RISKGOV EUROPEAN PROJECT

COMPARATIVE ANALYSIS OF RISK GOVERNANCE FOR RADIOLOGICAL AND CHEMICAL DISCHARGES OF INDUSTRIAL INSTALLATIONS

FINAL REPORT

T. SCHNEIDER, C. SCHIEBER, L. VAILLANT (CEPN)

G. HERIARD DUBREUIL, S. GADBOIS (MUTADIS)

A. OUDIZ, F. BOURGOIGNON, A. MILOCHEVITCH (IRSN)

J. PATERSON (UoW)

G. BROWNLESS, T. BANDLE (HSL)

S.-O. HANSSON, M. HAYENHJELM (KTH)

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RISKGOV PARTNERS

CEPN
Centre d'étude sur l'Evaluation de la
Protection dans le domaine Nucléaire
18, route du Panorama
BP 48
92263 Fontenay-aux-Roses Cedex
France

MUTADIS
3, rue de la Fidélité
75010 Paris
France

UoW
University of Westminster
School of Law
4 Little Titchfield Street
London W1W 7UW
United Kingdom

IRSN
Institut de Radioprotection et de Sûreté
Nucléaire
BP 17
92262 Fontenay-aux-Roses Cedex
France

HSL
Health and Safety Laboratory
Broad Lane
SHEFFIELD S3 7HQ
United Kingdom

KTH
Royal Institute of Technology
Philosophy Unit
Department of Infrastructure and
Planning
Fiskartorpsv 15A
100 44 Stockholm
Sweden

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SUMMARY

The objective of the RISKGOV Project is to analyse and identify quality criteria for the governance of industrial activities giving rise to risks to people and the environment from radioactive and chemical discharges during normal operations. For this purpose, RISKGOV aims at: 1) analysing and comparing the elements contributing to the quality of governance systems associated with environmental discharges from nuclear and chemical installations; 2) providing a series of criteria to assess the quality of the governance of risk activities.

In total, 8 case studies were conducted, covering radioactive and chemical releases related to local and international contexts and referring to innovative risk governance processes in France, Sweden and the United Kingdom:
- The role of local liaison committees with regard to the management of discharges of installations:
    - France: Local liaison committee of the Gravelines Nuclear Power Plant
    - Sweden: Local liaison committees of the Barsebäck Nuclear Power Plant and the Rohm and Hass Chemical installation
- The dialogue process during the preparation of reauthorisation of radioactive discharges:
    - France: COGEMA-La Hague facility
    - United-Kingdom: Devonport Royal Dockyard
- The dialogue process in a regional context:
    - France: Management of air quality around the industrial site of Etang de Berre
- The dialogue process in an international context:
    - Implementation of the OSPAR Convention for chemical and radioactive releases
    - The abandonment of the Brent Spar offshore platform

The analysis was performed by a multidisciplinary research team and based notably on interviews with key stakeholders directly involved in these innovative risk governance processes. The following dimensions were addressed: a) The guiding principles of the decision-making process; b) The role of expertise; c) The stakeholders involvement process; d) The factors integrated into the decision-framing and decision-taking processes; e) The implementation of decisions and their review.

RISKGOV seeks to identify from its case studies examples of practices that can be emulated elsewhere as well as pitfalls and tension points from which positive lessons can equally be learned. The case studies show there are many ways of reflecting the themes and elements identified as important in a risk governance process. The approach that is therefore proposed is that these themes and elements should be considered by the various stakeholders with a view to determining their relative importance in a given context and how they might best be achieved or implemented as appropriate.

The first major step in this analysis was to achieve a grouping of the various themes and elements. The result was that they could be grouped under five headings as follows:
(a) Initiative

(b) Process Elements
   Inclusiveness of participation; Inclusiveness of issues; Collective and Mutual learning

(c) Governance Culture
   Clarity on the nature of the process; Quality of the partnership; Multi-level governance; Resilience of the process
(d) Outcomes
   Trust and confidence; Acceptance/Acceptability of decisions; Sustainable development
 (e) Evaluation and Re-initiation

Broadly speaking, following the *initiation* of the process, the *Process Elements* are seen as vital components that must be dealt with from the outset. Insofar as these are successfully implemented, they are seen to produce and support a *Governance Culture* that is well adapted to deal with complex problems, respond to emergent issues and meet societal expectations regarding the governance of risk issues. The fact that the overall process is concerned with learning and adaptation to emergent issues means that evaluation is a vital component, which provides feedback about its success and/or the need for improvement. This allows for the re-initiation of the process, and its' understanding as iterative, adaptive and evolving rather than as linear and deterministic. Insofar as a risk governance process operates in this way, the framework suggests that there is a higher probability of achieving or at least moving closer to the objectives of trust and confidence, acceptance and acceptability of decisions and sustainable development.

In order to test and hopefully improve the elaborated scheme in the context of new risk governance processes, a self-evaluation tool has been developed, which is included in this report. Finally, it has to be notice that this empirical analysis of the risk governance process can also contribute to the debate about governance at the theoretical level.

RESUME

Le projet de recherche RISKGOV - Analyse comparative de la gouvernance du risque associé aux rejets radioactifs et chimiques des installations industrielles - a pour objectif d'analyser et d'identifier les critères de qualité pour la gouvernance des activités industrielles donnant lieu à un risque pour la population ou pour l'environnement suite aux rejets d'effluents radioactifs ou chimiques lors du fonctionnement normal des installations. Ce projet consiste en : 1) une analyse comparative des éléments contribuant à la qualité de certains processus de gouvernance associés aux rejets environnementaux d'installations chimiques et nucléaires, 2) l'élaboration d'un ensemble de critères pour évaluer la qualité de la gouvernance des activités à risque.

Au total, 8 études de cas ont été réalisées, couvrant des situations de rejets radioactifs et chimiques dans des contexte locaux et internationaux, et présentant des processus innovants de gouvernance des activités à risque en France, Suèe et au Royaume-Uni:
- Le rôle des commissions locales d'information dans le cadre de la gestion des rejets des installations :
  - France : les actions d'information et de surveillance des rejets dans l'environnement menées par la Commission Locale d'Information de la centrale nucléaire de Gravelines.
  - Suède : le processus de communication et de dialogue avec les populations locales autour de la centrale nucléaire de Barsebäck.
  - Suède : le forum de dialogue engagé par l'exploitant d'une usine de produits chimiques (Rohm & Haas).
- La concertation lors de la révision des autorisations de rejets :
  - France : le processus de concertation mis en œuvre autour de l'installation de COGEMA - La Hague (Groupe Radioécologie Nord Cotentin, révision des autorisations de rejets, rôle de la Commission Spéciale Permanente d'Information auprès de l'établissement COGEMA-La Hague).
  - Royaume-Uni : le processus de consultation du public engagé par "Environment Agency" pour élaborer de nouvelles autorisations de rejets radioactifs du chantier naval royal de Devonport.
- La concertation au niveau régional
  - France : la gestion de la qualité de l'air autour de l'Etang de Berre (via notamment l'action du Secrétariat Permanent pour les Problèmes de Pollution Industrielle et la mise en place du Plan Régional de Qualité de l'Air).
- La concertation dans un contexte international
  - La mise en œuvre de la convention OSPAR pour les rejets radioactifs et chimiques.
  - Le processus de concertation avec les parties prenantes engagé par Shell pour l'abandon de la plateforme pétrolière de Brent Spar.

Les analyses ont été réalisées par des équipes pluridisciplinaires sur la base de recherches documentaires et d'interview des différents acteurs directement impliqués dans les processus innovants de gouvernance des activité à risque. En vue d'identifier les principaux critères contribuant à la qualité de la gouvernance des activités à risque,

les dimensions suivantes ont en particulier été abordées : a) le déroulement du processus de prise de décision ; b) le rôle de l'expertise ; c) le processus d'implication des parties prenantes ; d) les facteurs intégrés dans l'élaboration et la prise de décisions ; e) la mise en œuvre des décisions et leur suivi.

