparate problem views, EPI can also stand for not only a general paradigm for contemporary environmental policy but also a much more specific and operational focus on mechanisms for EPI. Lafferty (2002:10) argues that very few “have addressed the nature of the concept distinct from its application in everyday policy discourses” (see also Hertin and Berkhout, 2003:40). Recent research thus emphasises the need to conceptualise EPI, since it is by no means an uncontroversial public policy objective or process. For example, what should be the relative weights of environmental and other objectives in trade-off situations? Is EPI a political or an administrative problem? Can EPI-related trade-offs be made in a democratic way?

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<sup>1</sup> In this paper the term ‘sector policy’ will henceforth refer to policy made within the realms of traditionally ‘non-environmental’ policy sectors, such as energy, agriculture, transport, tourism, industry, foreign affairs, development co-operation.

## Aims of the paper

The purpose of this paper is to provide a literature review of the EPI concept and how it has been studied and evaluated in practice, in order to identify key conceptual choices for further theorisation and empirical study of EPI. The aims are to provide a conceptual clarification by describing the main areas of disagreement and outlining what conceptual choices can be made when studying EPI, identify key analytical variables and measures for EPI, and review potential criteria to assess EPI. Special attention is paid to the Swedish and EU experience of EPI. Three basic questions have guided the literature review and also provided a structure for this paper:

- **Definition** – *What is meant by EPI?* In light of the many interpretations of the concept so far, it is necessary to break down the concept into its basic components and assumptions. Investigating what EPI means includes tracing its rationales and identifying its objectives. The translation of EPI from, in many ways, a rhetorical concept to a concrete policy-making principle and process requires a thorough literature review.
- **Measures/variables** – *How is EPI achieved?* Knowing the objectives and defining features of EPI the next question is how to achieve it. What means and strategies have been proposed? What underlying factors influence the potential for a policy process and output characterised by EPI? What variables are included in EPI analyses?
- **Criteria** – *What criteria can be used to evaluate the degree of EPI?* Many students of EPI would not only like to understand how it works but also understand if it is effective or not. An assessment of integration effectiveness should rely on a predetermined set of criteria.

## Structure of the paper

A brief review of the recent history of EPI internationally and in Sweden in the next section (*Overview of recent EPI practice*) will provide a background for examining the concept of EPI as treated in the existing literature (*Perspectives on environmental policy integration*). This review builds on literature addressing EPI specifically, but also general public policy literature on policy integration, coordination and coherence. In the subsequent section, some aspects from the various perspectives on EPI are highlighted in an effort to further clarify the issue (*Key conceptual choices for studying EPI*). Following this outline of key conceptual issues, the paper will move on to look at strategies and measures to achieve EPI, as well as key variables for EPI analysis (*How is environmental policy integration achieved?*). This involves reviewing both theoretical proposals and empirical work. Having identified typical measures for, barriers to and conducive factors for EPI, attention will be given to how to evaluate sector policy-making processes to see whether the measures are effective (*Criteria for assessing EPI*). Finally, in the last section some conclusions will be made with regards to furthering the EPI research agenda.

## Overview of recent EPI practice

The recent impetus to pursue EPI more actively in many countries and international organisations builds on a policy debate with a long history. The necessity of considering economic and environmental policy together has been emphasised in several classical environmental texts, such as “A blueprint for survival” (Goldsmith et al., 1972), “World Conservation Strategy” (IUCN, 1980) and “Our common future” (WCED, 1987). Since the principle of integration was first put on the agenda, however, “it has served as a rhetorical reference point without being turned into a political and policy strategy”, according to Hertin and Berkhout (2001:10). In this section integration initiatives at three different levels will be briefly described in order to illustrate EPI interpretations, commitments and actions, as well as lack of action.

### Global commitment to EPI

At the international level, a strong case for EPI was made by the World Commission on Environment and Development (WCED) in “Our common future” (1987). It was seen as integral to the broader policy objective of sustainable development and the two concepts have since been dealt with together. Justifying the need for EPI, the Commission argued that

*“[t]he integrated and interdependent nature of the new challenges and issues today contrasts sharply with the nature of the institutions that exist today. These institutions tend to be independent, fragmented, and working to relatively narrow mandates with closed decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those responsible for managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions must” (p. 310).*

Recognising that the consideration of ecological dimensions alongside economic and social dimensions is the “chief institutional challenge of the 1990s” (p. 313), a number of proposals for institutional change were put forward. At the national level, it was proposed that “sustainable development objectives should be incorporated in the terms of reference of those cabinet and legislative committees dealing with national economic policy and planning as well as those dealing with key sector and international policies. As an extension of this, the major central economic and sector agencies of governments should now be made directly responsible and fully accountable for ensuring that their policies, programmes, and budgets support development are ecologically as well as economically sustainable.” (p. 314) However, in addition to this broader and cross-sector view of environmental problems and policies, it was argued that “existing environmental protection policies and agencies must be maintained and even strengthened” (p. 311).

The views expressed by the WCED were supported at the UN Conference on Environment and Development held in Rio de Janeiro in 1992, which devoted chapter eight of Agenda 21 to the integration of environment and development in decision-making (United Nations Conference on Environment and Development, 1992). Four programme areas are identified in the chapter: integrating environment and development at the policy, planning and management level; providing an effective legal and regulatory framework; making effective use of economic instruments and market and other incentives; and establishing systems for integrated environmental and economic accounting.

Similar to other political declarations and strategies at the global level, Agenda 21 lacks more concrete measures, practical advice, timetables and commitments to substantive environmental quality results to be achieved. All these aspects are left to the implementation at the national level, the effectiveness of which depends on the interest and resources of the individual countries. In relation to EPI, however, Agenda 21 is interesting as an early and broad-based interpretation of what kinds of governmental and policy-making changes EPI should involve. First, the four programme areas suggest that the concept of EPI is seen to encompass both (1) a more integrated decision-making process, (2) improvement of underlying conditions such as effective implementation and enforcement,

(3) specific environmentally integrated policy outputs such as policy instruments that improve both economic efficiency and environmental quality and (4) improvement of data and analytical input to the policy-making process such as integrated accounts (programme area 4), and (programme area 3). This wide interpretation is reflected in the diverse and equally wide range of literature dealing with EPI, but has not been helpful for the more precise conceptual clarification of EPI and more structured analytical framework called for.

Focusing on the first programme area, the objectives for EPI in Agenda 21 are relatively broad (see Box 1). Among the activities described not many elements of *organisational* changes can be found, except for ensuring accountability for environmental implications of sector policies within the sector concerned. Some elements relating to policy changes of a more *normative* kind are proposed, for example the establishment of a long-term cross-sector policy framework and the development of a national strategy for sustainable development. In line with the political sensitivity at the global level, the majority of the proposed activities instead relate to ‘value-neutral’ *procedures*. Procedures can be given different status in terms of their influence on decision-making and they do not dictate specific outcomes. Examples of procedural elements proposed include: conducting a national review of decision-making; ensuring the coherence of sector, economic, social and environmental policies, plans and policy instruments, including fiscal measures and the state budget; monitoring and evaluating the development process regularly for example with the use of sustainable development indicators; ensuring transparency of the environmental implications of economic and sector policies; improving the use of data and information; and adopting comprehensive analytical procedures for prior and simultaneous assessment of the impacts of decisions.

**Box 1. Agenda 21 objectives for the integration of the environment in decision-making**

- 8.3 The overall objective is to improve or restructure the decision-making so that consideration of socio-economic and environmental issues is fully integrated and a broader range of public participation assured. Recognising that countries will develop their own priorities in accordance with their prevailing conditions, needs, national plans, policies and programmes, the following objectives are proposed:
- (a) To conduct a *national review* of economic, sectoral and environmental policies, strategies and plans to ensure the progressive integration of environmental and developmental issues;
  - (b) To strengthen *institutional structures* to allow the full integration of environmental and developmental issues, at all levels of decision-making;
  - (c) To develop or improve mechanisms to facilitate the *involvement of concerned individuals, groups and organisations* in decision-making at all levels;
  - (d) To establish domestically determined *procedures* to integrate environment and development issues in decision-making.

Source: United Nations Conference on Environment and Development (1992, section 8, paragraph 8.3).

At the international level, the work of the OECD on policy approaches towards sustainable development has also been a driver of EPI. One major effort is the initiative to develop indicators to measure the relationship between the environment and sector activities. Several sets of sector environmental indicators have been developed, including the transport and agriculture sector (OECD, 1997; OECD, 1999), which are regularly reported in the country environmental performance reviews. Recently, a set of indicators to measure the decoupling of environmental pressure from economic growth was also published (OECD, 2002a) and a set of indicators to measure sustainable development has also been proposed (OECD, 2001b). The OECD has also provided guidance on policy integration for sustainable development (see for example OECD 2001a,b). In addition to policy advice and guidance for sustainable development, the Public Management Service (PUMA) of the OECD has provided advice on policy coherence and integration in general (OECD, 1996). Similar to Agenda 21, the work of the OECD is very process-oriented and leaves substantive commitments as well as the preferences in relation to sector-environment trade-offs to be made by national decision-makers.

**The European Union: from trade concerns to the Cardiff process**

As opposed to the work of the UN and OECD, the European Union (EU) has its own political mandate for EPI which means that it can both work for EPI in its own legislation and operation and influence the Member States to apply it in policy areas not controlled by EU legislation. The history

of EPI progress within the EU has interested many researchers and is well documented (see for example Weale and Williams, 1993; Liberatore, 1997; Lenschow and Zito, 1998; Lenschow, 1999, 2002a,b; European Environment Agency, 2004). Only a brief review is made here.

The EU has responded to the EPI imperative in three main ways; Article 6 in the EU treaty, the ‘Cardiff process’ and the EU sustainable development strategy (see also Lafferty 2002). First, the 1992 Treaty on European Union (‘Maastricht Treaty’) has given EPI a relatively prominent legal basis. *Article 6* states that “[e]nvironmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3 in particular with a view to promoting sustainable development.” The need for environmental integration in EU sector policies had been articulated already in the Third Environmental Action Programme (EAP) from 1983, and subsequently elaborated in both the Third, Fourth, Fifth and Sixth EAPs, also resulting in a legal status in the Single European Act (1987) (Article 130r). According to Liberatore (1997) several factors contributed to the emergence of the integration principle, including concerns over the environmental implications of completing the internal market, the increasing influence of the discourse of sustainable development, the integration initiatives by some member states, and the ongoing process of strengthening EU environmental institutions. Despite this attention, though, the implementation of EPI up to 1992 had been “a faltering and haphazard affair” according to Weale and Williams (1993:49).

Secondly, the ‘Cardiff process’ was initiated in the late 1990s to give more attention to EPI in EU sector policy-making processes. The Council decided in Cardiff in 1998 that the Council sector configurations should adopt their own strategies for integrating environment and sustainable development into their respective policy areas, as proposed by the Commission (European Commission, 1998). Key drivers behind this initiative were the general acknowledgement that the segmented and hierarchical EU institutions produced incoherent policies, and advocacy by some member states, including Sweden, and a network of major NGOs (Hertin and Berkhout, 2001). The strategies were to be regularly monitored and evaluated with the help of fixed timetables and indicators. In June 1998 the transport, energy and agriculture Council formations and respective directorates were invited to develop strategies and indicators, and these were followed by development aid, industry and enterprise, and the internal market in December 1998, and fisheries, economic and financial affairs, and trade and foreign policy (general affairs) in June 1999. Before the Göteborg Summit in 2001, the Swedish presidency concluded that until then the progress had been uneven with a general failure to comply with the timetable (Ministry of the Environment, 2001). Two external evaluations of the Cardiff process were also made in 2001 (Kraemer, 2001; Fergusson *et al.*, 2001). Both found that the initiative itself was promising, but that progress until then had varied considerably between different Council configurations. Some strategies built on incomplete or absent sector sustainability assessments, went through little external consultation and consisted of little more than recapitulation of existing measures. In the Commission’s own ‘stocktaking’ report from June 2004 it was concluded that results of the Cardiff process had been ‘mixed’, with inconsistent quality across sectors and failure to translate commitments to actions. The Commission also predicted that further progress would be difficult “as many of the ‘low hanging fruits’ of integration have already been picked, future efforts to reverse persisting unsustainable trends will need to focus increasingly on structural reforms, which may generate tensions with established interest groups in the sectors concerned. In addition, action at national level is needed to deliver on the commitments made at the Union level, as in many areas Community competence is limited” (European Commission, 2004:3).

Thirdly, an EU *Strategy for Sustainable Development* was adopted by the Council in June 2001 (European Commission, 2001). It is actually an addition of the environmental dimension of sustainable development to the Lisbon Strategy for meeting economic and social objectives adopted in March 2000. Based on the identification of six major threats to sustainable development, the 2001 Strategy identified four priority action areas: limit climate change and increase the use of clean energy; address threats to public health; manage natural resources more responsibly; improve the transport system and land-use management. EPI (or rather sustainability policy integration in this case) has a central role in the strategy. It is stated that “too often, action to achieve objectives in one

policy area hinders progress in another” and that “the absence of a coherent long-term perspective means that there is too much focus on short-term costs and too little focus on the prospect of longer term “win-win” situations” (p. 5). After this problem identification, the strategy boldly states that “[s]ustainable development should become the central objective of all sectors and policies” (p. 6). A “more consistent approach” to “assessment of the full effects of a policy proposal” is needed, as well as better information. The forthcoming reviews of the Common Policies are mentioned as a specific opportunity for integration of sustainable development as a core concern. The strategy reflects a relatively strong commitment to fundamental changes of policy-making within the EU, but the question is how this commitment will be implemented and applied in real world policy-making.

These three pillars of EPI in the EU identified by Lafferty suggest that a comprehensive system for applying EPI has been put in place. Lafferty (2002:8) notes that an important “democratic-political legitimacy” of EPI has been established, which is essential for integration to be pursued seriously and effectively also at the national level. General weaknesses have been identified, however. According to the Institute for European Environmental Policy (IEEP) (2001, in Lafferty 2002), relatively little attention has been given to conceptual clarification, definitions and fundamental revision of the traditional hierarchy of policy objectives. This leads to a “confusing variety of methods” for integrating environmental concerns in sector policies. The fact that it took 15 years from putting EPI on the agenda (Third EAP) to taking real action within the sectors (the ‘Cardiff process’) is also remarkable. In a wider perspective, the EU EPI initiative is a good example of the dilemma of either being politically explicit – and risking a slow and resource-demanding process characterised by controversy and confrontation – or being more vague and pragmatic – risking empty commitments and ineffective and unfocused work processes.

### **The Swedish response to the EPI agenda**

One of the forerunner states and main champions of EPI in Europe has been Sweden (Hertin and Berkhout, 2001; see also Jordan and Lenschow, 2000)<sup>2</sup>. What has the national government done at home? A detailed review of EPI initiatives in Sweden is provided by Lundqvist (1998; 2000; 2004: chapter 5). According to Lundqvist, the need for more EPI (here as an aspect of ‘ecological governance’) was increasingly realised in the 1980s and articulated more clearly after the Brundtland report. Before then, the main concern had been to ensure that environmental issues formed a distinct and specialised policy domain, from having received little political attention at all. From the late 1960s, environmental policy in Sweden was characterised by a regulatory, end-of-pipe approach in which ‘balancing’ environmental and other societal interests was a key theme. The approach shifted with the 1987/88 Environment Bill, which emphasised that environmental policy should be preventive and cross-sectoral. The new approach resulted both in increased use of economic and information policy instruments, and recycling and reuse schemes.

The importance of EPI in sectoral policy-making was repeatedly stressed in several government bills (Lundqvist, 1998 and 2004; SEPA, 1999). However, it was given fresh impetus and led to more concrete actions when Göran Persson became prime minister in 1996. Ecological modernisation was to become a new profile issue for the Social Democratic government. Persson declared to the parliament that Sweden should be a driving force and a model when it came to efforts to achieve ecological sustainability (Fudge and Rowe, 2000:53). The tradition of building a welfare state was to be transformed into building a ‘green welfare state’ – *det gröna folkhemmet* – based on three cornerstones; more efficient use of energy and raw materials, use of renewable materials and recycling, and improved natural resource management of biological diversity, land and water (*Miljöaktuellt*, 28<sup>th</sup> August 2002). A small group of ministers formed a Committee for Ecologically Sustainable Development and produced a range of proposals for EPI initiatives and schemes in 1997 (Lundqvist, 2004). As for legislation, a new Environmental Code was already under development. This was to be complemented by a set of fifteen national environmental objectives (NEOs),

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<sup>2</sup> For an overview of EPI experiences at the national level in some other European countries see Lenschow (2002a), European Eco Forum (2003) and European Environment Agency (2004).

introduction of environmental management systems (EMSs) in government authorities, and annual progress reports on ecologically sustainable development to the parliament. These and some other major national initiatives for managing cross-cutting environmental issues are briefly described in Box 2. Also at the regional and local levels, a range of EPI measures have been introduced, such as

**Box 2. Current major EPI measures in Swedish central government**

- **The Environmental Code**

A new Environmental Code (SFS 1998:808) was adopted in 1998 by the Parliament. It integrated fifteen different environment and natural resources related Acts and it sets out general principles, directions and objectives for environmental work in Sweden. Being a piece of environmental legislation, the Code is more of a 'passive' measure for EPI than an active one. However, the government argued that it would be a platform from which "different actors – business, central and local administrations, associations, households and others – can formulate their environmental strategies" (Government Bill 1997/98:45, p. 160).