RISKGOV cherche à identifier dans les études de cas des exemples de pratiques qui pourraient être appliquées ailleurs, ainsi que des points de tension à partir desquelles des leçons positives peuvent également être tirées. Les études de cas ont montré qu'il y avait de nombreuses façon de faire ressortir les éléments importants dans un processus de gouvernance des activités à risque. L'approche proposée est que ces éléments soient considérés par les différentes parties prenantes en vue de déterminer leur importance relative dans un contexte donné et comment ils peuvent le mieux être mis en oeuvre.

La première étape de l'analyse a consisté à regrouper les éléments contribuant à la qualité de la gouvernance des activités à risque, suivant les 5 thèmes suivants:
a) La mise en place du processus
b) Les éléments du processus
   La capacité à ouvrir la participation aux parties prenantes, la capacité à s'adapter à de nouveaux problèmes, un apprentissage collectif et mutuel
c) La culture de gouvernance
   La transparence sur la nature du processus, la qualité du partenariat, une gouvernance à plusieurs niveaux, la résistance du processus
d) Les résultas
   La confiance sociale, l'acceptation/acceptabilité des décisions, le développement durable
e) L'évaluation et la re-initiation des processus

De façon générale, suite à *la mise en place du processus*, les *éléments du processus* sont constituent des composants fondamentaux à considérer. Dans la mesure où ces éléments sont appliqués avec succès, ils sont considérés comme contribuant à l'émergence d'une *culture de gouvernance*, bien adaptée pour appréhender des problèmes complexes ou émergents et répondre aux demandes sociales concernant la gouvernance des activités à risque. Quand le processus global est associé à un apprentissage et à une adaptation à de nouveaux problèmes, l'évaluation est un composant essentiel pour obtenir du retour d'expérience sur le succès du processus ou ses besoins d'amélioration. Ceci permet alors une re-initiation du processus qui développe alors un caractère itératif, adaptatif et évolutif plutôt que linéaire et déterministe. Un processus de gouvernance présentant ces caractéristiques peut contribuer dans certains cas à améliorer la confiance sociale, à renforcer l'acceptabilité et la durabilité des décisions ainsi qu'à favoriser un développement durable.

Dans le souci de donner un caractère plus opérationnel aux résultats du projet, il est apparu utile de regrouper les différentes caractéristiques identifiées dans une grille d'évaluation des processus de gouvernance destinée aux acteurs de ces processus et intégrée dans ce rapport. Enfin, il est à noter que cette analyse empirique des processus de gouvernance peut aussi contribuer au débat sur la gouvernance au niveau théorique.

1.   INTRODUCTION

The overall objective of the RISKGOV project is to improve the governance of radiological risks related to public exposures to environmental radioactive releases from nuclear installations. To this end, over the past three years, the project has closely examined innovative approaches to decision-making on risk in the context of the governance of hazardous activities, both nuclear and non-nuclear, in different parts of Europe.

In contrast to purely technical approaches to risk, risk governance takes account of all of the political, social, legal, ethical, scientific and technical components that allow the operation of hazardous activities. In this regard, the previous TRUSTNET Concerted Action suggested that a risk governance system should meet a number of objectives, including:

- to provide a level of protection which is widely recognised as acceptable;
- to promote accountability and autonomy of the actors concerned in or by the risk generating activity;
- to allow sustainable development and give access to worthwhile scientific and technological developments that may help to solve current and future social concerns;
- to contribute to the improvement of social trust and confidence among stakeholders, public authorities, and experts.

Building on these results, the RISKGOV project:

- analysed the quality of governance systems for radiological risks associated with environmental releases from nuclear installations; and
- compared them with the quality of governance systems for chemical risks associated with environmental releases from non-nuclear installations; with a view to
- providing guidance and operational recommendations for the improvement of existing radiological risk governance systems.

The RISKGOV work was carried out by six teams from three European countries (France, Sweden and the UK) and combined public authorities and research organisations in radiological risk and chemical risk, as well as consultants and

universities involved in risk governance. The group included experts in the following fields: radiation protection, risk assessment, economics, risk governance, sociology, political science, regulation and risk policy.

For each case, the interdisciplinary research:

- considered the regulatory system at the local, national and European levels, as appropriate;
- examined the role of public authorities, experts, and other stakeholders;
- evaluated the innovative aspects of the risk governance decision making processes, specifically those related to the involvement of other stakeholders.

After a brief summary of the case studies analysed (section 2), this report presents the results of the common analysis and the proposed framework for the evaluation of risk governance processes (section 3).

Three complementary annex reports are also available which present the results of the different steps of the project:

R-289-Annex 1: Summary of case studies
R-289-Annex 2: Full case studies
R-289-Annex 3: Common interdisciplinary analysis

2.   THE CASE STUDIES AND THE METHODOLOGY

2.1.   Case studies

With participants to the RISKGOV team being drawn from research institutions in France, Sweden and the UK, case studies were identified in those three countries with examples in each case in the nuclear and chemical industries. The presence of innovative risk governance processes was obviously the key guiding factor in the selection of case studies, but the willingness of the key actors involved in each case to provide assistance to the project (mainly in the form of interviews and access to relevant documentation) was a material consideration. By and large, it proved possible to follow up the cases initially identified, although in some cases current political and legal sensitivities meant that alternatives had to be found. Brief descriptions of the case studies conducted are listed below.[1]

(i) The role of local liaison committees with regard to the management of discharges of installations

Monitoring of radioactive discharges by Local Information Commission around the Gravelines Nuclear Power Plant in France

The site of Gravelines was selected for the building of a NPP in the early 1970s. Because of the prevailing anti-nuclear climate this decision was hotly contested. The mayor of Gravelines accordingly initiated the creation of a Local Commission for Information (CLI) in order to meet the needs expressed by the citizens for clear, accurate and complete information on the site.

Risk communication and dialogue procedures with the local population around the Barsebäck Nuclear Power Plant in Sweden

The Local Board for Safety at Barsebäck was established in 1981 as a direct result of the referendum on Swedish nuclear power in 1980. The role of this local liaison committee (LLC) is to guarantee transparency of the power plant to the local population and general public with regard to operational safety, radiation protection, and

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[1]   A summary of these case studies is provided in Appendix 2. The full studies are available in Annex 1 and Annex 2 of this report (available on the RISKGOV website: www.riskgov.com)

emergency planning in case of an accident. The representatives are proposed by the two local municipalities, but decided by the Government. At most meetings, representatives from the industry are usually present, sometimes representatives from the authorities, and sometimes experts in the field at the invitation of the LLC.

The dialogue forum established by Rohm and Haas in Sweden

In 1998, Rohm and Haas Nordiska in Landskrona formed a Community Advisory Committee (CAC). Its members are selected so as to represent the community at large as well as local interests. The CAC is not active in the sense of making decisions or carrying out specific actions, but it plays an altogether different role in providing the general public with a unique insight into these decisions and dealings of the company.

(ii) The dialogue process during the preparation of reauthorisation of radioactive discharges

Dialogue process around the discharges from the COGEMA-La Hague facility in France

The publication in 1995 and 1997 of results suggesting an excessive incidence of leukaemia among persons less than 25 years old within the Beaumont-Hague canton caused strong reactions among the local population. To respond to the many questions raised by the conclusions of this work, the Ministries of Health and of Environment set up a Scientific Committee in February 1997. Based on the findings of this committee, an expert group (GRNC) was created in July 1997 which included experts from authorities, operators, local and national associations. In the meantime, for regulatory reasons, COGEMA asked for a revision of its licensing authorisations. For the first time, a pluralistic expert group was asked by the safety authority to give advice on the documents provided by COGEMA.

The reauthorisation of radioactive discharges from the Devonport Royal Dockyard in the UK

Nuclear-powered hunter-killer submarines have been refitted at the Devonport Dockyard since the 1970s. In 1987, a private company, Devonport Management Limited (DML), took over the refitting from the Royal Navy. Shortly afterwards the

British Government decided that refitting of nuclear weapon-carrying nuclear-powered submarines should be moved from Rosyth and also be carried out at Devonport. This required a change in the radioactive waste streams from the dockyard, and accordingly a reauthorisation from the Environment Agency. The reauthorisation had the potential to be high profile and controversial, and the Environment Agency decided to launch a programme of engagement and consultation with the public even though this was not required by law.

(iii)   The dialogue process in a regional context

Management of air quality around the industrial site of Etang de Berre in France

The area of the Etang de Berre presents a very high density of industries, which leads to the emission of many air pollutants. A Permanent Board for Industrial Pollution Prevention (SPPPI) was created in 1971 to temper local opposition to the industrial development. This quickly led to the creation of a specific organisation devoted to air quality measurements, AIRFOBEP. Many working groups devoted to one specific topic and composed of various types of actors have also been created within the SPPPI. Other types of dialogue structures have also been created, such as the Shell Local Commission of Information and Exchanges (CLIE).

(iv)   The dialogue process in an international context

Implementation of the OSPAR Convention for chemical and radioactive releases

The OSPAR Convention entered into force on 25 March 1998. It has been signed and ratified by all of the Contracting Parties to the Oslo and Paris Conventions, together with Luxembourg and Switzerland. Article 2.1(a) stipulates that these Parties have the legal obligation to 'take all possible steps to prevent and eliminate pollution and to take the necessary measures to protect the maritime area'. NGOs, governmental organisations and other States that are not Contracting Parties are admitted as observers but they have no right to vote. The risk governance process is based on the search for trade-offs through dialogue.

The Stakeholder Dialogue organised by Shell regarding the disposal of the Brent Spar offshore installation

In the mid 1990s, Shell decided to abandon its Brent Spar storage installation in the UK sector of the North Sea. To this end it sought and received approval from the UK government for its planned deep-water disposal in the North Atlantic. This decision was greeted with unprecedented criticism from environmental NGOs, the public at large and other governments. Shell, against the government's wishes and to the annoyance of many scientists, abandoned the plan. The company announced a new strategy involving an international engineering competition, an open communications approach and dialogue with stakeholders designed and organised by an independent and mutually-acceptable third party.

2.2. Methodology

For each case study, interviews were conducted with key stakeholders and relevant documentation was gathered and studied. The studies were then written up on the basis of a common interdisciplinary analysis framework to allow a common interdisciplinary assessment to be carried out in due course. Both the preparation for the interviews and the development of the common interdisciplinary analysis framework drew heavily on the experience of the TRUSTNET Concerted Action.

While the RISKGOV project set out with a comparative analysis in mind regarding the evolution of innovative risk governance arrangements in the nuclear and chemical industries, it quickly became apparent that among the case studies identified there were few if any distinguishing features that would mark out a differential approach in one or the other technological domain. Rather it was apparent that very similar issues arose in each, which in turn produced similar or equivalent responses. As a consequence, the value of the study lies not in identifying particular issues and features for one or the other industry but rather in the fact that strong similarities in each domain increases confidence that certain issues and themes are potentially common to a wide range of risk governance situations. Equally, the fact that similar practical responses to emergent problems could be perceived in each domain, albeit different in different contexts, meant that we could again be confident that certain features may be common to emergent risk governance processes, albeit expressed in different ways accordingly to contextual specificities.

These observations accordingly have implications both for the focus of the analysis that has been carried out and for the output of the project. As regards the focus of the analysis, this has been on the identification of common themes and features, while the output has steered away from recommendations, which could appear to be too prescriptive and thus inappropriate given findings on context specificity, and towards practical guidance, which places the emphasis on a recognition of and sensitivity to the sorts of common themes and features emerging from the analysis.

It is an important feature of the practical guidance offered that it is addressed to *all* of the parties who may be involved in present or future such risk governance processes, both those public or commercial actors who may have a lead role in their establishment *and* the other stakeholders who may be asked to participate. The aim is especially to allow the participants to *assess the quality* of the processes, whether at the design stage or as they go forward and evolve. It should also be stressed that we have sought to avoid simply listing criteria, as we are concerned to avoid a 'checklist' or 'tick box' approach to risk governance processes. Rather, on the basis of the analysis conducted, we have proposed a particular framework of risk governance in which certain elements are seen to reinforce others which in due course leads to a robust process that is well focused on desirable objectives such as trust, confidence and sustainable development. This framework is presented within the body of this report, while in the Appendix 3 we have produced a first draft of an evaluation tool, which represents an attempt to make the practical guidance concrete. It is worth noting that the third phase of the TRUSTNET project (TRUSTNET-IN-ACTION), which has just begun, will represent an early opportunity to test and develop this tool, and by extension the model itself.

3.   COMMON ANALYSIS AND ELABORATION OF A FRAMEWORK FOR THE EVALUATION OF RISK GOVERNANCE PROCESSES

Confronted with the common themes and elements emerging from the common interdisciplinary analysis[2], the challenge facing the team was to attempt to move beyond the simple list and to offer a coherent picture of their inter-relationships. A first analysis of the existing theoretical context was performed and is presented in Appendix 1. Working with the common themes and elements and referring back to case studies a framework for the evaluation of innovative risk governance processes was gradually developed. At each stage of its development the framework was tested against the concrete experience of the case studies and refined where necessary to reflect empirical findings as opposed to theoretical presuppositions. To be clear, the framework produced exists at a certain level of abstraction and is not intended as a blueprint for the implementation of a risk governance process. As the case studies show there are many ways of reflecting the themes and elements identified as important. The approach that is therefore proposed is that these themes and elements should be considered by the various stakeholders with a view to determining their relative importance in a given context and how they might best be achieved or implemented as appropriate.

The first major step in the development of the framework was to achieve a grouping of the various themes and elements. The result was that they could be grouped under five headings as follows:

> *(a)   Initiation*
>
> *(b)   Process Elements*
> Inclusiveness of participation
> Inclusiveness of issues
> Collective learning
> Mutual learning
>
> *(c)   Governance Culture*
> Clarity on the nature of the process
> Quality of the partnership
> Multi-level governance
> Resilience of the process

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[2]   The common interdisciplinary analysis is presented in the Annex 3 of this report.

(d)   *Outcomes*
Trust and confidence
Acceptance/Acceptability of decisions
Sustainable development

(e)   *Evaluation and re-initiation*

The next stage was to clarify the way in which these different elements may be related. With a view to clarifying the proposed relationships, the following diagram was developed, and self evaluation tool is provided in Appendix 3.