- **Sector responsibility**

The Parliament decided in 1988 that all societal sectors should have environmental responsibility within their respective fields of activities. A more formalised responsibility was then suggested in 1996 by the governmental Environmental Advisory Board (SOU 1996:112) and the outcome was a legal responsibility for the Director-Generals of all governmental agencies to "take into account" not only environmental considerations but also the objective of sustainable development in their activities (see SFS 1995:1322. § 7). In 1998, a specific scheme for sector responsibility for 24 central agencies was prescribed by the Cabinet (not legally required); the agencies "shall integrate environmental concerns and resource management in their activities and promote ecological sustainability within their sector" (Government Communication 1998/99:5, p. 13). This scheme has recently been evaluated (SEPA, 2004a) and may be revised in the new Environment Bill in 2005.

- **National environmental quality objectives (NEOs) and sector environmental objectives**

Fifteen national environmental quality objectives were adopted by the Parliament in 1999 (see Government Bills 1997/98:145 and 2000/01:130) to constitute a framework for Swedish environmental policy. They were intended to provide a basis for different policy sectors to develop their own environmental objectives, but these objectives have not materialised due to the disagreement on the feasibility and usefulness of such objectives. However, 24 governmental agencies have been identified as sector agencies with a specific responsibility for contributing to the achievement of the NEOs. The objectives are being monitored and the first evaluation (every four years) was published in 2004. This evaluation paid special attention to the need for EPI and functioning sector responsibility (see above) (Environmental Objectives Council, 2004).

- **Environmental management systems (EMSs) in government agencies**

The government declared in 1996 that government bodies and authorities should be role models for environmental management. Proposals, decisions and actions should be shaped to promote ecologically sustainable development. Based on a proposal by the Environmental Advisory Council (SOU 1996:112) an overall system has been put in place and a total of 242 governmental authorities, including the central government are now formally instructed to have EMSs. The EMSs are modelled on the standard management cycle; environmental review, policy, objectives, action programme, allocation of responsibilities, monitoring, measures for improvement and a possible reformulation of the policy. However, success has been limited, particularly with respect to the consideration and mitigation of indirect impacts, which are often the most environmentally significant ones (SEPA, 2004b).

- **Green public procurement**

Considering the economic significance of the Swedish public sector as a procurer, the integration of environmental considerations into public procurement was seen as measure with a high potential for driving the transition to ecologically sustainable development. A Committee was put in place and in September 2001 an Internet-based instrument to support public sector organisations with 'ecologically sustainable procurement' was presented (Committee for Ecologically Sustainable Procurement, 2001). The instrument is currently managed by the Swedish Environmental Management Council.

- **Environmental accounting**

Since 1992 the National Institute for Economic Research has been compiling monetary environmental accounts (KI and SCB, 1998). Statistics Sweden has been working with physical environmental accounts (SCB, 2001).

- **Annual sustainable development reports**

In 1997 it was proposed that progress towards ecologically sustainable development should be reported annually by the Cabinet. Such Cabinet Communications have been published since then, listing activities and initiatives in the different government departments (see for example Government Communications 2001/02:50 and 2000/01:38).

- **National strategy for sustainable development**

In 2002 the Cabinet issued a strategy, partly as an input to the Johannesburg Summit (Government Communication 2001/02:172). The strategy includes objectives and activities for all three dimensions of sustainable development, structured in eight core areas. It was not subject to a parliamentary decision, however. The strategy was revised in 2004 (Government Communication 2003/04:129).

local investment programmes, environmental integration in regional development policies, and impact assessment of comprehensive planning (see Swedish National Committee on Agenda 21 and Habitat, 2002; Fudge and Rowe, 2000).

Particularly interesting in this context is the formal establishment of ‘sector responsibility’ for 24 government authorities in 1998 for reducing the environmental impact of the sector in question (Government Bill 1997/98:145). This new mandate involved five tasks: identify the authority’s role and how sector activities affected the transition towards ecologically sustainable development; prepare possible sector objectives and strategies, as well as impact assessments of these; ensure that actions are taken; continuously monitor the development; and co-operate with and inform other actors in the sector (Government Bill 2000/01:130). Considering how influential the Swedish governmental sector authorities are in policy-making and implementation in comparison with other government systems (see Pierre 2001), this mandate- and ownership-oriented strategy could provide important leverage for EPI in Sweden. However, an evaluation of the sector responsibility in 2004 showed that progress had been limited due to the mandate being perceived as unclear by the authorities and co-ordination problems with other environmental initiatives (e.g. EMSs, NEOs). It is also interesting to note that in those sectors where the sector was well-defined and environmental impact clear, the main problems for the authorities were lack of resources, goal conflicts and lack of mandate for action. In sectors where the sector was more diffuse and environmental impacts indirect and unclear, on the other hand, the main problems were of a conceptual nature and lack of knowledge and expertise (SEPA, 2004a).

The establishment of the fifteen NEOs in 1998 (Cabinet Bills 1997/98:145 and 2000/01:130) has given environmental policy and EPI a politically legitimate, robust and transparent benchmark. Clear and often quantitative interim targets and indicators have been established, but it has taken the process until now to really focus on the action strategies. The first major evaluation of goal achievement was done by the Environmental Objectives Council in 2004 and it was stated that a lot of work has to be done within sectors, rather than central environmental policy institutions (Environmental Objectives Council, 2004). The sector responsibility scheme is linked to the NEOs, but as noted above, sector authorities have perceived the relationship between that responsibility, the general responsibility for contributing to the NEOs and other environmental initiatives as unclear. Indeed, the system of NEOs is fairly complex with responsibilities for individual NEOs, responsibility for four ‘cross-cutting’ issues, responsibility at regional and local level, and the sector responsibility (Lundqvist, 2004; SEPA 2000, 2004). Another challenge for greater contribution of sector authorities is the existence of difficult goal conflicts and trade-offs, which have not been addressed widely at the political level and instead have to be considered at administrative level (SEPA, 1999, 2003).

There are several interesting aspects of the sector responsibility initiative introduced in the late 1990s. Firstly, the overall complex structure of sector responsibility and NEOs with some cross-cutting and partial responsibilities may become even more problematic as the work goes along, especially since clear responsibilities are crucial in the system of ‘management by objectives’ that the government wants to achieve (see Pierre, 2001). Secondly, and as a consequence of the ‘management by objectives’ system, it can be argued that a significant decentralisation of authority to shape EPI has taken place. Reports by SEPA (1999 and 2000) show that after the NEOs were adopted in 1999, the authorities have been given a large degree of freedom in organising their work. Guidance from the departmental level, not least in relation to the appropriate level of ambition, has been relatively sparse. Rather than merely implementing policy, sector authorities have now in effect been given the task of developing policy together with sector actors. According to SEPA (2000), the sector responsibility can imply that the authorities should integrate environmental consideration into their existing tasks, rather than developing new tasks or roles for environmental consideration. It can also mean that the authorities should promote environmental integration among all sector actors, which *de facto* means an enlarged responsibility.

Thirdly, due to the decentralised responsibility for shaping EPI in the sectors, the responses among the sector authorities have varied so far (SEPA 2000, 2004a). The success with developing sector

objectives based on the NEOs has so far been limited, among other things due to disagreement on the usefulness and feasibility of such objectives and limited interest by sector actors. With regards to the perception of roles, the “implementing authorities” expect concrete instructions from the government and focus on making the NEOs more precise. The “networking authorities” perceive their role more as an actor among others in the sector and therefore focus on building networks and joint problem-solving. The work with the NEOs has led to more sector cooperation, especially with trade associations, companies and NGOs. As for non-state actors, however, the survey showed that they are not very interested in sector co-operation, as they perceive environmental policy to be a national government affair, and that they rarely perceive a certain ‘sector home’ for their activities. The non-state actors also see diverging interests and world views as barriers to co-operation. A common attitude is “the state decides – we pay” in the private sector. Interestingly, this attitude is more common in sectors where the sector authority has interpreted its role as an “implementing authority”.

Are these measures for EPI effective? Lundqvist (2004) concludes that Swedish bureaucracy is effective in carrying out new mandates and missions. Several mechanisms are now in place to make EPI work effectively, but there remain problems of monitoring and reporting. At a more fundamental level, it is unclear whether environmental concerns are now given more weight in sector policy-making or whether they are marginal. Policy intentions and aspirational statements are certainly characterised by EPI. According to Lundqvist, it remains to be seen, however, what *actual* budgetary and regulatory powers the parliament and government will use to signal the preferred order of prioritisation of policy objectives.

### Summary

To summarise, it can be argued that the UN documents “Our common future” (WCED, 1987) and Agenda 21, have served to legitimise EPI as a cornerstone in the pursuit of sustainable development and provided a basis for countries to develop their own EPI strategies. The EU initiatives, on the other hand, have the potential of being influential among the member states and they represent a structured and comprehensive approach to the EPI challenge. Sweden, building on its tradition of being a forerunner state in environmental policy, has put several concrete measures in place to address the roots of environmental problems. However, having formally established a new policy-making principle, the success of the EU and Swedish initiatives are dependent on the implementation and application of sector strategies and responsibilities, and concrete results have yet to come.

## Perspectives on environmental policy integration

EPI has thus existed as a policy objective for some time and progress towards translating the rhetoric into concrete measures has gained momentum recently. Still, the brief historical overview suggested that the concept itself has not been exhaustively elaborated or clarified in the policy-making community but remains a rather elusive principle open for divergent interpretations. In this section a selection of academic literature will be reviewed in order to identify the key elements of EPI and important areas of disagreement. The review begins with a discussion of the basic building blocks of ‘policy’ and ‘integration’, to move on to general descriptions of policy integration (PI). Although an increasing amount of literature focus on EPI specifically, it can also be useful to examine some literature on general integration of policies. Finally, a range of different EPI conceptualisations will be reviewed.

### ‘Policy’ and ‘integration’: basic definitions

According to the dictionary, the term ‘*integrate*’ can have either of the following meanings: “*to form, coordinate, or blend into a functioning or unified whole; to unite with something else; to incorporate into a larger unit*”<sup>3</sup>. From these definitions one can conclude that an integration process can occur with different degrees of order and purposiveness, either through coordination according to a predefined set of rules or through random blending. Secondly, the definitions leave open the question of hierarchy and priority among the parts to be integrated. Hence, integration can occur with no priority (in effect, equal priority) of different parts or with differentiated priority. Thirdly, the definitions suggest that integration can mean both unifying several parts into a (new) whole and incorporating one part into a larger (existing) unit.

Turning to the object to integrate in this context, ‘*policy*’, this term too is characterised by an imprecise definition and multiple uses. Hogwood and Gunn (1984:13-19) have found ten different contemporary uses of the term: as a label for a field of activity; as an expression of general purpose or desired state of affairs; as specific proposals; as decisions of government; as formal authorization; as a programme; as output; as outcome; as a theory or model; and as a process. Policies can also be by-products of other actions, for example energy policy is often highly influenced by what is labelled as industrial or social policy (Collier, 1994).

Already this basic definition of integration suggests that; first, priority, or weighting, is a key element, and second, the term is imprecise enough to accommodate a wide range of interpretations with regards to weighting. It is also clear that the conceptual clarification of EPI is further challenged by the inherent ambiguity of the term policy, i.e. the ‘slippery’ object to integrate.

### The meaning of policy integration

The objective of policy integration is not unique to the environmental policy context. Indeed, several theorists in the fields of public policy and public administration have discussed the problems of achieving coordination, coherence and integration of public policy. In this section, texts by two important authors on policy integration (PI) and coordination will be reviewed, Arild Underdal and B. Guy Peters.

#### Underdal: A rationalist view on policy integration

One of the earlier accounts on PI is Underdal’s article “Integrated Marine Policy: What? Why? How?” from 1980 (Underdal, 1980). He chooses to define PI by formulating three criteria that should be satisfied in order for a policy to qualify as integrated. The first criterion is *comprehensiveness*, in

<sup>3</sup> Searchword “integrate” in Merriam-Webster’s Collegiate Dictionary, available at <http://www.m-w.com>. The search was performed 2002-08-16.

terms of inclusiveness of space, time, actors and issues. Secondly, *consistency* implies that all the components of the policy are in agreement. Third, *aggregation* means that an overarching criterion is used to evaluate different policy elements. Thus, an integrated policy is one where “*all significant consequences of policy decisions are recognised as decision premises, where policy options are evaluated on the basis of their effects on some aggregate measure of utility, and where the different policy elements are in accord with each other*” (p. 162). The three criteria refer to three consecutive stages of the policy-making process: “comprehensiveness to the input stage; aggregation to the processing of inputs; and consistency to outputs” (p. 159).

Comprehensiveness can be pursued along four dimensions: in time, by adopting a long-term view; in space, by extending the geographical area considered to the same area that will be affected by the policy outcome; in actors, i.e. the proportion of actors from whose perspective the policy options will be evaluated; and in issues, i.e. the proportion of interdependent issues or issue-aspects that is subsumed under a common policy framework. Underdal admits that the optimal scope of inputs is difficult to define, considering that an increased scope of inputs also involves higher costs. However, a ‘rule-of-thumb’ is suggested; “policy comprehensiveness should be measured in relation to the fund of knowledge about policy consequences available at the decision time” (p. 161). With regards to aggregation, Underdal admits there is a problem with the simplest solution, which is a ‘sum-perspective’ of weighing costs and benefits. Firstly, inter-party comparison of utilities is always difficult. Secondly, a ‘sum-perspective’ could have significant distributional effects. He concludes that aggregation should be conducted in a Pareto optimal way. Finally, the consistency criterion is defined as involving two dimensions. Vertical consistency means that a policy should be consistent at all its levels, from policy goals to more detailed guidelines. Horizontal consistency means that the same policy is pursued by all actors at a given policy level and in relation to a given issue.

This definition is conceptually stringent and precise and one of the few that also conceives PI as an output in addition to a process. However, a large step has to be taken in order to make this definition and the three criteria operational due to the ‘rationalistic’ approach. How easily can different policy elements be discerned? How many actors need to be included in order to make the policy comprehensive enough? How formal and precise does the overarching criterion need to be during the course of aggregation? Underdal recognises these difficulties and argues that the feasibility of a perfectly integrated policy should be regarded with scepticism. For example, he argues that “one would expect an inverse relationship between comprehensiveness on the one hand, and aggregation and consistency on the other; other things being equal, the more comprehensive a certain policy, the more centrifugal forces will be at work” (p. 163). Likewise, perfect PI may not be desirable from a cost-effectiveness perspective; “policy integration should be pursued up to the point where marginal cost of integration effort equals marginal gain from policy improvement, and no further” (p. 165). Importantly, the costs of PI may also include loss of democratic values, such as decentralisation of decision-making power.

Considering Underdal’s approach in relation to EPI, two important issues emerge. First, the relevance to EPI may be compromised by the fact that Underdal discusses *general* integration of existing objectives for (marine) policy, while the EPI challenge is about *specifically* integrating environmental considerations in existing policy areas where they may not have been present as decision premises before. The latter case may involve a higher degree of conflict between entrenched interests than the former, and therefore require other strategies and measures, including strong normative signals for the priority-setting in the integration process. Secondly, Underdal’s account is an example of a rational (if not rationalistic) perspective on PI. While he gives due attention to potential theoretical barriers to PI, such as the net cost of being comprehensive in scope, further understanding of EPI is likely to benefit from more attention to political and practical issues. For example, how do attitudes and policy-making traditions influence what is being perceived as rational? How influential is the implementation stage for maintaining the degree of integration of a policy decision output?

**Peters: Integration for improving public administration**

B. Guy Peters has written extensively on the topic of policy coordination from a public policy and administration perspective. He describes it as an “administrative Holy Grail” that has become more difficult to achieve in pace with the growth and structural elaboration of modern governments (Peters, 1998:1). According to Peters, policy coordination refers to “the need to ensure that the various organisations... charged with delivering public policy work together and do not produce either redundancy or gaps in services” (p. 5). PI is thus framed as an organisational issue mainly and Peters approaches it from a more practical perspective than Underdal. Rather than provide a definition of the state of being coordinated, Peters argues that there is a spectrum of coordination options, ranging from minimalist to maximalist. The scale by Metcalfe (1994) is used to illustrate this view of PI (see Table 1). While the view of policy coordination as a scale is useful for conceptual development of EPI, the different steps suggested are more interesting on a practical level when concrete means for PI such as government architecture, procedures and communication processes.