Figure 1. A framework for the evaluation of risk governance processes

SUSTAINABLE DEVELOPMENT   ACCEPTABLE DECISIONS   TRUST & CONFIDENCE

Reactive
INITIATIVE
Proactive

Governance
Culture

Process
fairness

Clarity about nature of the process

Multi-level governance

Quality of partnership

Resilience

Collective learning

Inclusiveness of participant

Inclusiveness of issues

Mutual learning
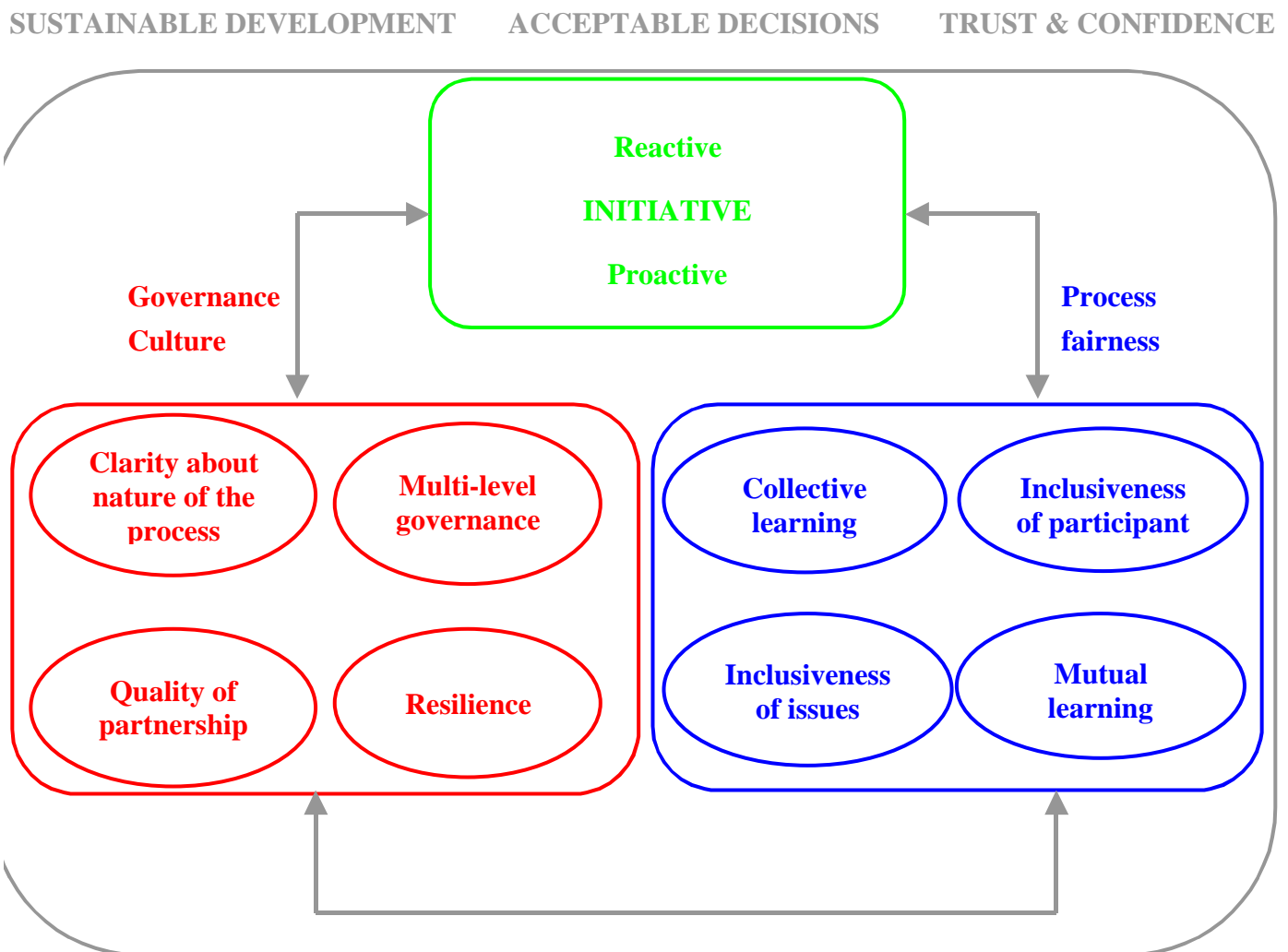
Broadly speaking, following the *initiation* of the process, the *Process Elements* and *Governance Culture* are seen as vital, mutually reinforcing components that will produce and support a process that is well adapted to deal with complex problems, respond to emergent issues and meet societal expectations regarding the governance of risk issues. The fact that the overall process is concerned with learning and adaptation to emergent issues means that evaluation (understood, of course, as inclusive evaluation) is also an important component, which provides feedback about its success and/or the need for improvement. This allows for the re-initiation, as it were, of the process, and its' understanding as iterative, adaptive and evolving rather than as linear and deterministic. In other words, the idea is that stakeholders may use the tool themselves from time to time in order to identify necessary improvements and to support dialogue in this direction. Insofar as a risk governance process operates in this way, the framework suggests that there is a higher probability of achieving or at least moving closer to the objectives of trust and confidence, acceptance and acceptability of decisions and sustainable development.

In the remainder of this section, the aim will be to describe in greater detail the nature of the various elements of the framework and their inter-relationship. In each case, cross-references will be provided to the various case studies, both as an indication of the sources of the ideas developed in the framework and so as to allow readers who wish to examine any given issue further to see how they have been implemented in practice.

3.1. Initiative

The initiation of a risk governance process is very likely to have a significant impact on its operation. Not only does this 'set the tone' for what is to follow, but also very often it can see the embedding of particular distributions of power among the stakeholders. Broadly speaking, the actor taking the initiative is likely, whether by accident or design, to seek to ensure a level of control which may go beyond what is strictly necessary for the smooth running of that process. It is accordingly vitally important for all those involved in such a process to reflect carefully upon its initiation. What is the historical context of the process? What has been the impulse for the process in the first place? Is the process a reaction to an unforeseen event that effectively forces the agenda? Or is there a proactive attempt to approach a potentially controversial issue in a measured and responsible manner? Who has taken the initiative? What is their expressed aim in doing so? Do their subsequent actions match that aim? These are the sorts of questions that arise at the outset of any appraisal of such a process.

The studies conducted in this project amply demonstrate that the origin of such processes will be specific to each case. A wide variety of scenarios is now possible, a fact which reveals the extent to which the traditional top-down model of dealing with risk issues has been transcended and which equally gives a particular resonance to the idea of 'opening up the political' mentioned in Appendix 1 discussing the theoretical context. It is no longer the case that societal responses to risk are uniformly initiated by governmental actors. It is thus by no means unusual to see commercial actors initiating participatory risk governance processes. This is true both in reactive situations, such as Shell's Stakeholder Dialogue process in the Brent Spar case, and in proactive situations, such as the Community Advisory Committee established by Rohm and Haas as part of its responsible care policy, or the Local Liaison Committee in the Etang de Berre region created by industry together with local NGOs. And even where governmental actors do still take the initiative this is now just as likely to be on the basis of their own assessment of a situation, and thus beyond what is required of them by law, as it is to be on the basis of a strict legal obligation. This was the situation, for example, with the Environment Agency in the Devonport case.

Given the very striking fact that commercial actors may now initiate innovative processes to consider important risk issues and may invite other stakeholders to participate, and that even where government actors are in charge they may be operating beyond legal requirements (though still within their powers), serious questions arise about the status and constitution of such processes. It is obviously of vital importance that there is broad agreement from the outset on the aims and objectives of a process as well as on the rules by which it will operate. On the question of objectives, the need to achieve agreement on these makes it less likely that the process is being used for purely public relations purposes or to make the announcement of a pre-determined decision easier. This need also means that potentially fatal problems can be identified at the outset and steps taken to remedy them. Such problems may include a lack of shared values or a lack of adequate resources. As regards the question of agreement on rules for the operation of a given process, it is worth stressing that the framework of risk governance presented here is not concerned with the enunciation of such rules but may serve as a guide for the sorts of issues that any rules should address.

3.2.   Process Elements

3.2.1.   Inclusiveness of participation

Among the most striking features of the innovative risk governance processes studied in the RISKGOV project has been the extent to which they engage actors who would not normally be involved so directly in such issues. This marks a very clear step change from the top-down expert-led model of dealing with complex risk issues in functionally differentiated societies. It has traditionally been perceived to be sufficient for individual citizens to participate in democracy mainly through periodic exercises of the franchise. This choice of central and local government effectively served as legitimation for a vast array of decisions subsequently taken on their behalf not only by the directly elected government, but also by departments and agencies to which power was delegated. And beyond that, those corporate actors who deployed technologies then did so on the basis of the 'licence to operate' that was explicitly or implicitly given them by those exercising direct or delegated power. Insofar as individual citizens may have been otherwise involved, this would have amounted to no more than the right perhaps to be consulted when regulatory or other decisions were being planned, but the degree of influence on the way that problems were framed let alone how they might have been analysed and discussed would more often than not have been severely limited.

As the case studies indicate, however, it would appear that this is no longer seen as a sufficient means of legitimating decisions on technological risk issues. Restricting the decision making process only to those public and corporate bodies traditionally involved has given way to efforts to include all of those who have a stake in the matter at hand. The term 'stakeholder' is frequently used, and although it appears now to have gained wider acceptance it is still apt at times to lead to ambiguity or confusion. Who are the stakeholders in any given situation? What the case studies reveal is that there is no fixed list that will cover all eventualities. One way of seeking to determine who should be involved is to consider who will benefit and who will incur costs as a result of the decision, with both costs and benefits being broadly understood. This, of course, may lead to quite a wide group of potential stakeholders and it is then a question of considering how they should best be involved. Is some form of representation appropriate and possible?

The case studies reveal different responses to this question. In the Rohm and Haas example, where the committee was established by the industry, the operator contacted a

local politician with a wide network of contacts who then proposed potential members on the basis of their living or working in the local community and themselves having a network of contacts. Such an approach appears to have worked well in this case, but it would clearly not be suitable in every context. At the very least it would require a very high degree of transparency to avoid suspicions of bias. Other examples reveal a political representation approach, indicating a sort of hybrid between the traditional model and the inclusive approach to risk governance. Thus, in the Barsebäck case, the membership of the local committee is drawn from among local politicians and reflects the position of the parties in local government. This has clear advantages over the Rohm and Haas approach, but is not without its own drawbacks. The members of the Barsebäck committee are themselves aware, for example, that they are probably not as critical of the operator as would be members drawn from NGOs. By the same token, there is no guarantee (nor indeed any expectation) that political representatives will adequately reflect the concerns of local stakeholders (as opposed to their constituents more generally) with regard to a given risk issue, and at the very least this raises the issue of how precisely the process interacts with those stakeholders. The OSPAR example reveals how this issue can be addressed in that NGOs are given observer status alongside the participating political actors, albeit that here the condition that they be international organisations raises questions as to the extent to which local concerns are adequately reflected. The La Hague case demonstrates the importance, in a situation of crisis, of creating the conditions for pluralistic expertise to operate.

What each of these examples demonstrates, then, is that there must always be a compromise between the scope of membership and the viability of the process. This compromise depends not only on the degree to which the actors gathered may be said to be representative but also on the cultural context. The degree of confidence that the public has in elected persons and of transparency and 'community responsibility' in the local context influences the way in which the participants are involved in the process. A balance must be struck between adequate inclusiveness of participation and a process that is not so unwieldy as to be practically useless. What is important, therefore, is that all those involved in the process remain aware of the need to ensure that that balance has been properly struck and that the question is kept under review. As the Etang de Berre study demonstrates, for example, there is much to be said to taking a gradual approach to inclusiveness where membership is kept under review and stakeholders have joined as the process has developed.

3.2.2.   Inclusiveness of issues

In much the same way as technological risk issues appear to have revealed limits to the model of representative democracy and to have led to the evolution of innovative processes characterised by their inclusiveness of participation, so they appear to have revealed limits to the functionally differentiated model of government and administration which in turn have led to the evolution of processes characterised by an awareness of the need to ensure the inclusiveness of issues. While functional differentiation is undoubtedly an achievement of modern society, allowing the progress and prosperity that characterise advanced industrial democracies, it also has inevitable drawbacks. The very specialisation that allows expertise to develop within given functional domains, and thus allows problems to be efficiently and effectively addressed, also increases the risk that side effects in other domains will neither be foreseen nor be rapidly visible. Broadly speaking, therefore, adhering strictly to the model of functional differentiation works well up to a certain level of complexity, but requires caution beyond that level. Once that level of complexity is reached it seems that problems are not easily pigeonholed within one functional domain but rather transcend the boundaries of one or more domains. It accordingly becomes increasingly difficult for traditional regulatory interventions to characterise such problems adequately, operating as they do within one or other functional domain, and then to address them. Indeed, in such circumstances, the chances of well-intentioned regulatory interventions producing unintended consequences may well increase. We can thus perceive better perhaps one dimension of the so-called crisis of the welfare state mentioned above in the introduction.

In such circumstances, the rationale behind many of the innovative risk governance processes examined in the case studies becomes clearer as does their need to ensure adequate inclusiveness of issues. Because it is only by ensuring such inclusiveness that an adequately complex picture of the problem at hand may be obtained. An important dimension of this dimension of innovative risk governance processes is the fact that the issues under consideration are frequently dynamic rather than static. Thus, the picture of these issues that is built up needs to be kept under constant review and modified as a situation evolves, as new stakeholders emerge, as more knowledge is generated. In other words, inclusiveness of issues implies that such processes must be understood as flexible and adaptive, which in turn has implications for the way that a process is constituted. If a process is given a narrow mandate, it may well prove unable to cope with the scope of a problem as it is eventually understood in the context of dialogue

with a broad range of stakeholders, or with emergent issues. Once again, however, there is a need for compromise. It is clear that a local committee cannot be expected to deal with issues that have a regional, national or even global reach. In such circumstances, a narrow remit would be justified. It would, however, raise the question of the articulation of the local process with other levels of governance, a point we shall return to in due course. In short, then, a balance must be struck between adequate openness to the scope of an issue and the ability of the process to deal with it. Awareness of that balance on the part of all the stakeholders, however, should ensure that it is both appropriately struck—in an unbiased manner—and kept under constant review so that it remains appropriate.

The case studies illustrate what these observations may mean in practice. The Etang de Berre case, for example, demonstrates the tension that can arise between the original mandate and the broader scope of a problem once other stakeholders become involved. Thus, while public authorities focus on pollution caused by industrial discharges to the atmosphere, other stakeholders are keen to know what contribution to the problem is made by atmospheric discharges related to other sources such as the airport and road traffic. By the same token, while AIRFOBEP focuses on pollution peaks, other stakeholders are concerned with the effects of chronic pollution. The Brent Spar case also reveals the sorts of tensions that can arise. Whereas it was clear that the Stakeholder Dialogue process could only deal with the disposal options for the installation in question, some stakeholders believed that these options could not be properly discussed outside the context of the disposal options for the scores of other installations in the North Sea. The Devonport case reveals similar issues insofar as some stakeholders questioned the validity of the dose effect models, a matter the regulator felt it could not examine in the context of a local level process. The La Hague case, however, indicates that, especially in a crisis situation, it may be important to focus on one well-defined issue in order to promote cooperation.

Although these two process elements of inclusiveness of participation and of issues are clearly important to risk governance processes, it is important to stress that by themselves they are not sufficient for the emergence of a governance culture. The case studies indicate (thus supporting the findings of the TRUSTNET projects) that inclusiveness of participation and of issues only fulfil the potential they offer to a more adequate response to risk when they are understood in the context of what they mean for *learning*. In this regard, the RISKGOV studies have allowed a more nuanced discussion and we now distinguish *collective* and *mutual* learning.

3.2.3. Collective learning

As mentioned above, the evolution of modern society in terms of functional differentiation has served to produce both positive and negative effects. On the positive side, the division of tasks and the specialisation this allowed produced the ever-increasing rate of technological innovation and development that has been such a feature of industrial society. On the negative side, however, that same division and specialisation has also served at times to encourage a narrow technocratic view of the world, with any given issue being regarded as belonging properly to one or other functional domain and with any given functional domain being regarded as properly concerned only with certain issues. As regards technological risk, accordingly, this functional differentiation has encouraged a narrow technocratic view that both understands risks and seeks to respond to them on the basis of expert models. There can be no denying that this approach has often been successful and that it remains appropriate and valuable in many circumstances. Increasingly, however, when it comes to the most complex problems confronting modern society, it is becoming clearer that these are most adequately described as multi-dimensional and thus as defying easy pigeonholing within one functional domain. The consequences for the governance of risk are profound. It is not only that there needs to be better integration of different functional domains, both within government and within scientific and technological organisations—although this is undoubtedly necessary and efforts in this direction are certainly observable. It is also that there needs to be better integration of expert domains with other dimensions of society, previously characterised as 'lay' or 'non-expert' and thus previously understood as the passive objects of expert decisions. This is obviously a significant challenge and it is at this point that the limitations of simply focusing on inclusiveness of issues become clearer. Simply ensuring that a fuller range of issues is taken into consideration when the governance of a risk issue is being discussed will not necessarily represent an advance over traditional models if these issues are simply fed into the pre-existing expert model. What would represent a significant advance would be the situation where a process sees all the involved stakeholders developing *together* a characterisation of the issues in question. The advantages to be gained as well as the details of this *collective learning* require some further specification.

Insofar as a risk issue is understood as multi-dimensional rather than in terms only of the functional domain that has traditionally been charged with its regulation, there is immediately the probability that a more adequately complex understanding of that risk will be gained. By the same token, such an understanding is more likely to lead to

decisions that enjoy a higher and broader degree of acceptance. As a consequence, there is also the likelihood that such decisions will be more effective. These are bold claims, but as the case studies demonstrate they are by no means unrealistic ones.