**Table 1. The internal management of external relations: policy coordination scale**

Step 1	<i>Independent decision making by ministries.</i> Each ministry retains autonomy within its own policy domain.
Step 2	<i>Communication to other ministries (information exchange).</i> Ministries keep each other up to date about what issues are arising and how they propose to act in their own areas. Reliable and accepted channels of regular communication must exist.
Step 3	<i>Consultation with other ministries.</i> A two-way process. As well as informing other ministries of what they are doing, individual ministries consult other ministries in the process of formulating their own policies, or position.
Step 4	<i>Avoiding divergences among ministries.</i> Ensuring that ministries do not take divergent negotiating positions and that government speaks with one voice.
Step 5	<i>Interministerial search for agreement (seeking consensus).</i> Beyond negative co-ordination to hide differences, ministries work together, through, for example, joint committees and project teams, because they recognise their interdependence and their mutual interest in resolving policy differences.
Step 6	<i>Arbitration of inter-organisational differences.</i> Where inter-organisational difference of view cannot be resolved by the horizontal coordination processes defined in levels 2 to 5, central machinery for arbitration is needed.
Step 7	<i>Setting parameters for organisations.</i> A central organisation of inter-organisational decision-making body may play a more active role by setting parameters on the discretion of individual organisations. These parameters define what organisations must not do, rather than prescribing what they should do.
Step 8	<i>Establishing government priorities.</i> The centre of government may play a more positive role by laying down main lines of policy and establishing priorities.
Step 9	<i>Overall governmental strategy.</i> This case is added for the sake of completeness, but is unlikely to be attainable in practice.

*Source:* Metcalfe (1994 in Peters, 1998:7, Table 1)

However, Peters notes other important conceptual aspects, such as the difference between “policy coordination” and “administrative coordination” (Peters, 1998). The latter represents a bottom-up orientation towards making government policy outputs more coherent and easily absorbed for the target group, and thus stems from an implementation perspective. The former orientation rests on the assumption that it is more effective to coordinate from the very beginning, in a top-down manner, and that clear overarching priority-setting is more important than implementation concerns at the policy formulation stage. Clearly, this distinction has implications for how the EPI challenge can be portrayed. In a similar vein, Peters discusses the ownership aspect of policy coordination. Is it most effective when it is imposed on policy-makers or when they are left to bargain among themselves? Different views lead to different conclusions on appropriate means; imposition is most effective in a hierarchical organisation while bargaining is the natural option in market and network organisations. Like Underdal, Peters also enters a discussion of the desirability of increased policy coordination. It is argued that when tasks are distributed to more actors and in a more complex way, the overarching risk is that it is more difficult to hold someone accountable for a possible break-down. Therefore, accountability is central and always needs to be ensured when taking measures to improve coordination.

How relevant are Peters’ arguments to EPI? The normative and weighting aspect of EPI is not dealt with much. Furthermore, it could be questioned whether ‘coordination’ really implies the same decision-making requirements as ‘integration’, or if it should be seen as a first step towards

integration. Peters' distinction between top-down and bottom-up coordination and ownership discussion, however, are important issues that have not yet been addressed extensively in the EPI literature.

### **The meaning of environmental policy integration**

According to Underdal (1980), PI is an issue of making the decision-making process more rational. Peters (1998), on the other hand, focuses not so much on decision-making process or output aspects but on the organisational context for PI. Also in relation to the more specific field of *environmental* PI (EPI), different authors frame the problem of integration differently. A selection of recent accounts on EPI is reviewed in chronological order below. They represent different framings of the integration problem and highlight different conceptual aspects.

As noted, the terms EPI and sector integration are often used interchangeably. In some contexts sector integration refers to the political-administrative sectors of government while in some it refers to the actual sectors of society that the governments are trying to affect (Lafferty, 2002). In this paper the focus is on sector integration in the first sense, or simply *environmental policy* integration. It can be assumed that increased policy integration leads to better conditions for improving the sector environmental outcomes. Furthermore, it should be noted that some authors discuss EPI as purposive, formal and planned governmental efforts while others view it as an overall paradigm or policy discourse. These two 'levels' of EPI are undoubtedly closely linked, in that a new policy paradigm can lead to concrete measures and vice versa, but it is important not to confuse them when clarifying conceptual aspects.

#### **Collier: The importance of trade-offs in EPI**

Ute Collier (1994) discusses policy integration mainly in relation to an environmental economics perspective and uses EU energy policy as an empirical example. The rationale for EPI is traced to the sustainable development agenda, which has emphasised the need to make environmental policy-making less *ad hoc* and not to view it as a discrete policy area. Based on a brief review Collier defines policy integration as aiming at:

- “achieving sustainable development and prevent environmental damage;
- removing contradictions between policies as well as within policies; and
- realising mutual benefits and the goal of making policies mutually supportive” (p. 36).

The first objective is of a normative but vague character and not really helpful for conceptually clarifying EPI. The other two objectives point to more analytical aspects of EPI and suggest that there could be a minimum level of EPI (removing contradictions) and a more ambitious level (realising mutual benefits). However, the last two objectives could also be interpreted as general principles for rational policy-making and not specific objectives of EPI. Realising this, Collier questions the novelty of the integration idea, as many policies already represent compromises between different values and hence have to meet multiple objectives (Barrett and Fudge 1981, in Collier 1994:34). In an effort to distinguish EPI from 'normal' policy-making EPI is then interpreted as “an approach which requires the inclusion of the environment amongst the set of values being considered”, based on the observation that they have for long been neglected (p. 35).

Collier also elucidates the issue of trade-offs. Operationalisation of the broad sustainable development concept to date has mainly consisted of drawing up rather vague principles. A better way would be to develop targets and limits for selected indicators, but this has so far received little attention. Such measurement would help identify major trade-offs. According to Collier, the ideal response would be to use the economic concept of Pareto optimality as a criterion when making trade-offs, which was also proposed by Underdal (1980). However, practical difficulties such as insufficient knowledge make such a criterion hard to apply in the near future. The general problems with trade-offs and ambiguity in policy-making leads Collier to conclude that, as a second-best option, a set of criteria would be useful for the analysis of EPI.

Lastly, Collier argues that one needs to be aware of how integration involves different requirements at different policy-making stages. Four main stages are identified: (1) adoption of policy integration as an explicit objective; (2) integration in policy formulation; (3) translation into policy measures; and (4) implementation by government agencies and other actors (p. 45). Collier states that there is a degree of consensus regarding integration objectives in the policy formulation part of the process, but that disagreements and problems often occur at the implementation stage.

### **Liberatore: Environmental policy integration vs. dilution**

Angela Liberatore (1997) discusses the integration of sustainable development objectives in EU policy-making<sup>4</sup>. According to Liberatore, integration involves six dimensions:

- *Sectors* – the integration of environmental considerations into other policy sectors.
- *Issues* – some issues transcend the sector divisions and need to be dealt with by several sectors together, for example climate change and ozone layer depletion.
- *Space and time* – environmental integration requires that attention is paid to the interactions between different spaces: the geographical space of the affected environment, the economic space of the activities that have an impact on the environment, the institutional space of the relevant authorities and policy instruments, and the cultural space of values. Time dimensions also need to be matched to achieve sustainable development, for example the timing of ecosystem deterioration and rehabilitation, political decision-making, scientific research, economic investments and changes in societal attitudes.
- *Organisation* – the territorial competences of authorities in charge of environmental protection do not always match with the affected environment.
- *Instruments* – there is a need to broaden the range of policy instruments.
- *Distributive elements* – burden-sharing and benefit-sharing are crucial for the operationalisation and integration of sustainable development objectives into policy-making.

According to the focus of this literature review, only the first and second of Liberatore's dimensions qualify as forms of EPI while the other dimensions are prerequisites or means for EPI. Also, since the implications of integration of 'sectors' and 'issues' are not drawn out (Lafferty, 2002) and the relationships between the dimensions are not discussed in-depth, the typology appears to be of limited use here. However, another useful contribution to the EPI debate is made, namely attention to the weighting issue. Liberatore states that "the concept of integration assumes a form of reciprocity" (1997:119). Unless the different components, in this case sector and environmental concerns, have similar weight, the output will not be a policy that is *integrated* with respect to environmental aspects but a policy that is *diluted*. The indicators suggested to measure integration vs. dilution will be reviewed in the section on criteria for assessing EPI. Some may view the criterion of similar weight as too strict (or not strict enough), as well as difficult to measure, but the establishment of an antithesis of integration – dilution – is crucial for all studies critically analysing EPI in practice.

### **The Swedish Environmental Protection Agency: Goal conflicts at sector level**

As a response to sector responsibility and responsibility for achieving the national environmental quality objectives in Sweden (see previous section), SEPA has examined these ideas further and touches upon EPI in this examination (SEPA, 1999, 2000 and 2003). The Swedish government's definition of integration is employed; "integration means that consideration of the environment should characterise all activities that are significant to the environmental problems" (Government Communication 1999/2000:13, p. 6) (my translation). The point of departure of this definition is thus environmental problems, for which the most affecting activities are traced and identified, and made subject to environmental consideration.

While not addressing issues such as weighting, conceptual clarification is made in relation to the term '*sector*'. Often taken for granted, SEPA (2000, 2004a) presents three different perspectives on what defines a sector: (i) a group of regularly interacting *actors* that have more in common internally than with other actors; (ii) a set of *activities* with the same implications, e.g. activities described by

<sup>4</sup> Discussing EU policy, the term integration also refers to making environmental policy common to all member states. This sense of integration should not be confused with the sense embodied in the EPI concept.

production or consumption functions for the same or similar goods and services; and (iii) a *statistically* delimited segment of society. The actor perspective elucidates the division of responsibilities and the activities perspective is useful for discussing the size, significance and relationships of sectors. A statistical perspective is of practical use for calculating impacts, costs and other factors. The discussion on sectors highlights the complexities, for example sector overlaps, that may arise when making sector integration and related responsibilities operational.

Another issue discussed by SEPA (1999, 2003) is the inevitable emergence of trade-offs and synergies as a result of the integration imperative (see also Collier, 1994). While an initiative for integrating environmental, economic and social policies can be coherent at an overall level, trade-offs and goal conflicts are likely to appear at sector level. There are both ‘internal’ goal conflicts involved when multiple environmental goals are to be reached, and ‘external’ goal conflicts when environmental and other societal goals cannot be reached simultaneously. The examples of internal and external trade-offs and synergies illustrate how important it is to address them when conceptualising EPI. In the case of Sweden, it is further indicated that an overall priority-setting of environmental and societal goals to guide the making of trade-offs has not been made by the government. Instead, trade-offs are currently dealt with at the administrative level, sometimes by an individual civil servant. This raises the issue of to what extent EPI should be a political issue and to what extent it can be accommodated in administrative decision-making systems.

### **Eggenberger and Partidario: Substantive vs. procedural integration**

Eggenberger and Partidario (2000) view the coordination of different sector policies to achieve sustainable development as a major challenge for spatial planning. From this particular perspective on EPI they argue that “linking spatial planning with strategic environmental assessment (SEA) is being considered as a crucial condition for sound development, and an important opportunity to move ‘sustainability’ up the ladder of decision making” (p. 201). SEA is seen as an important tool for balancing economic and social considerations with environmental ones. They argue that as a ‘systemic approach’ it can help disaggregate key components of a planning system into parts that are individually analysed and then put together again with the objective to integrate. Although EPI at policy level is likely to pose different challenges and involve different factors than EPI at planning level, they make some observations and arguments of general relevance.

Eggenberger and Partidario define integration in terms of the whole being bigger than the sum of its parts; “integrating in fact means a new entity that is created where new relationships are established, bearing on individual entities that have specific characteristics and specific dynamics but in combination act in a different way” (p. 204). In contrast with this rather ambitious definition, their criteria for the integration process are generous; “whenever there are two professionals with different backgrounds looking at the same problem with similar objectives they are integrating. Whenever there are two different topics that need to be tackled together, there is integration” (p. 204).

Although the forms of integration identified by them (see Table 2) refer to integration of development planning and environmental assessment, some aspects can be transferred to the level of EPI in sectoral policy-making. The ‘substantive’ form represents objectives of integration and thus what should be expected from policy/planning *outputs* that have undergone a process of integration. The other four forms answer the question ‘how can EPI be achieved’ (and will be reviewed further in a later section), and thus relate to integration as a *process*. Several of the bullet points under these forms are less relevant for the policy level and the classification is not always clear. However, two points can be made. First, achieving EPI can involve different types of integration processes. Second, some types are more direct and practical (methodological) and some are more indirect and act as underlying factors (policy and institutional).

**Table 2. Forms of integration**

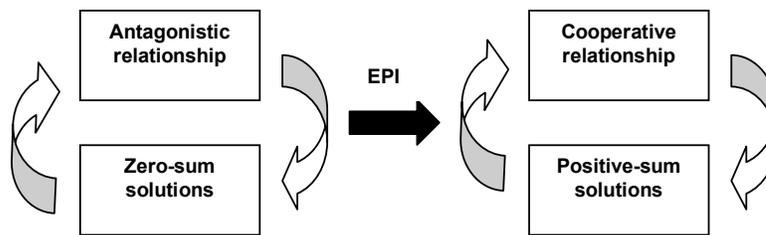
<b>1 Substantive</b>	<ul style="list-style-type: none"> <li>• The integration of physical or biophysical issues with social and economic issues</li> <li>• The integration of emerging issues such as health, risks, biodiversity, climate change and so on</li> <li>• The (appropriate) integration of global and local issues</li> </ul>
<b>2 Methodological</b>	<ul style="list-style-type: none"> <li>• The integration of environmental, economic and social (impact) assessment approaches such as cumulative assessment, risk assessment, technological assessment, cost/benefit analysis, multi-criteria analysis</li> <li>• The integration of the different applications, and experiences with the use of particular tools such as GIS (geographical information system)</li> <li>• The integration and clarification of (sector) terminologies (including the element of 'strategic')</li> </ul>
<b>3 Procedural</b>	<ul style="list-style-type: none"> <li>• The integration of environmental, social, economic planning/assessment, spatial planning and EIA</li> <li>• The integration of sector approval/licensing processes, spatial planning and EIA</li> <li>• The adoption of coordination, cooperation and subsidiarity as guiding principles for (governmental) planning at different levels of decision-making</li> <li>• The integration of affected stakeholders (public, private, NGO (non-governmental organisation)) in the decision-making process</li> <li>• The integration of professionals in a truly interdisciplinary team</li> </ul>
<b>4 Institutional</b>	<ul style="list-style-type: none"> <li>• The provision of capacities to cope with the emerging issues and duties</li> <li>• The definition of a governmental organisation to ensure integration</li> <li>• The exchange of information and possibilities of interventions between different sectors</li> <li>• The definition of leading and participating agencies and their respective duties and responsibilities</li> </ul>
<b>5 Policy</b>	<ul style="list-style-type: none"> <li>• The integration of 'sustainable development' as overall guiding principle in planning and EIA</li> <li>• The integration of sector regulations</li> <li>• The integration of sector strategies</li> <li>• The timing and provisions for political interventions</li> <li>• Accountability of government</li> </ul>

Source: Eggenberger and Partidario (2000:204, Box 2)

### **Hertin and Berkhout: EPI in the context of departmental specialisation**

Hertin and Berkhout (2001 and 2003) are concerned with analysing EPI as a practical element of a larger ecological modernisation process and use the EU Cardiff process as an empirical example. They emphasise the importance of intra-governmental relationships for EPI and point to three features of traditional policy structures not conducive to ecological modernisation. First, environmental interests and polluter interests tend to have different nature, in that the latter are driven by strong economic motives and are represented by well-established advocacy groups with good access to the political system while environmental interests tend to be more dispersed, long-term and less well represented. This means that their respective influence on the policy-making process is by tradition asymmetric. Second, when environmental departments are involved in sector policy formulation, it tends to take place during the later stages, thus environmental concerns come to be seen as restrictions and costs. Third, conflicting interests of environmental and sector departments are often 'resolved' through bargains that satisfy both interests but are highly inefficient, for example parallel implementation of contradictory policies or costly end-of-pipe technology.

With this backdrop, Hertin and Berkhout find that advocates of policy reform along the lines of ecological modernisation argue for true integration rather than 'additivity'; "Rather than a 'layering' of new environmental demands on top of existing policy processes, environmental considerations should be embedded at the heart of policy-making routines" (2001:5). Thus, they frame the problem of EPI in a power structure, articulated by interests and organisational relationships, rather than as a rationality or process problem. They further argue that problem perception, departmental relationships and policy solutions are self-reinforcing cycles, that can be either positive or negative (see Figure 1). If environmental protection and economic development were seen as compatible aims, more cooperative relationships could be expected and thereby also more proactive, win-win outcomes. It is concluded that "from this perspective, the main objective of environmental policy integration is to enable environmental policy-making to shift from a traditional antagonistic model to a new cooperative model" (p. 6). Hence, EPI is seen as a relatively concrete set of purposive measures that are to function as catalysts for an overall paradigm shift.

**Figure 1. Relationship between environment and sector policy departments and policy outcomes**

Source: Hertin and Berkhout (2001:6, Figure 1)

Hertin and Berkhout do not explore the conceptual underpinnings or definition of EPI in detail, but focus on the organisational environment and power structure within which it takes place. What is perhaps most interesting about their contribution, however, is that they put EPI in a larger context of ecological modernisation and look beyond the short- and medium-term. In their view, EPI is a transitory means for achieving a new type of policy-making. In reality, their vision of such policy-making may not differ much from other authors, but the issue of what comes after integration is raised, in terms of a new policy-making culture.

### **Lenschow: Ensuring substance follows from process in EPI**

Andrea Lenschow has published widely on EPI in recent years, focusing particularly on EPI in the EU institutions. In the introduction to her edited book *“Environmental Policy Integration: Greening Sectoral Policies in Europe”*, the rationale for EPI is clearly described; “In view of barely satisfactory results of environmental regulatory policy to improve the state of the environment in Europe, and also in response to an increasingly deregulatory policy-making climate, attention has shifted towards changing the nature and outlook of sectoral policies” (Lenschow, 2002c:3). In addition to this “internal performance crisis”, the paradigm of sustainable development has also contributed to the emergence of the EPI principle. However, it is also argued that this rationale may not be obvious to all parties involved in EPI; “the ones who were made responsible for policy failure in the environmental field and therefore contemplated new solutions and those to carry the main burden of the proposed changes were not the same” (p. 5).

Lenschow conceives EPI as a principle; “EPI represents a first-order operational principle to implement and institutionalise the idea of sustainable development” (p. 6; see also Lenschow, 2002b:21-23). Considering how vague it is perceived by many, one could argue that a further level of operationalisation is required. Lenschow suggests that, as a principle, EPI should encompass both policy processes and outputs. It is found that in the EU it has been understood mainly as a procedural principle so far. This implies that environmental consequences should be recognised and assessed through various formal procedures and decisions adjusted accordingly. However, the interpretation of EPI as a procedural principle also has some problems; “In the absence of clearly defined policy goals, indicators and timetables, however, there remains ample room for sectoral policy-makers to evade such substantive environmental responsibilities. The integration process currently faces the challenge of ensuring that substance follows from procedure” (p. 7). Hence, Lenschow recognises the important need for addressing the relationship between integration process and substantive output.

Although Lenschow tends to be concerned with strategies for EPI (see 1997, 2002b,d), she draws on a classification of forms of EPI by Hey (1996, in Lenschow 1999) which is helpful when disentangling EPI conceptually. ‘Active integration’ is a top-down process in which a set of policies and instruments for the achievement of ambitious environmental targets for a sector are defined. ‘Defensive integration’, on the other hand, does not challenge traditional sector priorities explicitly but calls upon policy-makers to assess the environmental impact of all activities and limit environmental side-effects. This form corresponds with the interpretation of EPI as a procedural principle (see above). Finally, ‘indirect integration’ is an entirely unplanned process, where environmental benefits occur as side-effects.

Like Collier (1994) and SEPA (1999), Lenschow also emphasises the need to consider trade-offs as a critical aspect of the EPI concept. She points to the inherent ambiguity of the sustainable development concept as a problem when operationalising EPI; “‘sustainable development’ represents an idea able to facilitate political consensus; it offers a story that is attractive to many actors because it provides a conceptual foundation for the pursuit of widely accepted ethical values (intergenerational equity, alleviation of poverty, environmental protection) at seemingly low financial and political costs” (2002c:6). Sustainable development – the “mother concept” of EPI – may rightly assume compatibility between economic, social and environmental concerns at a global level. But at sector and sub-sector levels trade-offs are likely to appear and there may be real winners and losers of EPI, according to Lenschow (see also 2002b:34). As the EPI principle becomes increasingly operationalised, will the legitimacy of sustainable development collapse? The ambiguity of sustainable development also opens up for different interpretations of EPI, as illustrated by the country case studies in the book. For example, in the Netherlands EPI is perceived as a bottom-up attitudinal change, in Germany it is perceived as a chance to correct market failures, and in the UK it is perceived mainly as an impetus for rationalizing government and eliminating contradictions.

Relating EPI to the larger concept of sustainable development is one of the strengths of Lenschow’s contribution to the debate. She points to the fundamental questions regarding policy priorities that need to be answered in order to make EPI credible, effective and substantive. The conclusion of Lenschow (2002d) is that a ‘substantive’ interpretation of EPI and formulation of criteria to support sector policy-makers are necessary, in the form of concrete targets and indicators. Rather than portraying only win-win scenarios, fundamental trade-offs involved in changing to a sustainable development path also need to be addressed, as well as redistributive measures in addition to various procedural tools to solve conflicts of interest.

#### **Lafferty: A normative interpretation of EPI – ‘principled priority’**

William Lafferty starts from the clear assumption that “the general environmental or ecological element of sustainable development is the most fundamental – the one without which the concept loses its distinctive meaning” (Lafferty, 2002:2). Focusing on EPI, a brief literature review is provided in order to offer a conceptualisation of policy integration for sustainable development that “has not been adequately developed” and is “a prerequisite for further empirical work” (p. 8-9). In an article co-authored with Hovden (2003:5), it is further stated that it is important to distinguish the task of defining the concept from a discussion of implementation. EPI can both refer to a state of affairs which is the aim of policy-making and a process necessary for achieving change. Lafferty and Hovden are very clear on the point that they are concerned with EPI as a “revision of the traditional hierarchy of policy objectives” (p. 2) rather than as a set of ‘add-on’ measures.

Based on the literature review, Lafferty concludes that EPI cannot merely be “good policy making strategy” in terms of removing contradictions and realising mutual benefits (see Collier, 1994). There are “numerous very real conflicts of interests with respect to many environmental issues” and “a primary focus on the search for mutual benefits may... draw attention away from the fact that environmental policy often affects certain interests in a negative manner” (p. 12). Instead, a normative EPI concept is proposed; “we would argue that the whole point of EPI is, at the very least, to avoid situations where environmental objectives become subsidiary, and, in the broader purview of sustainable development, to ensure that they become *principal* or *overarching* societal objectives” (p. 13, my italics). Having established this “essential difference” between EPI and “good policy making”, Lafferty defines EPI as implying:

- “the incorporation of environmental objectives into all stages of policy making in non-environmental policy sectors, with a *specific recognition* of this goal as a *guiding principle* for the planning and execution of policy;
- an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimise contradictions between environmental and sectoral policies by giving *priority* to the former over the latter” (p. 13, my italics).

Lafferty clearly addresses what is suggested to be the essence of the EPI issue – the relative importance of sectoral and environmental objectives in the integration process. In contrast to some other authors addressing normative aspects (see for example Liberatore, 1997), Lafferty also incorporates a certain qualification as a criterion in the EPI definition, namely that environmental objectives should receive ‘specific recognition’ or ‘principled priority’ (Lafferty and Hovden, 2003:9). This viewpoint is defended by reference to two trends (Lafferty, 2002). First, he contends that environmental ‘privilege’ is justified by the shift in environmental policy discourse, articulated in documents such as the Brundtland report and Agenda 21 that prescribe a shift of environmental policy from the periphery to the centre of decision-making. Second, the irreversibility of damage to life-support systems implies that “at least *some* environmental/ecological objectives...simply cannot be *balanced* with political goals that threaten such life-systems” (p. 14-15). In this sense, environmental concerns deserve a kind of “veto” right in relation to other political concerns.

However, a restriction is also placed on the privilege, or “specific recognition”, of environmental objectives. According to the norms of democracy, environmental objectives cannot automatically override other societal objectives, but must be subject a democratic decision-making process. Hence, Lafferty concludes that “the ultimate trade-off for EPI is between existing democratic norms and procedures on the one hand, and the goals and operational necessities of sustainable development on the other” (p. 15). The democratic aspects of EPI are not elucidated by many other authors, except for later publications by Lenschow (2002b,d).

Having defined the essential characteristics of EPI, Lafferty further identifies two dimensions of EPI: vertical environmental policy integration (VEPI) and horizontal environmental policy integration (HEPI). VEPI refers to “the extent to which a particular governmental sector has taken on board and implemented environmental objectives” (Lafferty, 2002:16), i.e. a form of intra-departmental EPI. While others use the term vertical for integration between different constitutional levels (see for example OECD, 2002), the vertical axis in this case signifies “the administrative responsibility ‘up and down’ within the arena of ministerial sectoral responsibility” (p. 18). According to Lafferty, this type of “greening” does not need to imply that environmental objectives receive “specific recognition”, but that the sector itself develops an understanding of EPI. HEPI, on the other hand, is “the extent to which a central authority has developed a comprehensive cross-sectoral strategy for EPI” and in this case the issue of specific recognition becomes very important. Lafferty proposes that one should understand HEPI as “insisting on at least equal treatment for the environment vis-à-vis other competing interests” (p. 18).

The distinction between VEPI and HEPI is somewhat unclear for two reasons. First, VEPI appears to be inconsistent with Lafferty’s definition, since “specific recognition” is a criterion for a policy process or output to qualify as environmentally integrated. VEPI is then not necessarily a true integration process. Second, it is questionable if it is practically possible to distinguish between the two dimensions, by tracing a particular policy output to either a sector EPI consideration or a cross-sector strategy.

### **Lundqvist: Organisational vs. normative rationale of EPI**

In his discussion of the nature of ‘ecological governance’, which appears to strive for the same broad objectives as EPI, Lennart J. Lundqvist (2004) distinguishes between two different ‘problems’, or rationales. The first problem concerns *effectiveness*; “how to instil ecological concerns into the workings of traditionally non-environmental sectoral policies and agencies” in the most effective and cost-effective way (p. 118). Lundqvist argues that ecological governance can be justified from a strict effectiveness, or rational decision-making, perspective, in that greater environmental effectiveness can be achieved through cost-effective, proactive anticipation and policy integration. The second problem relates to the *strength*, or privilege issue; i.e. how much weight environmental concerns should be given in comparison with other societal concerns in the process of EPI. By identifying these two rationales, Lundqvist thus distinguishes between *organisational* and *normative* aspects of policy integration. From an organisational perspective, Lundqvist suggests, based on Knoepfel (1995), that integration includes:

- “access for ecological governance to policy instruments used in sectoral policies;
- build-up and/or strengthening of institutional structures to bring attention to issues of sustainability and provide arenas for solution of conflicts;
- conscious strategies and means of monitoring ecological performance in terms of resources used and results achieved in relation to the sector’s overarching objectives” (p. 119).

The discussion on the nature of EPI results in the formulation of criteria for analysing the effectiveness and integration aspects of rational ecological governance:

- “Ecological governance is *effective* in so far as ‘ecological’ values and norms, ecological capacities, and codes of ecologically good conduct are *actually integrated* into the political and administrative decision-making process of sectoral agencies and authorities.
- Ecological governance is *integrated* in so far as ‘ecological concerns’ are given *specific weight or preference* through political decisions at the highest level of authority, and when this is communicated and implemented into the political and administrative decision-making process of sectoral agencies and authorities” (p. 122) (my italics).

The main question one could pose to this definition is that it is somewhat circular, in that ‘integrated’ is defined as a condition when ecological concerns are given ‘specific weight’ while ecological governance is only ‘effective’ when ‘integration’ has taken place. The distinction between the two criteria then becomes dependent on if there is a clear difference between ‘ecological values and norms, capacities and codes of good conduct’ (the object to be integrated in ‘effective ecological governance’) and ‘ecological concerns’ (the object to be integrated in ‘integrated ecological governance’). However, Lundqvist’s distinction between the normative and organisational aspects of EPI is useful when studying possible rationales behind EPI. Should EPI take place due to a ‘value neutral’ policy-making effectiveness concern or a normative concern for increasing the integrity of the environment?

Lundqvist then discusses two dimensions of integration, *intra-sectoral* vs. *inter-sectoral*, in relation to the two criteria. According to Lundqvist, intra-sectoral integration can take place by making sectoral decision-making more effective in ecological terms (see the effectiveness criterion), i.e. not necessarily by assigning ‘specific weight’ to ecological norms and values. Inter-sectoral integration, on the other hand, “comes about only if and when the ecological concerns are given a *specific weight* in relation to other sectoral objectives, all the way from equal to ‘more equal than others’” (p. 121). These dimensions are in essence the same as Lafferty’s (2002) VEPI and HEPI dimensions. Both Lundqvist’s and Lafferty’s descriptions of intra-sectoral EPI are problematic, however. Because no “specific recognition” of environmental concerns is required in this form of EPI, they could be interpreted as arguing that no weighting is needed at the sectoral level or that intra-sectoral integration opportunities are only of a ‘win-win’ character and not involving trade-offs. However, such conditions do not seem realistic. Alternatively, intra-sectoral integration could be interpreted as a process in which ecological concerns are integrated with less than equal weight to other concerns in a sectoral policy, as opposed to not being considered at all and absent from the weighting process. In any case, a classification into intra-sectoral and inter-sectoral EPI would benefit from further analytical work.

## Summary

To summarise, in this section it has been demonstrated how the EPI concept can be viewed and analysed from different perspectives. By breaking it down to the basic elements of ‘policy’ and ‘integration’ it was shown that the terms themselves are relatively imprecise, bound to pose analytical challenges to and produce different interpretations of policy integration as a concept. Reviewing a couple of texts on general policy integration and coordination revealed that it is a problem not unique to the environmental context. However, the usefulness of lessons from general policy integration is questionable since they picture the integration problem as one of integrating existing parts into a new whole, either through an improved decision-making process or new administrative arrangements. The review of selected EPI literature, on the other hand, suggests that the integration challenge consists of

integrating one type of concern (environmental) into already existing sets of sector concerns and related policy processes, organisational arrangements and power structures. The following list of key conceptual issues for EPI emerges from the literature review, and some of these issues will be discussed further in the next section:

- EPI as a process (a set of measures) or output (a result, a new state of affairs)
- EPI as a transition in policy-making: what comes after?
- Similarities between EPI and ‘normal’ principles for good policy-making
- EPI as articulation of fundamental trade-offs inherent to sustainable development
- Weighting of sector and environmental objectives and the issue of ‘principled priority’
- Existence of decision rules for determining environmental priority (such as Pareto optimality)
- The democratic dilemma in getting the ‘right’ level of EPI
- The level of ‘optimal’ integration and efficient governance
- EPI as an absolute state or as a matter of degree
- Negative EPI: dilution
- EPI as a top-down or bottom-up initiative within government (cf. HEPI and VEPI)
- ‘Ownership’ of EPI by sector or environmental representatives (cf. active vs. defensive integration)
- Definition and boundaries of a ‘sector’

## Key conceptual choices for studying EPI

The literature review suggested that there is a general consensus on the need for EPI, although different levels of emphasis were placed on the normative basis for increased priority of environmental concerns in sector policy-making and the rational basis for considering environmental implications of sector policy decisions earlier and in a more preventive in the decision-making process. Despite these two standard rationales, the concept has been framed in relatively different contexts, ranging from institutional structures for ecological modernisation to spatial planning processes. The aim of this section is to synthesise the theoretical literature on EPI by highlighting key conceptual choices.

### EPI as a normative or rational concept

The brief review of the historical background of EPI showed that the rationale for EPI has developed based on a normative concern (the environment needs higher priority in sector policy-making). It has also been justified by a desire to make policy-making more rational, i.e. by considering environmental implications earlier and closer to the (sector) driving forces of environmental problems, as well as removing contradictions and realising mutual benefits. The question is whether an interpretation and definition of the EPI concept should reflect the normative stance, i.e. include a specific weight ('less than', 'equal to', 'more than equal to') for environmental concerns, or the rational stance<sup>5</sup>. Basic definitions of the term 'integration' allow for both kinds of interpretations (see above). The implication of this choice is that if a normative definition specifying a certain weight of environmental concerns in relation to others (e.g. equal or more than equal) is chosen, EPI becomes absolute in nature. It either exists in a given situation or it does not. For example, Lafferty and Hovden (2003) choose to make EPI conditional on that 'principled priority' is given to environmental objectives (see also Liberatore, 1997 and Lundqvist, 2004). The other option is to avoid an absolute, normative criterion in relation to weighting and view EPI as a matter of degree, i.e. as a scale ranging from weak EPI to strong EPI (see Peters, 1998).

The reasons for choosing a normative EPI concept could be that the existence of inherent trade-offs between policy objectives is such a dominating feature of EPI that it must be reflected at the conceptual level. Some would argue that when environmental concerns are given less than equal weight in relation to other concerns there will be dilution rather than integration (see Liberatore, 1997). Furthermore, it could be argued that a 'rational' EPI concept is superfluous since the changes of sector policy-making it implies are all principles for good decision-making in general. On the other hand, a rational concept of EPI allows for a more generous and flexible view of integration. First, even when environmental concerns are given less weight and integration is only marginal, it could be seen as a first step in a long-term process. Second, it was seen in the literature review that integration does not always take place at the political level, where important normative judgements should be made, but is sometimes dealt with by civil servants (see SEPA, 1999 and Peters, 1998). For the purpose of this paper, a rational definition of EPI is seen as most useful and flexible as a starting point, especially in light of the democratic dilemma pointed out by Lafferty (2002). However, such a definition would need to be complemented by a set of criteria in order to determine whether integration is weak or strong in a given situation.