The chances of these positive outcomes occurring are enhanced insofar as such an approach to collective learning is appropriately implemented. The first point to stress is that such an approach does not represent a single phase of a risk governance process, nor is it something that can simply be bolted on to an existing process. Rather collective learning must be understood as an integral feature of a risk governance process that permeates all of its phases on an ongoing basis. At the outset it is crucial, for example, that the problem to be addressed is not simply presented to the stakeholders as a fait accompli. As the foregoing discussion makes clear, the problem as understood by the experts who have traditionally been charged with coping with it may not at all be meaningful to the other stakeholders. It is by no means uncommon to encounter expert understandings of risk problems being related to the technical dimensions of risk assessment, risk management, control of processes, and so on, while other stakeholders are more concerned with social dimensions that are not necessarily well captured by technical characterisations. The ideal accordingly, as the TRUSTNET project suggested, is to aim for a *co-framing* of problems, which can thus be seen to be the vital first stage in an ongoing process of collective learning. A similar approach should also be the aim when it comes to the development of solutions to the co-framed problems. While technical responses are well adapted to technical characterisations of problems, they may well not be adequate when problems have been co-framed and thus include a broader understanding of social dimensions. It is necessary, therefore, to see the development of solutions as the next phase in the process of collective learning. To complete this picture, a collective learning approach should also be adopted to the ongoing monitoring and evaluation of the solutions implemented—a point we shall return to in due course.

In order to get a picture of the operation of this collective learning approach, it is instructive to consider experience from the case studies. In the Brent Spar case, for example, the operator and the regulator admitted that at the outset they had seen this as a purely technical problem, which required an engineering solution. Content that the regulatory process had been followed, the risks assessed and the best practicable environmental option found, they were certain that they could proceed to dump the abandoned installation in deep water without any hesitation. What this undoubtedly sound technical approach failed to appreciate, however, was that other stakeholders did

not construct this as a purely technical problem, but as one with important social dimensions. The Stakeholder Dialogue allowed these dimensions to emerge in the new co-framing of the problem and also to play a role in the development of solutions. The fact that neither the co-framed problem nor the jointly developed solutions represented the expressed wishes of any one stakeholder is an indication of the extent to which this Stakeholder Dialogue was indeed a process of collective learning, with non-technical stakeholders having to come to terms with what was possible and what was not possible from an engineering perspective, while the engineers had to accommodate what society would accept and what it would not, irrespective of what might be technically possible. The La Hague and Gravelines studies are also instructive here insofar as local NGOs contribute to the improvement of collective learning through the production of common knowledge that takes account of the local context.

3.2.4. Mutual learning

Just as the focus upon inclusiveness of issues will only produce significant advances over traditional approaches insofar as it is understood as a vital component of collective learning, so the focus upon inclusiveness of participation will only fulfil the potential it offers to risk governance if it is understood as a vital component of *mutual learning*. By this term we mean the process by which the different stakeholders do not simply discuss issues round the table, or even aim at some form of collective learning, but actually learn about the positions adopted by their counterparts and incorporate this knowledge into the formation and presentation of their own position. There is clearly a link with collective learning, but we separate out this dimension of mutual learning to lay stress on the importance of achieving risk governance procedures that encourage the participants to take seriously the positions adopted by other stakeholders rather than writing them off from the outset or attempting to prevail in a discussion by the dogged repetition of one's start position.

The need for such a process element arises from characteristics inherent both in expert and lay rationalities that can encourage a dismissive attitude to the other. Traditionally, technocracy—or government by experts—was on a collision course with democracy inasmuch as it was believed that decisions based on scientific rationality would be beyond reproach. Accordingly, opening such decisions up to democratic discussion could only, by definition, run the risk of their replacement by irrational decisions or, at the very least, result in delaying the inevitable acceptance of the rational decision. Although few now would advocate that pure technocracy is a good idea, the extent to

which decision making is indeed in the hands of experts in all advanced industrial societies (and indeed in organisations such as the European Union) indicates the influence that this approach still has. Accordingly, it is by no means unusual to see lay criticism of technology or lay concerns about its potential risks being dismissed as simply irrational and scientific arguments essentially being used as 'trump cards'. What this approach fails to recognise, however, is that while science can indeed generate useful knowledge, which may in turn be deployed in the context of technology, it cannot produce absolute answers about how and whether that knowledge should be deployed. On the other hand, some undoubted problems with technology, where risks have emerged in due course to expose the lack of knowledge that science had at the outset, can lead to unduly negative lay perceptions of expertise. Even where this is not expressed in very extreme ways, it can nevertheless lead, for example, to very conservative interpretations of the precautionary principle and to unrealistic expectations with regard to the control of risks.

It is true to say that both of these suspicious and dismissive positions have been relatively easy to detect in recent years in the context of the debates surrounding the most contentious technological and risk issues confronting modern society. Whereas one side has emphasised the rewards that new technology can offer society, the other has focused on the potential risks. While one side has stressed that it is impossible to achieve absolute certainty and that desired rewards cannot be achieved without taking risks, the other has essentially suggested that in the absence of certainty and thus in the presence of risk, the rewards on offer ought not to be pursued. The difficulty is that traditional modes of government have not proved well adapted to resolving this impasse. And it is in this vacuum that new modes of risk governance, such as those examined in the case studies, have evolved. In each of these cases it is possible to identify mutual learning, even if not explicitly identified, as a vital process element. Precisely because pollution caused by nuclear and chemical industries has been the sort of issue that has polarised expert and lay opinion and has proved so intractable to traditional regulation (in the sense at the very least of achieving widespread acceptance), the innovative processes emerging have had to develop means of dealing with this mutual ignorance.

Mutual learning relies mainly on the mutual understanding of different kinds of rationalities. In the context of local committees, this problem seems to be closed, in a sense, to the questions of inclusiveness developed above. For example, in the case of the local commission of Gravelines, the representative of the operator underlined the

importance, according to him, of entering a dialogue with interlocutors who are 'competent' enough to the language of scientific experts.

Once again, the Brent Spar case can serve as a good example here, precisely because it represented a highly conflicted situation. At the outset, the positions adopted by the operator and the regulator, on one hand, and the NGO, on the other, were diametrically opposed. Although the traditional regulatory approach required comprehensive assessment of risks in the disposal plan for the abandoned offshore installation, and specifically called for the identification of the best practicable environmental option, the public perception, led by the NGO, was that dumping such a structure in deep water was entirely at odds with an concern for the environment. Whereas the traditional regulatory approach essentially resolved these issues between experts, the Stakeholder Dialogue process both allowed all interested parties to put their position and required them to take account of those held by others. As they gradually worked towards a common characterisation of the problem and of the possible solutions, the various parties were accordingly not only involved in a process of collective learning but also of mutual learning, where the degree of understanding of the various rationalities in play about the others was significantly increased. The La Hague case is also instructive in this respect. Here there was conflict among the measurements carried by the operator, authorities and NGOs. The formation of the GRNC allowed mutual respect to develop and mutual learning to take place. This in turn allowed the creation of a common database of measurements. It is worth stressing also that this mutual learning is not only of relevance in the context of the particular risk governance process but also has effects beyond it, both in terms of scope and of time. In other words, this particular process element has broader societal benefits than simply contributing to the emergence of a governance culture in the given situation.

3.2.5.   Transversal issue: the integration of expertise

Permeating each of the four process elements discussed above is the question of how precisely the ideal of bringing expert and lay rationalities may be achieved in practice. It is absolutely clear that the 'opening up of the political' or the 'proceduralisation' implied by new modes of risk governance does not at all imply that scientific rationality is sidelined, as it were. Scientific evidence and technical knowledge are vital components of any decision making about risk issues. All that these new modes seek to ensure is that societal concerns about technological processes and the risks they may entail are integrated into such decisions in a way that ensures a more appropriate framing of the decisions and ultimately more broadly accepted decisions. It is certainly

the case, however, that bringing expert and lay rationalities together in this way does present a challenge.[3] The different case studies reveal the different ways in which this challenge can be met.