### EPI as a process or output

Both actual attempts at achieving EPI (second section) and studies of EPI (third section) suggest that EPI can be interpreted as pertaining either to the policy process or to the substantive policy output. Of course, these two interpretations are not mutually exclusive and the choice between them can be avoided by understanding EPI as an overarching principle (which still would need to be made

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<sup>5</sup> In relation to a rational view on EPI, however, it should be noted that it is in fact normative since rationality is seen as a desirable feature of policy-making.

conceptually operational with respect to process and output in policy analysis, however) (see Lenschow 2002c). The boundary is not always clear, for example policy outputs can refer to the process of policy-making (e.g. adopting a green procurement policy). In this paper, however, policy outputs refer to ‘substantive’ outputs, i.e. policy instruments, that target non-governmental actors and their activities in the sector.

The two perspectives are likely to involve different analytical foci, though. If studying EPI as a process one would be interested in looking at general policy process variables such as intra-governmental power relations, communication processes, and analytical procedures. It may also be useful to divide the policy process into stages and see how the nature of integration changes at different stages (see Underdal 1980, Collier 1994 and Hey 2002). Studying EPI as a policy output, on the other hand, is likely to involve more subject-specific variables and requires knowledge about substantive environment-sector linkages. It may also be of interest to expand the focus from the policy output to the sector outcome, i.e. the resulting changes after the policy output has been implemented and responded to by the actors affected (see further discussion below). The main point is that as a consequence of different analytical foci, different types of criteria will be needed to assess EPI. EPI as a process would require a set of procedural criteria, whereas EPI as an output would require a set of substantive criteria.

An important aspect when considering this choice is the linkage between the integration process and the integrated output. If both EPI process and output are studied, a key issue to address will be how effective the process is in achieving a desired output. If only the process is studied, as a proxy of the output, the linkage will also be a key factor to address in order to draw conclusions. In this respect, two issues then require attention. First, assumptions regarding the linkage need to be well justified. Second, it has to be decided whether it is acceptable that a process with a high degree of EPI can produce an output with little positive environmental impact (see also Lafferty and Hovden, 2003:6). For example, when integrating energy and environmental policy there may be good access to the policy process for environmental actors, good communication processes and a good information basis, but in the end other objectives such as security of supply and industrial competitiveness may be prioritised. It could also be that positive environmental outcomes are incidental and not caused by deliberate integration actions (Collier, 1994). This issue relates back to the interpretation of EPI as a normative or rational concept (see above). A ‘rational’ conception of EPI would in principle accept a policy output with low priority of environmental concerns if it was arrived at through a rational decision-making process.

The differences associated with a focus on the process or the output are thus key issues to take into account when studying EPI. For the purpose of this paper, it is suggested that both process and output are important, and that understanding the linkage between process and output is what really adds value to an EPI study. It would hopefully lead to answers both to how integration can be achieved and if the resulting outputs are satisfactory in relation to the environmental problems. Intentions, actions and results would then be clearly separated. Such an approach would be supported by a flexible and ‘neutral’ definition of EPI as a process complemented by clear procedural and substantive criteria for analysing the degree of EPI. In relation to integration of transport and environmental policy, Hey (2002:127) defines EPI as “early coordination between sector and environmental objectives, in order to find synergies between the two or to set priorities for the environment, where necessary”. This definition conceptualises EPI as a process or activity that opens up for normative judgements and qualifications, but does not make them. The main object of the integration process here is ‘objectives’, which arguably represents a more fundamental form of integration than imposing environmental assessment procedures or mitigation measures on policy-making with traditional sector objectives. Substantive and procedural criteria will be discussed in a later section.

### Other conceptual issues

**Integration of environmental or sustainable development considerations.** As the historical review showed, EPI can imply consideration of objectives of *environmental protection*, *environmental sustainability*, or *sustainable development of environment, economy and society*. The reason why it is important to have a clearly defined scope in relation to the overall objective of EPI is that different objectives may require different assessment criteria. For *environmental protection* it is just a matter of ‘more or less’ total protection when analysing integration, while *environmental sustainability* is more stringent and can imply specific environmental thresholds and limits that must not be exceeded. Integration of *sustainable development* considerations in all three dimensions (social, environmental, economic) is undoubtedly the most complex integration form and has a larger remit than the concept of EPI. This integration objective may also involve complex trade-offs between sub-objectives, such as costs for environmental protection and social equity issues.

**Policy integration or sector integration.** Another essential conceptual clarification is whether integration refers to the integration of government policies or the integration of environmental concerns in sector activities that are beyond the direct control of government policies. This difference involves a significant impact on the scope of an EPI study. Furthermore, these two dimensions may involve completely different strategies and measures for integration, as well as expectations and requirements on the outcome. Most studies focus on environmental *policy* integration, as does this paper. However, also within the sphere of policy integration there may be differences in assumptions regarding importance, influence and the scope of policy output. Clearly defining the policy studied and describing the expected sector environmental outcome in an EPI study appears to be important.

**Policy components and integration.** A related issue is that the term policy has multiple meanings (see section 3). One type of distinction that is potentially useful is whether integration refers to (i) common or consistent policy objectives, (ii) policy instruments that aim to achieve different policy objectives, and/or (iii) combined implementation of policy instruments that were devised for different, and potentially inconsistent, policy objectives. These different components could also be seen as stages in the policy process. Regardless of classification, the particular nature of a policy in a given context is important to describe, particularly if it represents an intention or an action.

**Intra-sectoral vs. inter-sectoral integration.** Lafferty (2002) and Lundqvist (2004) (see also Jacob and Volkery, forthcoming) suggested that it is possible to distinguish between EPI within a sector and EPI as a cross-sectoral strategy spanning several governmental sectors. It was argued that the value of such a differentiation is questionable since it is the same object being integrated in both cases, namely environmental concerns. Furthermore, this view is relatively complex since environmental policy appears both to be seen as a sector (in inter-sectoral EPI) and as a cross-sectoral issue (in intra-sectoral EPI). However, when undertaking an EPI study it can of course be useful to distinguish whether the integration imperative and motivation comes from the sector itself or is being imposed and coordinated by central government.

**Integration and different policy-making levels.** The EPI literature reviewed above did not address integration of different policy-making levels (local, regional, national and international) as a dimension of EPI. However, this has sometimes been done, for example in case studies on governance for sustainable development by OECD (2002). It can be argued that while it may be an important feature of sustainable development governance, it does not necessarily contribute directly to the integration of environmental concerns in sector policy-making, which is how EPI is understood in this context. Furthermore, it is unclear what such integration would imply, for example in terms of constitutional changes and transfers of mandates. Cooperation and coordination between different levels, on the other hand, is an important factor for EPI, especially if there are different responsibilities for the different stages of policy-making, for example national policy formulation and local implementation.

**Policy integration and participatory policy-making.** Like the previous issue, more participatory policy-making is often associated with the ‘mother concept’ of EPI – sustainable development.

Increased participation may be an important means to achieve EPI, by involving more information, knowledge and actor perspectives, as well as potentially making the EPI process more democratic. However, while public participation is an analytical variable and potential criterion for EPI, it should not necessarily be included as a defining feature of the EPI concept.

## How is environmental policy integration achieved?

Having discussed what EPI is and explained why it is needed, the next question is how to achieve it. What are the means and strategies for introducing EPI in a sector policy-making process (regardless if EPI is seen as a means [process] or end [output])? Answering this question also indicates what kind of analytical variables are relevant in the study of EPI progress. Already the review of some recent experiences (second section) and conceptual contributions (third section) has pointed to different means and strategies. Actually, while clear conceptual discussions of EPI are relatively few considering the great interest in the topic, the attention to means for EPI and influencing factors has been greater.

The aim of this section is to illustrate the broad range of both active measures and strategies suggested for EPI in the literature and analytical variables and underlying factors proposed to explain the level of EPI. Note that they refer both to specific, imposed EPI mechanisms and ‘normal’ sector policy-making. First, the influence of framing the EPI challenge on the identification of key variables and factors will be illustrated by a few examples. Then, concrete means and strategies suggested for EPI will be identified, divided into three broad classes, along with the identification of relevant analytical variables. In this overview, attention will also be given to underlying policy-making factors which may act as barriers or opportunities for EPI. The three broad classes are normative, organisational and procedural factors. Note that the aim of this categorisation is to facilitate an overview, rather than provide definitive categories for EPI analysis. Hence, attention should be given to specific factors identified rather than the category they have been assigned to. Finally, some attempts at assessing which means and strategies are most effective will be reviewed.

### Understanding the EPI challenge

It is notable how the framing of the EPI problem influences the perception of what means are necessary, purposive and effective to enhance the EPI process. For example, is the policy process a rational process with a clearly defined beginning and end, into which mechanisms for greater environmental consideration can be built? Or is the policy process instead made up of interactions of actors and less controllable bargaining and exchange of ideas, into which EPI must be introduced as a new fundamental cognitive or normative paradigm in the long-term? Such framing is done both by organisations actively trying to implement EPI and researchers studying it. Placing EPI in a specific context involves making certain assumptions regarding the nature of the problem and the interests and motives of actors involved. Three broad categories for factors influencing the success of EPI can be identified: normative, organisational, and procedural (Lenschow and Zito, 1998). A tendency to emphasise normative factors such as political commitment and the need to change overall policy-making cultures implies an assumption that the rationale for EPI has not been established well enough among those responsible for implementing it and that the political influence on policy-making is strong. An emphasis on organisational factors, for example inter-departmental relationships and allocation of resources, builds upon assumptions regarding the importance of governmental power structures, the influence of formal mandates and accountabilities on policy-making, and the embeddedness of organisational identity. Finally, an emphasis on various procedural means for EPI, such as monitoring systems and strategic assessment tools, suggests that the focus should be on (existing) sector decision-making processes and how they can be made more rational or infused with certain normative values such as environmental priority.

A couple of examples can illustrate such framing. Underdal’s (1980) conceptualisation of policy integration is based on a rational view of the decision-making process. Integration can be ensured if only inputs are comprehensive, processing occurs by aggregating inputs to a common measure and outputs are controlled for consistency. The most certain way to achieve this, then, is to use a “direct approach” aiming to “find sufficiently precise integrating goals and guidelines, and to secure their application” (p. 166). However, realising the difficulties in achieving sufficient precision and the

inappropriateness of such a controlling top-down approach, some “indirect approaches” which are more uncertain in terms of effects on policies are identified.

An organisational framing of the EPI challenge is provided by Hertin and Berkhout (2001). In their opinion, the main problem is that an antagonistic relationship between environmental and sector policy-makers produces zero-sum solutions. This relationship is caused by the historically low status of environmental departments and their traditionally late involvement in sector policy-making. Bargaining becomes the “highly inefficient” means to resolve issues. Understanding EPI as a problem of organisational set-up and existing power relations between government departments leads to the conclusion that appropriate means to improve EPI would be to restructure government departments, enhance communication processes or redefine roles of sector policy-makers.

However, the three frames and categories – normative, organisational, procedural – are strongly interconnected and it should be emphasised that rarely only one type of problem formulation and proposal of strategies and measures are made. For example, policy-making culture is closely related to organisational structure, and organisational arrangements have a large impact on the procedures for decision-making. An example of a comprehensive framing is the checklist for “improving policy coherence and integration for sustainable development” developed by OECD (2002a) (see Box 3).

**Box 3. Checklist on improving policy coherence and integration for sustainable development**

<p><b>I. Is there a common understanding of sustainable development?</b></p> <ul style="list-style-type: none"> <li>● Clear and accepted operational objectives and principles of sustainable development</li> <li>● Clear understanding by the public, public organisations and levels of government</li> <li>● Clear examples illustrating benefits</li> </ul> <p><b>II. Is there clear commitments and leadership?</b></p> <ul style="list-style-type: none"> <li>● Clear commitment at the highest level</li> <li>● Effective communication of commitment within government</li> <li>● Efforts to bridge gaps between administrative and political agendas</li> <li>● Expression of leadership through a sequence of priorities over time</li> <li>● Maintenance of a sense of urgency of the issues</li> <li>● Encouragement, reward and dissemination of pioneer activities by agencies and local communities</li> </ul> <p><b>III. Are conditions in place to steer sustainable development integration?</b></p> <ul style="list-style-type: none"> <li>● Existence and location of institutional “catalyst”</li> <li>● Specific reviews of new and existing laws and regulation to check compatibility with sustainable development objectives</li> <li>● Mechanisms for effective feedback between government levels</li> <li>● Reorientation from sectoral perspectives to a more “issues-oriented” agenda in organisations</li> <li>● Integration of sustainable development in regular government exercises, e.g. the budget process</li> <li>● A framework for assessing performance of organisations in relation to sustainable development</li> <li>● Evaluation mechanisms to support sustainability appraisal in the public sector and use of these evaluations</li> </ul> <p><b>IV. Is stakeholder involvement in decision-making encouraged?</b></p> <ul style="list-style-type: none"> <li>● Mechanisms for consumer information</li> <li>● Legal provisions and guidelines for consultation and participation</li> <li>● Mechanisms for monitoring the influence of participation and evaluation of consultations</li> <li>● Mechanisms for ensuring transparency of decisions</li> </ul> <p><b>V. Is the diversity of knowledge and the scientific input to problems adequately managed?</b></p> <ul style="list-style-type: none"> <li>● Mechanisms for managing conflictual knowledge</li> <li>● Framework for constructive focus on areas of disagreement such as developing scenarios and options</li> <li>● Attention to the effectiveness and efficiency of information flows between scientific community and decision-makers</li> <li>● Efforts to promote “joined-up” research between disciplines and support forward-looking and policy-relevant knowledge</li> </ul>
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Source: OECD (2002b:813)

Aimed at policy-makers, it is intended as a basic support in the overall EPI process. Normative factors such as common understandings and political commitment are recognised, as well as procedural measures such as routine reviews of new legislation for compatibility and organisational performance assessment. Less represented are organisational measures, although the importance of communication is recognised and the introduction of an institutional “catalyst” is proposed.

### Normative factors

Normative factors in this context refer to values, norms and traditions that set the general parameters for policy-making and determine the basic significance of the EPI concept in the policy-making system. These factors are of a ‘soft’ and elusive character and generally take a longer time to change than organisational and procedural factors. The literature suggests that there are two types of normative factors of primary importance to EPI, political commitment and leadership, and policy tradition and administrative culture. In addition, two other factors, namely the time perspective and the role of knowledge, appear to influence the general context in which EPI is imposed.

Nearly all the literature in this field emphasises the need for *high-level political commitment* to make EPI credible and an active aspiration, as opposed to a principle on paper (see for example Lenschow 2002, Lafferty 2002, OECD 2002). This commitment should also involve clear and strong leadership on EPI issues, in order to maintain political momentum. In addition to making EPI more prioritised further down in the governmental hierarchy, a clear commitment is also necessary in order to have a democratic basis for EPI. However, in reality there is often a lack of true commitment and links to concrete policy action and decision-making in non-environmental policy sectors are often unclear (Hertin and Berkhout, 2001). Jordan (2002:35) illustrates this problem in his analysis of EPI in the UK, by using an analogy of Weale (1993) to describe the implementation of EPI in the UK; ‘hardware’, i.e. the organisations and procedures of governance, and ‘software’, i.e. the knowledge needed to implement EPI. According to Jordan, both hardware and software exist within UK government, which is known for “having one of the strongest and most effective systems for coordinating departmental policies”. A main pillar of this system is the homogenous and highly-trained civil service. Still, EPI has not been successful in the UK and a main barrier is identified as the lack of political will, i.e. the “electricity” of the system. Bad timing of EPI with political attention cycles is identified as one reason for this.

While high-level political commitment can be thought of as ‘pressure-from-above’ for EPI, Lenschow (2002d:243) argues that ‘*societal backing*’ and public support is also necessary. She states that “administrations rarely engage in path-breaking change unless they encounter pressure from the outside (crisis) or “below”” (*ibid.*). However, such a societal backing is necessarily difficult to manufacture as part of an EPI strategy and should be seen as a background variable instead.

A commonly identified means for ensuring effective translation of a commitment into concrete action is a formal overall *policy framework* for EPI or sustainable development in the government as a whole. Advising on general policy coherence, the OECD suggests that a comprehensive set of priorities should be established with a long-term view (OECD, 1996). Maintaining a strategic perspective is crucial, but also demanding in terms of information processing and potential political costs. In relation to EPI, a national strategy for sustainable development is commonly seen as such an overall framework (OECD, 2002). Based on an empirical examination, Lafferty and Meadowcroft (2000) found that with regards to horizontal EPI (HEPI) a national sustainable development strategy is extremely important, as it provides a platform for transcending difficult goal conflicts. However, formulating a policy framework for sustainable development also requires a clear definition of sustainable development, which can involve a long process in order to reach the “common understanding” that OECD (2002) refers to (see Box 3). Lenschow (2002a) and Collier (1994) have both pointed towards the inherent ambiguities associated with sustainable development when drawing out more concrete policy priorities (see also Doern, 1993). Fundamental trade-offs involved in changing paths need to be addressed. Furthermore, it has to be realised that while overall benefits may be reaped at the national governmental level, there may be net losses at the sector levels in the short term. Fudge and Rowe’s (2000) assessment of sustainability in Sweden suggests that these political

challenges may be easier to overcome in societies characterised by homogeneity and a tradition of cooperation between the government and other actors.