In the Etang de Berre case, for example, AIRFOBEP, by being pluralistic and chaired by local actors, is perceived to produce reliable information that is widely accepted at the local level. In the Gravelines case, the local commission seeks to ensure that reliable information is produced in which stakeholders may have confidence by gathering data from a wide range of sources. The Environment Agency in the Devonport case sought to ensure that expert information was widely accepted by passing questions that fell outside its own area of expertise to other appropriate bodies in which most stakeholders had confidence. This approach had its limits, however, when some stakeholders challenged internationally accepted dose-effect models. The fortuitous existence of a national level committee looking at this issue allowed this question to be transferred too, although not answered. In such circumstances, there needs to be clarity that uncertainties may remain but that currently accepted practice is being followed and that the issue is under review. There also needs to be consideration of whether and how local level stakeholders are to be included in such higher-level processes. At La Hague, NGOs provide the local community with an alternative source of expertise, which allows the creation of a common database, the validation of data and the identification of discrepancies. Here too the pluralistic expertise approach has allowed experts from a variety of backgrounds, including the operator and NGOs, to work in conjunction with each other, thus leading to results in which other stakeholders may have more confidence, and still allowing different stakeholders to draw their own conclusions.

In each of the examples discussed so far, the approach has been to ensure that expertise is treated in such a way that it is not seen as biased or as something being done behind closed doors. These examples have not gone so far as to increase communication between expert and lay rationalities, but other case studies do reveal such an approach. In the Barsebäck and Gravelines cases, for example, the national authority provides training for local committees, visits to the NPP with the safety inspectors, opportunities for visits to other facilities and the exchange of experience. In other words, there is an

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[3]   It is difficult to avoid this formulation of 'expert' and 'lay'. It should be borne in mind, of course, that in the context of the approach to risk governance discussed here rationalities traditionally characterised as 'lay' are understood as making a vital contribution to the establishment of pluralistic expertise.

attempt to build capacity among the lay stakeholders. In the Brent Spar case, efforts were made to explain engineering issues by developing models and interactive CD-ROMs, which rendered them easier to understand and allowed non-expert stakeholders to be involved in narrowing disposal options on the basis of engineering constraints as well as social acceptability grounds.

As regards the means by which lay concerns and framings of problems are understood and incorporated by experts, it is clear from the case studies that this requires a genuine, properly resourced and ongoing effort on the part of the leadership of operators and regulators. If there are any mixed signals in this regard from an organisation's leaders to other levels, then it is unlikely that there will be successful engagement. All of the case studies reveal the extent to which commercial and regulatory organisations may have to change and sustain that change if they are to become successfully involved in new risk governance processes.

3.2.6.   Conclusion

Insofar, then, as the process elements of inclusiveness and learning discussed above are a feature of a risk governance process, there seems to be good reason to expect that it will represent an advance over traditional modes. These process elements, in particular when they are understood as operating in a relationship of mutual support with the *governance culture* elements outlined above, can ensure an ongoing resilient partnership that is well articulated with other levels of governance. In the following section, we will consider in more detail the features of this governance culture, which the examination of the case studies identifies.

3.3.   Governance Culture

3.3.1.   Clarity on the nature of the process

It is sometimes suggested that the sorts of processes examined in the RISKGOV project are not as innovative as is currently suggested. It is said, for example, that even under the traditional model of regulation, which we may now characterise as technocratic, it was by no means unusual for those tasked with taking decisions to consult with others beforehand. It must be stressed, however, that when the process elements described above are in play then whatever the relationship between decision makers and other stakeholders, it is very likely to be something more than mere consultation. Under the

traditional model, indeed, consultation was not infrequently conducted with a relatively restricted list of key actors without any necessary consideration of whether this list included all of those with a legitimate interest in the decision. Suggestions that all other inputs to the process would have been received and considered do not necessarily take seriously the question of whether those with an interest would actually have known in advance that a decision was planned or would have had the realistic opportunity to prepare and present their point of view. The innovative risk governance processes considered in the case studies accordingly represent a step change from the traditional model insofar as they actively seek to ensure inclusiveness of participation and of issues. That is not to say, however, that each of the processes examined sees the involvement of other stakeholders in exactly the same way. As mentioned previously, there is no 'one-size-fits-all' blueprint for such processes and different degrees of engagement are possible. What is important, however, is that whatever the degree of engagement this is clear from the outset to all those involved. The framework presented here suggests that insofar as the process elements of inclusiveness and learning are in place, this vital feature of governance culture will be supported: at the very least, these process elements ensure that the expectations of all participants are clarified and taken seriously and that any disappointed expectations become an issue for discussion and resolution within the process.

These points can be clarified by looking at examples from among the case studies. At one end of the spectrum, as it were, are those processes which are little more than opportunities for enhanced communication between an operator or a public actor and other stakeholders (for example, the Rohm and Haas case); at the other are those processes which see other stakeholders becoming quite deeply involved, if not in actually taking decisions, then certainly in framing the decision and in reviewing and narrowing options (for example, the Brent Spar and La Hague cases). It is possible to explain these very different levels of engagement in terms of the different levels of disagreement or conflict in each case. In the Rohm and Haas case there is little or no disagreement between the operator and other stakeholders. It is accordingly possible for the operator to establish a process (in this case, a Community Advisory Committee) which envisages a fairly low level of stakeholder engagement. Instead, the process is one of the means by which the operator implements its policy of Responsible Care and demonstrates its commitment to openness and transparency in its operations. There is little evidence that the Committee engages in severe criticism of the operator or that the process has any significant impact on decisions taken by the operator. However, in the absence of controversy, there is no reason to suggest that this approach is inappropriate.

In the Brent Spar case, by contrast, the degree of engagement was far greater, with stakeholders not only discussing options for disposal of the abandoned installation, but also developing a tool for ranking options. In the context of a high level of initial conflict, this degree of engagement appears necessary in order to ensure that a resolution of the problems could be arrived at. In the La Hague case, the participation of a wider set of experts in the GRNS, notably from NGOs, led the authorities to establish a pluralistic expert group to review the proposal for the modification of the licensing authorisation.

Where there is any ambiguity about the nature of the process and about the role of the stakeholders in it, it is possible that the process itself may suffer, if not in the short term, then possibly in due course. This is because ambiguity or a lack of clarity in this regard is likely to lead to a loss of confidence or reduced acceptance of decisions if it is only exposed in the context of a more urgent issue.[4] In other words, if all concerned know clearly what they can and cannot expect from the process, then they are unlikely to be disappointed when a particular challenge for the process arises. If on the other hand stakeholders have expectations of the process beyond what is actually possible then when they seek to make use of the process in the context of an emergent issue it is likely that those expectations will be disappointed and confidence in the process itself suffer. Examination of the case studies revealed some questions of this nature. In both the Gravelines and the Devonport cases, for example, issues arose which were of national importance and which clearly could not be realistically addressed at the local level. Whether the limitations of those local processes were clear to all stakeholders and accepted by them was an open question. Similarly, in the Barsebäck case, the very role of the local committee appeared to be called into question by the fact, firstly, that local level vigilance was already a key concern of national authorities and, secondly, that the operator already communicated extensively about its activities.

It is possible (though not, of course, necessarily the case) that the greatest clarity may be achieved where the constitution of a process is legally established. It is also true that such a situation may assist in ensuring the long-term continuity of a process. The Gravelines case, for example, reveals the problems that can arise in the absence of such a legal status. This very clarity, however, may produce a rigidity that is not conducive to the flexibility that may be required by a risk governance process in responding to an

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[4]   This criticism of ambiguity in a process should not, of course, be read as restricting openness to new issues and new stakeholders.

emergent issue. As the Devonport case demonstrates, for example, while the duty of the regulator as regards those other bodies it needed to consult was laid down by law, the requirements of the particular situation persuaded the regulator that it needed to establish a broader process of stakeholder engagement. On the contrary, in the OSPAR case, it was impossible for the authorities in France to set up a local body without an appropriate mandate.

It is clear, therefore, that a fine balance needs to be struck between ensuring flexibility with regard to the scope of a process and the degree of engagement and ensuring sufficient clarity and certainty about the nature of that process and the role of the various parties involved.