Related to political commitment is the factor *policy paradigm and tradition*. This factor is influenced by the former, but probably takes a longer time to change due to the embeddedness of many values, routines and perspectives in organisations. It refers to the main assumptions on which policy is based, the way in which policy is made and the professional culture among policy-makers. Lenschow (2002c:17) justifies the need to view this factor as an important analytical variable. Discussing “the role of ideas”, she argues that “it is helpful to consider policy interests as embedded in a frame of reference, which prestructures the thinking within a policy sector”. Sustainable development is a new frame of reference and its acceptance depends on “the relative persuasiveness of the causal story on the sectoral level”. Lenschow suggests that the general portrayal of sustainable development as a simple win-win scenario may make the idea seem less valid to policy-makers.

According to Collier (1994), the rare occasions of changing policy frameworks, for example introducing liberalisation of energy markets, offer excellent opportunities for creating structures and agendas for EPI. Among the more concrete means suggested to make policy traditions and cultures more conducive to policy integration are research, training and socialisation among decision-makers. This ‘intellectual strategy’ proposed Underdal (1980:167) would lead to “more comprehensive and holistic perspectives”. Another reason for increased training is identified by OECD (2002b:11) as an incorrect perception among civil servants of the sustainable development concept, namely as a new name for “environmental management”. Larger awareness-raising needs and cultural shifts amongst the whole population have also been referred to as means for EPI (OECD, 2001).

Another factor is the *time perspective* involved in governmental policy-making. According to OECD (2002b), decision-making in democratic systems tend to follow the electoral cycle of 4-5 years and so impairs a long-term decision-making perspective that a serious EPI effort should be based on. Liberatore (1997) argues that short-term perspectives lead to discounting of the future, which is counter to the whole idea of sustainable development. A lack of long-term vision makes it difficult to appreciate the link between present behaviour and future conditions and to redefine problems and opportunities in the light of new circumstances.

Finally, the role, status and tradition of using *knowledge and science* in the policy-making system may also be influential on the achievement of EPI. The case studies on governance for sustainable development conducted by OECD (2002c:30) indicated that as knowledge becomes increasingly technical and specialised it leads to an “insufficient linkage between the knowledge system and decision-making levels”. So far, mainly sector-specific responses to extending research and knowledge in relation to environment-sector relationships have been made, as opposed to an overall approach. Another aspect of knowledge and learning is that there is often few incentives within traditional bureaucracies to “learn from past experience and even less to admit, analyse and learn from past mistakes” (Carley and Christie, 2000:152).

### **Organisational factors**

Factors that can be crudely categorised as organisational in character include government architecture, interaction of actors within and outside government, power structures, resource allocation and budgeting, and capacity. They are all aspects of how policy-making has been organised in the government system.

Virtually all authors included in this literature review identify a fundamental organisational problem for EPI as *sectoral compartmentalisation* within government (see for example Weale and Williams 1993, Collier 1994, Hertin and Berkhout 2001, Jordan 2002). Institutional fragmentation (or ‘sectoral specialisation’, ‘departmental pluralism’, ‘functional differentiation’) of environmental and sectoral policy-making is the consequence of an efficiency objective; policy specialisation reduces complexity and increases cost-effectiveness (Hertin and Berkhout, 2001). The negative implication in terms of

EPI is that a turf mentality has developed within government, i.e. the ‘environment’ vs. the ‘sector’.. According to Jordan (2002), departmental pluralism has given rise to a tendency towards competition between sector departments to realise their interests. This has become an entrenched philosophy that precedes any ‘rational’ assessment of a new policy problem. In addition, the environmental portfolio has traditionally had a low status (Weale and Williams, 1993). Lafferty (2002:22) states that “a separate sectoral environmental authority will rarely, if ever, have the authority necessary to insert environmental objectives into the decision-making premises of other sectoral authorities”. Doern (1993) has examined the potential for the Canadian Department of Environment to become a more central agency. He argues that central space is limited and “new aspiring entrants... must confront and understand the bases of power of those who are already there” (p. 175). The power resources the Department needs to assemble to increase its status are an extended statutory mandate, extended capacity to deal with the increasing volume of decisions, structured contact with other departments, support by external actors in the green policy community, and convincing analytical and scientific capacity for sustainable development. Different responses to this and other organisational impediments to EPI have been suggested, for example manipulation of the organisational arrangements, improvement of coordination and communication processes, provision of incentives through budgeting, and extended interactions with external actors. Surprisingly, no authors reviewed have considered whether and when it may actually be desirable from an environmental point of view with institutional fragmentation.

Due responses to the compartmentalisation challenge, in terms of changes to the organisational arrangements, or *governmental architecture*, can take the form of (i) integrating departments and functions, (ii) establishing new institutions, or (iii) assigning existing institutions a new mandate, responsibility and accountability. With regards to the first two forms, long lists of possible reforms are provided by Peters (1998) and OECD (1996). For example, committees or boards to monitor sector departments can be established, a minister with a coordinative portfolio can be installed, and ‘superministries’ can be created. However, the effectiveness and desirability of such institutional reforms are regarded with scepticism by many. According to Lenschow (2002), institutional reforms are difficult unless there is a perception of a serious crisis. They are disruptive and it takes time to adjust to the new structure (OECD, 1996). In relation to integrated departments, Hertin and Berkhout (2001) see a risk in that the environmental commitment and competence can be lowered and that the new order depends on the initial position of environmental issues on the agenda. Lafferty (2002) and Jordan (2002) argue that new institutions may not be necessary, but strong leadership from the core of government is. According to Lafferty, it is a necessary institutional factor to have an overarching authority structure, such as a chief executive, planning agency, a body within the domain of the legislature or a last-resort judicial organ.

Relatively strong support for various *accountability* mechanisms and the assignment of new *responsibilities* to existing organisations is found in the literature, however. Although the use of legal control and sanctions is still in its infancy (OECD, 2002), a responsibility incorporating the environment can be communicated in other ways (for example, the Swedish sector responsibility initiative). The idea of this approach is to make sector departments internalise the policy-making principle of EPI. In that way they are forced to consider the sector’s environmental impact and to develop their own environmental capacities. Establishing formal accountability requires setting up an internal sector monitoring mechanism, which may be more efficient than overall environmental monitoring (OECD, 2001). In the longer term, changes of accountability and formal responsibilities may lead to an evolution of policy tradition and administrative culture, as new professional roles and tasks are developed. In the EU, this approach has been implemented by instructing the sector council formations to develop their own strategies with targets and timetables. Another accountability mechanism is to place a responsibility on an external organisation to monitor and evaluate EPI progress.

Overcoming institutional fragmentation can also be facilitated by increasing *coordination and communication*, without changing organisational mandates or hierarchical relationships. Interministerial committees and task forces can be implemented, ‘environmental correspondents’ can

be sent to sector departments, and a central unit responsible for overview can be installed (OECD 1996 and 2001, Hertin and Berkhout 2001). At the level of bureaucrats, networking schemes can be introduced, as well as regular circulation of staff between sector departments (OECD, 1996). In the UK, two EPI initiatives correspond to this type of factor: the Green Ministers Network and the Cabinet Committee on the Environment. However, success has been limited due to poor implementation, for example infrequent meetings (Jordan, 2002). Also in the EU the success of these types of measures has been limited. Assessing measures such as environmental correspondents within each Directorate-General, incentives for staff rotation and the Green Star system to mark environmentally sensitive legislative proposals, Lebessis and Paterson (2000, in Hertin and Berkhout 2001:11) argue that “despite the clear need for the integration of policies and despite the increase in the use of tools designed to achieve it, there is evidence from the environment sector, for example, to suggest that there is frequently a tendency towards minimising the possible influence of these tools. It appears that formal processes aimed at policy integration can become in practice little more than opportunities for representatives of different services to recite fixed positions”.

To achieve general policy coherence, the *budgetary process* can be an important tool for promoting EPI in a given organisational structure. It affects all sectors, provides a cyclical opportunity for revision, and operationalises the government’s priorities in a very concrete and often quantitative ways (Peters, 1998). In addition, the budget can be restructured to integrate horizontal dimensions, such as environmental concerns (OECD, 1996; UK Cabinet Office, 2000). This can be done through various means such as including performance objectives and providing incentives, rewards and sanctions for better environmental performance. The budgetary factor also highlights the need for an appropriate allocation of resources and capacity in order for policy-makers to carry out EPI effectively (see Weale and Williams, 1993).

*Training and awareness* programmes in sector organisations is often part of proposed strategies for EPI. For example, SEPA (2004a) found that many smaller sector authorities do not have the expertise or skills to consider environmental objectives more systematically in their work.

### Procedural factors

Among procedural factors one can distinguish two types; a sequence of measures for implementing a system for EPI in a sector government department or authority and routine procedures to be applied continuously as tools for decision support. The first type of procedure is commonly proposed to consist of the development of a sector strategy for environmental integration (see European Commission 1998, OECD 2001, Lafferty 2002, Jacob and Volkery forthcoming). The ‘checklist’ developed for vertical EPI, i.e. within a sector, by Lafferty is an illustrative example of the ‘sector strategy approach’ and the components it is usually taken to entail (see Table 3). The first step is to

**Table 3. Mechanisms for achieving vertical EPI**

<b>Mechanisms for achieving the vertical dimension of environmental policy integration (VEPI): Integration within the purview of ministerial sectors</b>
<ul style="list-style-type: none"> <li>• <b>Report</b> – an initial mapping and specification of sectoral activity which identifies major environmental/ecological impacts associated with key actors and processes including the governmental unit itself</li> <li>• <b>Forum</b> – establishment of a system of dialogue and consultation with designated principle actors and citizens</li> <li>• <b>Strategy</b> – formulation of a sectoral strategy for change, with basic principles, goals, targets and timetables</li> <li>• <b>Action plan</b> – formulation of a sectoral action plan, matching prioritised goals and target-related policies with designated responsible actors</li> <li>• <b>Green budget</b> – integration of the action plan into the sectoral budget and allocations</li> <li>• <b>Monitoring programme</b> – development of a strategy-based system for monitoring impacts, implementation processes, and target results, including specified cycles for monitoring reports and revisions for the sectoral strategy and action plan</li> </ul>

Source: Lafferty (2002:17, Box 2)

conduct a sector assessment of environmental impact. Before starting the formulation of a strategy, a consultation process should be initiated. The strategy which outlines priorities and principles should then be translated into a concrete action plan with measurable targets and timetables. It is often suggested that the monitoring of targets should be conducted with the help of a set of indicators of the environment-sector linkages. Note that this type of procedure is closely related to organisational factors for EPI, since the establishment of formal responsibilities and accountabilities may follow as well as sector capacity-building for environmental issues.

These mechanisms signify an approach to EPI based on a rationalist view of the decision-making process. Lafferty argues that the two most ‘critical variables’ for vertical EPI to be successful are “in-depth and goal-related consultations among government and the strategic actors of the sector in question, and the stipulation of measurable targets and implementation timetables” (p. 27). However, as we have seen examples of in the EU Cardiff process, all these mechanisms can be implemented without significant commitment or change in attitude. The challenge is to translate the mechanisms into meaningful, useful and effective tools on the ground and avoid the perception that they are an extra task for an already administratively burdened organisation.

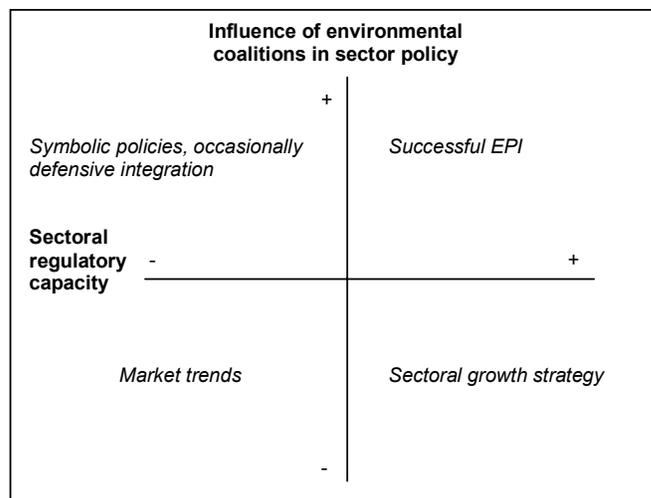
A procedural factor of a more continuous nature is often identified in the literature as an *ex ante impact assessment* procedure. Strategic environmental assessment (SEA) is suggested as a promising and practical tool for EPI by Collier (1994), Eggenberger and Partidario (2000) and European Eco Forum (2003). However, as mentioned earlier, it could be more challenging to apply at policy level than at planning level due to more uncertain and complex activities to predict impacts from. The EU institutions have recently committed to *ex ante* policy-level impact assessment, whereby economic, social and environmental impacts of policy proposals will be assessed (European Commission, 2002). Similar initiatives have been taken in several member states (Jacob and Volker, forthcoming). Regarding the effectiveness of impact assessment, simply establishing a procedure may not be sufficient. Rather, it is the interest, perceived usefulness and capacity for undertaking environmental assessment that determine its effectiveness in pursuing EPI. These problems of achieving effective environmental impact assessment, or policy appraisal, in UK sector policy-making have been documented by Russel and Jordan (2004).

Procedures also refer to the *rules of decision-making* for a policy system. Rules can refer to the right to set formal agendas, the right to develop policy proposals, and the timing of participation by environmental departments or agencies. In an examination of EPI in Germany, Müller (2002) found that administrative rules prevent early integration. A formal set of rules for interdepartmental cooperation specifies that the Ministry of Environment can only initiate and negotiate under its own leadership those items that are within its jurisdiction. If the Ministry of Environment wants to cooperate on a policy issue within another ministry’s jurisdiction it has to wait until the competent ministry invites them for a ministerial meeting.

Finally, several authors raise the issue of *interaction with non-governmental actors* to achieve EPI, either through formal *consultation and participation processes* or more informal contacts and working relationships. Interaction with external actors is of course also a normative and organisational issue. The rationale for increased consultation and participation is twofold; it can make the EPI process more democratic and it can also make the process more efficient, by providing more knowledge and information and increasing the chances for broad acceptance of the policy outputs. The OECD (2002) states that partnerships between government and business are expected to play a critical role, as well as greater inclusion of the general public. Likely difficulties to be faced, however, are lengthy consultation processes and finding appropriate arbitration techniques. Collier (1994) concludes that an ‘open government’ and equal access for environmental lobby groups to the policy-makers as for industrial and other lobby groups are conducive factors for EPI. Problems with unequal access to the decision-making process and mobilisation of members of the public have been discussed by Lenschow (1997, 2002b,d). However, democratic aspects of systematic participation of external actors such as equal representation and balance of interests have not been extensively addressed.

As an example of a more comprehensive framework, Hey (2002) proposes an analytical framework that combines the ‘interaction’ factor with the ‘capacity’ of the policy-making organisation to influence EPI within the sector (i.e. not restricted to the policy output). The “actor-centred institutionalism” perspective assumes that “institutions (as a set of rules and principles) influence both the preferences of actors and the outcome of the political process without fully determining them” (p. 128). Hey finds that two institutional characteristics seem to be essential for successful EPI; “a certain regulatory capacity of public authorities and at least a balance of power and resources between environmental and sector stakeholders and authorities in the sector decision-making process” (p. 128). The former depends on the resources (finances, legal competencies, legitimisation, target group support and information) to achieve change in the sector. The latter depends on the capacity to mobilize and form broad coalitions, the access of those coalitions to the policy-making system of the sector and its responsiveness. According to Hey, it is problematic when just one of these two conditions is met, and they are often in conflict with each other: “open and responsive political institutions often lack regulatory capacity and vice versa” (p. 128) (see Figure 2).

**Figure 2. Hey's theoretical framework to analyse EPI**



Source: Hey (2002)

Hey further explains that these two characteristics may occur at different stages in the policy process. For example, in the institutional system of European transport taxation policy, environmental coalitions can be very influential in the agenda-setting phase but not in the decision-making phase, where more short-sighted and vested interests dominate. The agenda-setting and decision-making phases are decoupled; the former is supranational, strategic and frequently responsive to environmental concerns, while the latter is sector and conservative. Thus, environmental cost internalisation remains a symbolic policy (Hey, 2002).

### Comparing different approaches

The brief overview of different types of factors of influence on and means to achieve EPI suggests that they facilitate EPI in different ways, for example by enabling a new policy paradigm to evolve, facilitating more consensual decision-making by redefining policy-making roles, or informing decision-makers on important environmental aspects to consider. However, neither the categorisation of factors nor the identification of them is complete. A fourth category that is of potential interest depending on the focus of the EPI study is *sector characteristics*. This category could include ‘external factors’, that cannot be directly controlled or influenced by the policy-maker. Examples include the sector activities’ ‘proximity’ to environmental events and processes, the existing

competence and legal basis for intervening in sector activities, and the technological potential for genuine ‘win-win’ solutions (see Hertin and Berkhout, 2001).

As stated previously, a higher degree of EPI could be feasible if a set of measures or factors from the three broad categories are combined. Indeed, this is the general recommendation emerging from the literature in this field. From a practical perspective, however, it would be useful to know which means would be best for a certain purpose. Underdal (1980) and Hertin and Berkhout (2001) have both made preliminary attempts at evaluating the comparative effectiveness of different means.

According to Underdal, the assessment of various means against his three criteria for policy integration consists of ‘guesswork’ (see Table 4). As was described above, he identifies two overall approaches; a direct approach where guidelines specifying how the integration process should be undertaken are developed and correctly applied, and an indirect approach where the objective is to increase the interest or capacity for integration. The indirect approach can be implemented by means aiming at intellectual change, for example research, training and socialisation among decision-makers. The other strategy consists of various institutional measures.

**Table 4. Hypothesized effectiveness of different strategies**

	DIRECT	INDIRECT				
		<i>Intellectual</i>	<i>Institutional Domain (upwards)</i>	<i>Procedures</i>	<i>Resources</i>	<i>Coordinating agency</i>
Scope	+	++	+/++	++	0/+	++
Aggregation	++	0	+++	0	+/++	++
Consistency	+/++	0/+	+/++	+	+	++

Key: +++=strong positive effect, ++=moderate positive effect, +=weak positive effect, 0=no positive effect, possibly counterproductive

Source: Underdal (1980:168)

According to the assessment (see Table 4), institutional restructuring, involving shifting responsibilities upwards and creating a coordinating agency, would be most effective. The risk with all indirect approaches, however, is that the actor is often dissociated from the policy effects of his own actions further. The aggregation criterion seems to be the most difficult to meet. One could argue that aggregation is the essence of the policy integration concept, however. Underdal’s assessment seems to suggest that aggregation will be most successful when the decision-makers have an overview of policy concerns, through being positioned at a higher level in the hierarchy or having a specific coordination responsibility, and when clear responsibilities are set, as opposed to just adding resources or applying procedures. As a general observation Underdal finds that the direct and indirect approaches are in fact not independent; “without a policy concept [emanating from a direct approach] the indirect strategies can hardly be used systematically; to work deliberately towards a certain goal one has to know the goal itself. On the other hand, indirect measures, such as investment in research, can be a way of developing policy concepts and integration strategies” (p. 168).

Hertin and Berkhout (2001) identify four main means for EPI: integrated departments, horizontal cooperation, political leadership and sector integration strategies. They suggest that these EPI measures and others can be expected to lead to four types of changes in policy systems:

- *Institutional agenda-setting* – EPI can raise awareness about unintended environmental effects and provide political support for environmental initiatives within the sector. All four EPI strategies can be expected to lead to this outcome (see also Table 5).
- *Building expertise and decision-making capacity in sectoral departments* – If policy sectors are to address environmental issues in an integrated way they need appropriate expertise and financial resources. This outcome is uncertain in integrated departments, depending on the intra-departmental priority given to environmental issues. Likewise, a political leadership strategy may be ineffective since it focuses on commitment rather than capacity. Horizontal cooperation provides capacity and resources from an external basis. Sector strategies, however, may stimulate an endogenous development of capacity.
- *Well-functioning communication between environmental and non-environmental sectors* – The aim is to articulate environmental concerns in the interpretive framework of a policy sector, i.e.

speaking to the specific audience within its own discourse. Improved communication is sought by all EPI strategies except for the sector integration strategies, where potential win-win opportunities are supposed to be identified internally mainly.

- *Policy learning* – EPI can lead to social learning in the wider sense of changing world views, norms and values. World views and norms are based on assumptions about the framing of a problem, causal relationships, the desirability of certain outcomes, etc. A learning process can both make environmental issues an integral policy aim and encourage policy-makers to see environmental issues as opportunities rather than threats. Sector strategies promote policy learning in the most explicit way.

**Table 5. Expected outcomes of EPI strategies**

	Agenda setting	Capacity building	Horizontal communication	Policy learning
Integrated departments	X		X	(X)
Horizontal cooperation	X		X	
Political leadership	X		X	
Sector integration strategies	X	X		X

*Source:* Hertin and Berkhout (2001:9, Figure 2)

The main point of Hertin and Berkhout's (2001) argument seems to be that EPI is most successful if it is initiated at the home front, through sector-specific EPI strategies. They emphasise the need for an endogenous, bottom-up process where environmental objectives are internalised from the beginning rather than EPI as an effect of external changes, such as mergers of departments or new political declarations.

Finally, Lenschow and Zito (1998) take the comparative analysis of factors further and examine their internal relationships. Which type of factor is most important and how are they dependent of each other? They identify 'policy frames' as the overriding factor influencing the success or failure of EPI. Policy frames can be compared to the factor 'policy paradigm and tradition' identified above. According to Rein and Schön (1993:146), "framing is a way of selecting, organizing, interpreting, and making sense of a complex reality to provide guideposts for knowing, analysing, persuading, and acting". Based on this definition, Lenschow and Zito (1998) identify three different policy frames that have influenced the EU's work on the environmental-economic policy linkage during the last decades: conditional environmental policy, classic environmental policy and sustainability. For the purpose of this paper, it is more interesting to study how they work with the frame concept rather than the frames themselves.

Lenschow and Zito (1998:419) go on to assume that "institutions, subsuming organizational structures, procedural rules, and normative principles, form the context in which policy frames emerge, become rooted and may be replaced". Institutions thus shape the points of reference and political opportunities of policy actors. The impact of policy frames on the policy outcome depends on how well they are rooted in the institutional structures, or the "thickness" of their institutionalisation. A number of factors influence the degree of institutionalisation (see Table 6). For the organisational structure to be thick, environmental regulatory actors should have differentiated standing, responsibility and resources from the general policy arena (which arguably contradicts to an extent the idea of more cooperation or 'internalisation' of environmental issues). Second, institutionalisation is stronger if there is internal cohesion, in the form of clearly defined patterns of interaction that supports the achievement of a stable output. Regarding procedural rules, institutionalisation of a policy frame is more effective when the rules of decision-making are clearly defined, embedded and automatic. Lastly, normative principles are more supportive of policy frames when there is "coherence – the level to which normative elements relate or contract each other" and "embedded in the process – the degree to which these elements are reflected in the rules of the game, and level of acceptance by the relevant policy actors" (Polsby 1968, in Lenschow and Zito 1998:420).

**Table 6. Institutionalisation of policy frames**

Institutional dimensions for the policy frames	Operational characteristics
Organisational structure	- differentiation - internal cohesion
Procedural structure	- definition - embeddedness - automatic rules
Normative structure	- coherence - embeddedness - acceptance

Source: Lenschow and Zito (1998:421, table 2)

In Lenschow and Zito's (1998) analysis the policy frame is thus the factor at the 'meta' level that affects the other EPI factors. It is somewhat unclear how policy frames and normative principles relate to each other, since they appear to refer roughly to the same phenomena (values and understandings). However, the brief description seems to suggest that normative principles are a more detailed specification of policy frames. For example, 'polluter pays' and the 'precautionary principle' are identified as normative principles in the 'sustainability' policy frame.

## Summary

In this section the broad range of measures and strategies for, as well as underlying factors influencing EPI has been illustrated. To summarise it can be argued that there are two general approaches towards the achievement of EPI: first, the toolbox approach, which involves identifying concrete measures that can be implemented in the short to medium-term, and second, the longer-term policy reform approach, which involves trying to change fundamental structures in policy-making. It was noted that the relative effectiveness of measures is likely to depend on context and most authors suggest a comprehensive approach comprising a mix of measures. The main factors were sorted, with modest analytical stringency, into three categories:

- Normative factors
  - High-level political commitment
  - Societal backing
  - Definition of a policy framework for EPI or sustainable development
  - Fundamental change in policy paradigm and tradition
  - Time perspective
  - Use of knowledge and science
- Organisational factors
  - Changes in governmental architecture to overcome sector compartmentalisation, e.g. integrated departments, new institutions, new mandates
  - Accountability mechanisms
  - Coordination and communication mechanisms, e.g. environmental correspondents, networks among bureaucrats
  - Restructuring of the government budgetary process
  - Training and awareness programmes
  - Interaction with external actors
- Procedural factors
  - Implementation of an EPI system: sector report, consultation forum, sector strategy, action plan, monitoring
  - Change of routine procedures: impact assessment of policy proposals, consultation and participation, rules of decision-making

## Criteria for assessing EPI

The aim of the previous section was to identify potentially important analytical variables for studying EPI. They will facilitate the analysis of a particular EPI process in terms of its nature, its ability to achieve change and what factors it is dependent on. However, analytical variables will not enable us to make a judgement whether an EPI process (leading to a specific output or not) has been successful or not, if it has been weak or strong, or if it is likely to contribute to better environmental or sustainability outcomes. When discussing definitions of the EPI concept (see the fourth section) it was argued that a simple, rational and process-oriented definition should be accompanied by a clear set of procedural and/or substantive criteria in order to make the study results more valuable from a normative point of view. In this section different types of criteria will first be discussed in relation to the EPI concept. Then some examples of criteria from the literature will be briefly reviewed.

A crucial issue to keep in mind when discussing evaluative criteria for EPI is whether we are interested in evaluating *specific EPI mechanisms* put in place, such as sector strategies, impact assessments and green budgeting procedures, or *normal sector policy-making*, as influenced by specific EPI mechanisms or not. Unfortunately, more work has been done on the former type of criteria.

### Types of criteria

The term ‘criterion’ is rather vague in this context and there is a need to examine what different types of criteria can be used. The first distinction can be made between criteria for evaluating the policy process and criteria for evaluating the policy output. As mentioned earlier, however, it is sometimes difficult to make the classification of process and output. The first type can be referred to as *procedural criteria*, prescribing how something should be done, and the latter type can be referred to as *substantive criteria*, prescribing the properties an output should have. Table 7 illustrates how these types can be subdivided into a number of more precise issues. The issues in this column follow from top to bottom a logical approach. First, how should the process be conducted? Then, appropriate outputs of the process, not restricted to the specific policy output itself, can be specified. Narrowing the focus to the policy output, what properties should it have? Finally, criteria can be developed for the environmental effect expected.

Table 7. A typology of criteria for EPI

Type	Issue	Level of sector specificity	Example criteria
<b>Sector policy process</b>  <i>Procedural criteria</i>	How to conduct the process	Generic decision-making	Transparency of the process
		General environmental/ecologically sustainable/sustainable	Performance of environmental assessment
	What the process should result in	Generic decision-making	Development of a sector strategy
		Sector-specific environmental/ecologically sustainable/sustainable	Development/use of an energy-environment macroeconomic model (energy sector EPI)
<b>Sector policy output</b>  <i>Substantive criteria</i>	Properties of the output	Generic decision-making	Consistency among the policy objectives
		General environmental/ecologically sustainable/sustainable	Long time horizon
		Sector-specific environmental/ecologically sustainable/sustainable	Adoption of CO2 reduction target (energy sector EPI)
	Environmental effects to be achieved	Sector-specific environmental/ecologically sustainable/sustainable	CO2 emissions reduction of 8 per cent (energy sector EPI)

A further subdivision can be made to distinguish whether the criteria refer to *generic* policy-making principles, such as transparent decision-making processes and consistent policy outputs, or *sector-specific* environmental considerations, which allow for a more concrete assessment. It could also be argued that there is a mid-level type of criteria, namely principles associated with environmental, ecological sustainability or sustainable development policy in general. As argued in the section on key conceptual choices for EPI studies, the scope in relation to environment and sustainable development need to be decided before making the EPI concept operational, since they can involve different kinds of criteria.

Table 7 illustrates how different choices in relation to appropriate criteria to evaluate EPI can be made. They can have different character, field of interest and level of precision, and be adapted to the purpose of the study. Ideally, the criteria should also involve different degrees of fulfilment (ranging from weak to strong), in order to provide a more detailed view of EPI.

### Some examples of procedural criteria

Five of the seven examples of criteria reviewed here relate at least partly to EPI as a process. They are very different, however. Underdal (1980) chooses to incorporate a set of criteria into the very definition of EPI (see previous sections), although they reflect a belief in rationality as a general decision-making objective rather than a normative stance in relation to some substantive issue such as environmental protection. The three criteria – *comprehensiveness* of inputs, *aggregation* to a common measure in processing, and *consistency* of the output – seem to cover the most essential aspects of policy integration despite being so few. While comprehensiveness and aggregation clearly refer to the EPI process, consistency is actually an output criterion, although of a generic character. With regards to the usefulness of these criteria, it can be argued that they are principles which require significant concretisation in order to be made operational. However, a few broad and largely qualitative criteria can also make the assessment more flexible and maintain a focus on the most significant issues.

Compared with Underdal, the European Environment Agency's (EEA) are much more concrete and of a checklist-type. In the Second Assessment of Europe's Environment by the EEA, EPI is approached from a practical and organisational point of view (European Environment Agency, 1999). It is argued that in addition to identifying and conceptualising a discrete environmental problem it is necessary to look at entire sectors to get the full view of how environmental pressure is exerted. This is in line with the argument that it is more effective to tackle the sources of pollution rather than 'end-of-pipe' measures. Therefore, brief sector assessments are made. To support the sector assessments a small set of criteria is applied (see Table 8).

**Table 8. EEA's criteria for environmental integration**

<b>Some criteria for assessing the integration of environmental actions into sectoral policies</b>	
1.	Is there qualitative identification of all environmental costs/benefits?
2.	Is there quantification of environmental costs/benefits?
3.	Are all external costs internalised into market prices (part of polluter pays principle)?
4.	Are economic instruments designed to achieve behaviour change rather than just revenue raising?
5.	Are environmentally damaging subsidies being withdrawn?
6.	Is there environmental impact assessment of projects before implementation?
7.	Is there strategic environmental assessment of policies, plans and programmes at different spatial levels?
8.	Is environmental procurement a cornerstone of purchasing strategy?
9.	Are there environmental management measures within the sector and monitoring of their implementation?
10.	Have eco-efficiency targets and indicators been developed and used to monitor progress?

*Source:* EEA (1999:284)

These criteria are mostly of a procedural character and relate to the issue how an integration process should be conducted, but also address policy outputs (e.g. criteria 3-5). They seem to be intended for assessing sector policy as a whole rather than new specific policy initiatives. Furthermore, it is obvious that they build on a view that procedural factors are the most important for achieving EPI since nearly all criteria involve various tools to be applied, for example cost/benefit analysis,

environmental procurement practices and eco-efficiency indicators. If concrete procedural criteria are needed, however, this list can serve as a reference point.

A similar procedural view on EPI is taken by Liberatore (1997:119), who argues that “integration assumes a form of reciprocity”, i.e. similar weight and importance. If one policy area is much weaker than the others the result will be dilution. In order to determine if integration or dilution has taken place, Liberatore suggests several indicators (see Table 9). It is questionable here which is the worst situation in terms of environmental concern, dilution (third column) or when there is no relation at all between environmental and sector policy (fourth column).

**Table 9. Liberatore's indicators for integration**

Integration indicator	Integration between X and Y	Dilution of X in Y	No relation between X and Y
EIA	Frequent, in-depth, ex-ante	Occasional, superficial, ex-post-facto	No EIA
Consultations	Frequent, 'co-decision'	Occasional, symbolic	No consultation
Compatibility of legislation	Systematically assessed	Occasionally assessed	Not assessed
Performance evaluation	Systematically includes environmental aspects	Occasionally includes environmental aspects	Does not include environmental aspects
Funding	Substantial	Marginal	No funding

*Source:* Liberatore (1997:120)

The integration indicators themselves are relatively traditional and do not really address the effectiveness of the various procedures. Furthermore, they also appear to have an ‘add-on’ character in relation to EPI since they do not reflect fundamental changes of objectives for sector policy-making. The most interesting aspect about this set of criteria is instead that clear distinctions in relation to integration vs. dilution (vs. no relation) are made. In this way the results are interpreted rather than merely described.

Two recent evaluations of EPI within the EU, and specifically of the Cardiff process, provide more examples of criteria for EPI. The first evaluation, performed by the Institute for European Environmental Policy (IEEP) (Fergusson *et al.*, 2001), analyses the roles of various institutions and resources available before presenting an assessment of the content of the sector strategies developed by 2001. The criteria for the strategy content analysis are presented in Table 10. In the report, the different sector strategies are discussed in relation to these criteria and classified as ‘not addressed’, ‘limited attention to this aspect’, ‘some effort to address this aspect, but incomplete’ and ‘relatively full treatment of this aspect’. The other evaluation, performed by Kraemer (2001), is very similar and examines almost the same set of variables. Here the assessment is made by judgements such as ‘good’, ‘satisfactory’, ‘sufficient’ and ‘flawed’.

**Table 10. IEEP's criteria for assessing Cardiff strategies**

Criteria for Strategy Analysis	
<b>Strategy Content</b>	<b>Procedural Characteristics</b>
Scientific/research basis for formulating problem	Roles and responsibilities for ensuring implementation
Problem formulation	Monitoring and review arrangements
Risk assessment and option appraisal	Indicators – extent and nature
Aims/objectives/guiding principles	Reporting mechanisms/requirements
Targets	Future milestones
Measures/actions – including beyond existing commitments	
Recognition of the extra-Community/global dimension	
Reference to other relevant EU/international policy agendas	
Resource implications	
Timetables	

*Source:* Fergusson *et al.* (2001:15)

These criteria are procedural in character, referring both to the process itself and the results (the strategy document). At first sight they may appear less relevant since they have been identified for the study of specific documents. However, several of them could also be applied when evaluating a larger process as a whole. For example, how the problem formulation is made in the core group of policy-makers is probably a significant factor influencing the EPI output. Likewise, the recognition of potential global environmental dimensions is something that an EPI process should involve. However, the assessment process will probably be more complex when more sources than a single document are involved.

### Some examples of substantive criteria

There are relatively many sets of criteria for assessing whether policy processes are conducive to integration. Often they are derived from generic principles for rational decision-making, such as the importance of adopting objectives or targets for new tasks and activities. Substantive criteria seem to be more challenging, however. They require greater knowledge with regards to the environmental system and how it interacts with sector activities. It may also be seen as more controversial and normative. No substantive criteria for specific policy outputs were found in the literature reviewed, but two examples of more general principles for sustainable development decision-making as well as one initial attempt at identifying both key mechanisms for EPI and results of EPI.

The principles proposed by OECD (2001b:11-12) are actually “cross-cutting elements to guide policies towards sustainable development”. The nine elements are: long-term planning horizons; pricing; delivery of public goods; cost-effectiveness; environmental effectiveness; policy integration; precaution; international cooperation; and transparency and accountability. It could be argued that all these elements should be addressed and incorporated by a sector policy output. However, the element of policy integration becomes somewhat redundant when that is what the elements should indicate achievement of.

A similar suggestion is made by Fudge and Rowe’s (2000) in their assessment of sustainability in Sweden. They make use of a framework of five principles for sustainable management. The framework was developed by the European Expert Group on the Urban Environment in 1996. The five principles are (p. 38):

- *Environmental limits* – limits and thresholds should be identified and the precautionary principle adopted.
- *Demand management* – certain demands are reduced or redirected and there is a concerted effort towards optimum trade-off points between opposing demands. The pursuit of sustainability is reconciled with day-to-day service delivery objectives and pressures and the expectations of local people.
- *Environmental efficiency* – maximum benefit is obtained for each unit of resources used and wastes produced.
- *Welfare efficiency* – the greatest human benefit is derived from each unit of resource used, through multiple use and increased economic and social diversity.
- *Equity* – inequitable distribution of wealth leads to unsustainable behaviour and makes change more problematic, both now and in the future.

Like the OECD elements, these are explicitly normative principles that are likely to cause at least some degree of disagreement. Furthermore, the question is whether they can be made operational. The overarching issue, however, is whether these principles and the elements identified by the OECD are at all relevant for the study of EPI. This depends on the scope chosen; environment or sustainable development. A narrower environmental scope would make at least the principles of welfare efficiency, equity, demand management, and international cooperation less relevant.

The European Environment Agency (2004) has initiated more intensive work on EPI recently and has begun to develop a framework for evaluating its success in European policy. The draft framework addresses both procedural issues and expected results of successful EPI. However, the latter substantive criteria are currently of a very general character and will need further operationalisation

(see Table 11). Overall, though, this effort is probably the most comprehensive so far, in terms of including several dimensions of measures for EPI.

**Table 11. EEA's new evaluation criteria**

Type of response	Examples of key responses that could be used as evaluation criteria [most promising highlighted in bold]
Mechanisms to support environmental policy integration	
1 High level political commitments	<ul style="list-style-type: none"> <li>• Constitutional commitment</li> <li>• <b>Sustainable Development Strategies and/or integration strategies</b></li> <li>• Public statements</li> </ul>
2 Governance: organisational changes to break down walls	<ul style="list-style-type: none"> <li>• Clearly defined roles and responsibilities</li> <li>• Core executive responsible for SD and environmental integration</li> <li>• <b>Linkage to multi-annual planning, budgetary and auditing processes</b></li> <li>• Internal communication structures and feedback mechanisms</li> <li>• Political and administrative inter-departmental committees/structures</li> </ul>
3 Resources and capacity building	<ul style="list-style-type: none"> <li>• <b>Integration/SD staff and resources</b></li> <li>• Training and awareness raising, including inter-departmental exchange programmes</li> </ul>
4 Tools to improve decision-making	<ul style="list-style-type: none"> <li>• <b>Ex-ante assessment of policies (impact assessment, SIA, strategic environmental assessment, regulatory impact assessment, etc)</b></li> <li>• Public participation/consultation processes</li> </ul>
5 Policy instruments to implement EPI	<ul style="list-style-type: none"> <li>• <b>Funding</b></li> <li>• Financial instruments</li> <li>• Voluntary agreements</li> <li>• Legislation</li> <li>• Spatial planning</li> <li>• Trade measures</li> <li>• Research</li> </ul>
6 Monitoring, reporting and information	<ul style="list-style-type: none"> <li>• <b>Monitoring against indicators</b></li> <li>• Regular review and evaluation systems</li> <li>• Information on future implications of integration</li> </ul>
Results of environmental integration	
7 Greening of sector policies	<ul style="list-style-type: none"> <li>• <b>Minimising conflicts between sector and environmental objectives</b></li> <li>• Maximising synergies</li> <li>• Application of the polluter pays, precaution, prevention principles</li> </ul>
8 Changes in drivers, pressures, states and impacts	<ul style="list-style-type: none"> <li>• Improved eco-efficiency</li> <li>• Distance from targets</li> </ul>

*Source:* European Environment Agency (2004:5-6)

## Summary

To summarise, there are criteria for evaluating EPI to draw on. Especially procedural criteria for evaluating environmental integration in sector policy-making process have been developed. Substantive criteria are likely to pose more challenges and involve more controversy. The relevance of broad principles for sustainable development in a specific EPI study is questionable. Furthermore, none of the reviewed sets of criteria involved much of a scale indicating the degree of EPI, except for the evaluations of the EU Cardiff process. Such scales, preferably with precisely defined levels, would be useful in EPI studies. Another weakness in the existing sets of criteria is the lack of clarity over whether 'normal' sector policy-making is evaluated for EPI, or specific EPI measures themselves.

## Conclusions and recommendations

This literature review began with a claim that further conceptual clarification of environmental policy integration (EPI) is necessary in order to undertake useful empirical research on the nature and effectiveness of various strategies and means. Concluding the review, it seems that this claim is well-founded. Different interpretations of EPI lead to different definitions of study objects, analytical variables and assessment criteria. Ideally, these differences should be clearly highlighted so that general lessons about EPI can be learned. Below the three questions forming the basis of the literature review will be revisited and the main arguments summarised. The results are then used as a basis for making some proposals for further research on EPI.

### What is meant by EPI?

Reviewing the historical background of EPI suggests that the concept can be widely interpreted with consequently rather different strategies, measures and criteria being proposed to achieve integration. The variation in perspectives on EPI may be due to the vague definitions of policy and integration. It was seen that the most critical conceptual issue is how different parts, in this case environmental and other policy concerns, are weighted in the integration process. This issue was addressed by nearly all authors reviewed. Aggregation according to a common measure of utility is one of Underdal's (1980) three criteria for policy integration. The inherent trade-offs associated with operationalising ambiguous principles such as sustainable development and ecologically sustainable development are discussed by Collier (1994), SEPA (1999) and Lenschow (2002a). It is argued that at the macro level net benefits and win-win scenarios may be realised, but at sector level real policy choices need to be made and there will be distributional implications, hence some kind of explicit or implicit weighting needs to be made. The experience of SEPA (2000) indicated that sometimes these trade-offs are left to the administrative level rather than being dealt with at political levels. This raises the issue of the democratic legitimacy of EPI processes, also addressed by Lafferty (2002) and Lundqvist (2004).

The normative aspects of the EPI concept have their roots in the normative rationale for integration; environmental objectives have for long been systematically devalued in sector policy-making and should be given higher priority since environmental functions are prerequisites for many economic activities. However, Lundqvist (2004) makes the useful distinction between normative and organisational integration. The rationale for organisational integration, or rational EPI as referred to in this paper, is that it is more efficient to consider inevitable (environmental) implications of a policy decision as a premise to that decision. Early consideration of environmental objectives and addressing environmental problems close to the (sector) source are central tenets of the ecological modernisation paradigm. The objectives of this type of EPI are not primarily to promote environmental values amongst others but to avoid policy contradictions and realise potential win-win solutions (Collier, 1994).

Other issues addressed by the authors include the need to critically evaluate the usefulness of EPI. Integration comes at a cost, such as increased information processing and development of new capacities, and Underdal (1980) therefore suggests an optimal level should be found. Peters (1998) raises the issue of policy coordination as a matter of degree, as opposed to an absolute state. Hertin and Berkhout (2001) address the issue what comes after EPI, by conceptualising integration as a temporary means. Finally, an implicit difference among the authors is whether EPI is discussed mainly as a policy process or a policy output. It was seen that this has implications for the definition of EPI as well as the formulation of assessment criteria, which will be further discussed below.

### How is EPI achieved?

An initial observation in relation to the proposals for concrete strategies and measures to achieve EPI, as well as what analytical variables to examine in the study of EPI, is that the framing of the EPI problem is important. If the challenge of EPI is couched mainly in organisational terms, strategies and

measures tend to address how communication and coordination can be improved, institutional responsibilities reallocated and power imbalances altered. If it is framed mainly as a challenge to rational decision-making, on the other hand, measures such as devising strategies, developing monitoring mechanisms and applying impact assessment procedures tend to be suggested.

Three broad categories of factors influencing the achievement of EPI were identified, based on Lenschow and Zito (1998); normative, organisational and procedural. These are closely linked and approaches combining these three categories of factors are most commonly suggested. Regarding normative factors, the need for continuous, high-level political commitment and leadership is strongly emphasised. This serves both as a democratic basis and a signal for priority-setting further down in the government hierarchy. An overall policy framework, such as a national strategy for sustainable development, is recognised as a necessary formalisation and concretisation of a political commitment to EPI. A less tangible factor is the dominating policy paradigm, which can be said to determine basic assumptions, the approach to policy-making and professional cultures. Finally, the role of time perspectives and use of knowledge and science in policy-making were identified as important normative factors.

Most authors discussing organisational factors influencing EPI recognise sector compartmentalisation as a major problem. It has contributed to the development of a turf mentality and competition in realising policy objectives. Proposals for improving the organisational environment for EPI often include changes to the organisational arrangements, or government architecture. Among these proposals, the assignment of environmental mandates, responsibilities and accountability seems to be more flexible and easier to implement than creating new or modifying existing organisations, although it may take time before new responsibilities are truly internalised. Other strategies that have been suggested include focusing on coordination and communicating processes, utilising the budgetary process to influence organisational priorities and capacities, and extending interaction with non-governmental actors in the sector.

Two types of procedural factors were identified; a sequence of measures for implementing a system for EPI in a sector government department or authority and routine procedures to be applied continuously as tools for decision support. The Cardiff process, with its sector reviews, strategies and monitoring mechanisms, is an example of the former. The second type refers to various forms of impact assessment and formal consultation and participation processes, as well as the general rules for decision-making in the government system.

### **What criteria can be used to evaluate the degree of EPI?**

As argued by Lenschow (2002c), it is becoming increasingly important to examine whether ‘substance’ follows from procedures for EPI. The main focus in the literature so far has been on how to achieve EPI, rather than more explorative inquiries into what it actually is (for different actors) or evaluative studies examining if measures have actually produced results. As for evaluative criteria for EPI, it was argued that a general weakness is the lack of clarity if specific EPI measures and programmes are to be evaluated or if ‘normal’ sector policy-making is what we are interested in. Another important finding in the previous section was that there are different types of criteria, which are suitable for different study objects and analytical foci. Either one can choose to study EPI as a process and assess the performance of the process and the quality of the process outputs, or one can focus on the substantive content of the policy output and assess its properties and the environmental outcome. It was also demonstrated that criteria can be of a generic character or more specific to environmental concerns. The main point of the typology of criteria suggested is that it is important to be aware of and communicate clearly exactly what aspect of EPI is being evaluated, since it is a broad concept.

Among the examples of sets of criteria reviewed, most of them refer to the process of EPI, although it is not always easy to distinguish between process and output. For example, have environmental impact assessments been made? Are environmental costs and benefits quantified? Have stakeholders

been consulted? They thus pertain to relatively concrete ‘add-on’ measures rather than more fundamental structures influencing EPI. Some of the criteria, such as those used to evaluate the EU Cardiff process (Fergusson *et al.*, 2001 and Kraemer, 2001), have also been specifically developed for mechanisms designed for EPI rather than the general sector policy-making context.

However, more fundamental aspects may be difficult to address through criteria. For example, Underdal’s (1980) principles of comprehensiveness and aggregation are probably difficult to make operational and measurable. This problem also seems to be relevant for substantive criteria for the policy output. In general, this type of criteria seems to be less common than procedural criteria, possibly due to inadequate knowledge and political controversy. Two sets of broad principles for sustainable development policies were briefly reviewed and it was argued that these will require significant operationalisation. However, at least the existing sets of criteria can be used as a basis for developing more purposive and specific criteria. An important challenge when developing criteria will be to determine levels of fulfilment, reflecting the degree of EPI in a given context.

### Recommendations for EPI research

This paper has presented a broad review of relevant literature. To achieve useful and policy-relevant analyses of EPI initiatives, one should ideally explore more in-depth different theories and empirical work, as well as review literature that the scope of this paper did not permit the inclusion of. However, some preliminary and general recommendations can be made.

- A key conceptual choice that needs to be made when defining EPI is whether to understand it as a **normative or rational policy objective**. It has traditionally been interpreted both as a normative concept for increasing the relative importance of the environment and a concept for improving the rationality of policy-making. The choice between them has implications for what is perceived as the rationale, desired objectives, and appropriate strategies for EPI, as well as the study of EPI.
- Another key conceptual choice is whether to focus the analysis on EPI as a **policy process or a policy output**, or both. This choice has implications for what criteria to employ when assessing EPI. Another important issue is how the process and the outputs are linked, i.e. is the process effective in producing policy outputs characterised by environmental integration?
- Based on these two conceptual choices, an **EPI definition** can be formulated. It is recommended that a simple and flexible definition is used, which is complemented by a **set of more detailed criteria** given that the study has an evaluative interest, in order to recognise a potentially wide range of EPI measures and focus the analysis on their actual usefulness rather than their existence. In this paper it was argued that a rational understanding of EPI as a process, complemented by procedural and substantive criteria, facilitates an easy entry point to studying EPI. For a working definition, Hey’s (2002:127) definition was suggested; “early coordination between sector and environmental objectives, in order to find synergies between the two or to set priorities for the environment, where necessary”.
- **Other conceptual issues** concerning the scope of EPI research that should be addressed before initiating empirical analyses are:
  - if environmental protection, environmental sustainability or sustainable development is the ultimate objective of EPI;
  - if the scope of the study involves environmental integration in government policy-making (policy integration) or in the activities of all sector actors (sector integration);
  - how policy integration, if this scope is chosen, can be more closely specified, i.e. whether integration refers to (i) common or consistent policy objectives, (ii) policy instruments that aim to achieve different policy objectives, and/or (iii) combined implementation of policy instruments that were devised for different policy objectives;
  - how to distinguish between intra-sectoral EPI and inter-sectoral EPI; and
  - how to consider the influence of different levels in the policy system (international, national, regional, local) on the achievement of EPI.

- **Three basic categories of analytical variables** for EPI were identified: normative, organisational and procedural. Although they can be difficult to differentiate, they seem to provide an initial framework for thinking about factors influencing EPI. In developing a framework it would also be useful to consider how these types of variables are related to each other. For example, is one type of variable a prerequisite for another? What different timescales do they operate on?
- A **predetermined set of criteria** to assess sector policy-making – both specifically developed EPI strategies and measures and ‘normal’ sector policy-making – would really add value to the current body of knowledge by asking the question ‘have we succeeded’ rather than ‘how to achieve EPI’. It was argued above that currently there is a lack of exploratory and evaluative studies of EPI, while studies of EPI measures are relatively abundant. Ideally, the criteria should facilitate the measurement of different degrees of EPI. The criteria can address different aspects of EPI, such as the process of applying EPI measures or the actual environmental impact of environmentally integrated sector policies, and they can either be of a generic character or a specific environmental character. Collecting more knowledge about sector-environment linkages is needed to proceed with substantive criteria, though.
- Another important contribution to EPI research would be to use an **exploratory approach** and study how different actors understand EPI at a normative rather than instrumental level. There is currently a lack of such theoretically-driven studies focusing on how EPI is actively constructed and how it takes on different meanings in different contexts and time periods, as opposed to the more instrumental EPI studies reviewed in this paper. Choosing the exploratory path implies that a definition of EPI and the key conceptual choices outlined above become less important, although it is arguably important to have some kind of reference point. Theoretical concepts that have shown promise in aiding a study of EPI at a deeper and less tangible paradigmatic level are *policy frames* and *policy learning* (see Nilsson and Persson 2003; Hertin and Berkhout 2001; Lenschow 1999; Lenschow and Zito 1998). The concept of frames and framing allow us to study multiple understandings of EPI and how they are actively constructed. Policy learning is a useful concept for understanding how these frames interact over time and how new knowledge can modify frames. The main challenge of adopting this kind of exploratory approach, however, is to ensure validity in the measurement of the relative prominence or influence of frames, since the variables of interest are bound to be more abstract and intangible.

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