3.3.2. Quality of the partnership

If there is clarity about the nature of the process and in particular of the role of each of the participants and what they may expect, then there is a much greater chance that a genuine partnership will emerge. This term is used in particular to distinguish new risk governance processes from traditional forms of consultation in which communication is either one-way or at best the response may be rather formal, and in any case it is not possible to describe what is going on as a dialogue. It must be stressed, however, that the use of this term does not imply an equal relationship. This is important in particular when it comes to questions of responsibility (and, by extension, of liability). Whereas some of the most advanced among the new risk governance processes examined here see stakeholders quite deeply involved in decision-framing and in the discussion and narrowing of options, not even those most advanced envisage other stakeholders being directly involved in the taking of decisions. There is no question, then, that responsibility for decisions is shared: these remain firmly with those who have legal duties, whether as regulators or as operators, or who retain direct control over the technological processes in question.

Once again the case studies point to the ways in which a partnership may be established and to those factors that appear to militate against it. The Rohm and Haas case reveals that where there is a lack of motivation on the part of stakeholders involved in a given process then it is unlikely that what will emerge could be described as a partnership. The same case reveals similar effects where one powerful party plays a dominant role with regard to the setting of the agenda and the provision of information. In such circumstances, there can be a danger that the process becomes little more than a public

relations exercise. While the low level of disagreement in this case means that there is no pressure on it to change, the question will be whether it will prove capable of responding meaningfully in the event of a crisis. Whereas a partnership is likely to perform well in such circumstances, it is by no means clear that a process short of that could. We will return to this question of resilience further below.

By contrast, the Gravelines case reveals a quite different picture where even though there is disagreement among some of the participants, there is obviously confidence in the process. The very fact that the Local Liaison Committee allows NGOs and locally elected representatives to raise questions and present their points of views to the operator and the public authorities together with the fact that these questions and points are taken seriously ensures that everyone remains engaged in the process, even in the presence of disagreement. There is a belief that the process is worthwhile and that it can produce change even if incrementally and in the long term. There is no feeling, in other words, on the part of the other stakeholders that the operator and the public authorities are involved in the Committee only as a formality.

Within the framework of local committees involving people with different mandates and representing many different interests, the autonomy given to each actor ask questions and seek for information appears to be an important dimension of the quality of partnership.

Where there is disagreement, however, it is extremely important that the process takes account of the sensitivities of those involved. A strong partnership is likely to make this easier than a process where there is lesser engagement. As the La Hague case shows, there are issues of reputation to be considered when NGO representatives become involved with the operators and regulators they may previously have viewed with suspicion. In this case, it was important for the NGO representative to be able to provide feedback to the members of the organisation on the ongoing process. This allowed them to explain their contribution and provide reassurance that involvement in the process was consistent with the goals of the organisation.

3.3.3.   Multi-level governance

One of the key features of a strong governance culture is an awareness of and an ability to respond to the fact that complex risk issues will raise questions for multiple levels of government. Where the process elements of inclusiveness and learning described above

are present, there is a higher probability, first, that such multi-level issues will become apparent and, then, that there will be a willingness to deal with them appropriately. This then raises the question of how a more flexible and adaptive articulation between the different levels of government may be achieved. The case studies provide some indications in this regard. There are indications, firstly, in terms of institutional arrangements, and, secondly, in terms of flexible responses to emergent issues.

The Etang de Berre case involves two levels of governance, local and regional, which appear to be well articulated. The local committees have been established very much with the need to ensure such an articulation in view. While the local committees ensure a good connection between local stakeholders and individual industries or plants, the regional structure ensures that there is the possibility to achieve a coherent regional approach to the risk issues in question. One of the ways in which this is achieved is through the attendance of the members of the local committees at the regional meetings. They are thus able to set their local concerns in regional context as well as being able to feed local concerns up to that level. The Barsebäck case similarly reveals an institutional approach to this question of the articulation of different governance levels. Here the national level organisation provides support, training, the opportunities for exchange of experience, etc. for the local committees, as well as playing a role in deciding whether an issue is best dealt with locally or nationally. In the case of Gravelines, most of the stakeholders involved in the Local Liaison Committee for the NPP are also involved in the regional structure related to the prevention of industrial pollution, and thus a structure with a larger geographical and substantive scope.

Moving on to the flexible response to the emergence of issues that involve other levels, it is possible to draw inspiration from the Devonport case. Here the questioning of dose-effect models by some stakeholders raised issues that could not properly be considered in the context of a local process. In the event, the establishment of a committee at national level to consider this sort of question allowed the regulator to pass the issue on. In the absence of such a committee, however, this case reveals the need for risk governance processes to be able to pass important emergent questions up to a higher level of government should that be appropriate and for those higher levels of government to respond positively to such requests in order to ensure that the governance culture of these new processes is maintained.

Finally in this regard, it is worth mentioning that the fact that complex risk issues raise questions for multiple levels of governance can effectively lead to competition among

different arenas for the right to deal with particular issues. The OSPAR case, for example, reveals how EU policy in the field of marine pollution is increasingly competing with the OSPAR approach. This should not necessarily be regarded as a problem. To the contrary, it is possible to interpret this development as evidence of the success of OSPAR in putting these issues on the European agenda and thus encouraging the EU to become more closely involved. Given the extent to which the OSPAR approach allows Contracting Parties to avoid implementing decisions, the involvement of a regulator that is able to enforce compliance may be seen as an advance, rather than as regulatory competition that involves a diminution of standards or a 'race to the bottom'. It is also a question whether OSPAR is sufficiently able to involve local level stakeholders.

3.3.4. Resilience of the process

The fact that risk issues have on occasion led to crises of confidence for traditional modes of regulation (and, indeed, have driven the emergence and evolution of new approaches such as those examined in the case studies for this project) means that there is a considerable interest in processes that are resilient and able to maintain confidence for as long as is necessary to reach the desired outcomes. If a process is unable to continue its operations in an unbroken manner, then, whether it is a limited process focusing on a specific time-bound issue or an ongoing process concerned with the monitoring and review of a facility, this will have adverse effects on its ability to produce robust, broadly accepted decisions. Problems arise in this regard because, for example, the 'memory' of the process may be lost, its transparency and readability may be affected, and so on.

The framework of risk governance presented here suggests that insofar as the process elements of inclusiveness and learning are implemented and operating appropriately then this aspect of the governance culture, this resilience of the process, will be supported and strengthened. Once again, experience with the case studies provides insight into what this may mean in practice.

The first point to make is that even where an ongoing process is in place, this may not be adequate or appropriate to deal with an emergent issue. As the Devonport example demonstrates, ongoing liaison between the facility and the local community was important in building trust with regard to the normal operations of the dockyard, but it was not the appropriate forum to discuss the emergent issue of a proposed increase in

the levels of radioactive discharges. A similar observation may be made in relation to the La Hague case where despite the continuous involvement of the local commission both a public inquiry and pluralistic expertise were required to deal with emergent concern about the possibility of a leukaemia cluster.

Secondly, it is important to note that the resilience of a process may be adversely affected by ambiguities and a lack of clarity about what it can achieve and what is beyond its remit. In the La Hague case, for example, while the official process was concerned with renewing the licence for the facility, stakeholders were focused on the question of the reauthorisation of liquid releases; and while the group of independent experts reviewed the admissibility of the operator's request, stakeholders anticipated a discussion of its acceptance.

La Hague is also exemplary as regards a third factor affecting the resilience of a process. While it may be assumed that certainty is the most desired objective for all parties, there are times—not least in the context of the governance of risk issues—when it is important to be clear that the results of the process are provisional, the best estimate for the time being, but open to revision in the light of ongoing experience. In such circumstances, insisting that results are absolute is to leave the process open to a crisis of confidence if and when experience reveals a different outcome. At La Hague the new licence for the operator specifies that discharge authorisations will be regularly reviewed by a pluralistic expertise group from the GRNC. The net effect is that stakeholders are reassured that a realistic and reasonable approach is being taken and that this is a process in which they can have confidence. Such an approach may be predicted to be more resilient to emergent problems than one that essentially pretends that such problems will not arise. The Etang de Berre case should also be mentioned here insofar as it reveals a capability to adapt the process to the evolution of concerns on the part of the local population with regard to pollution.

3.4.   Outcomes

The framework proposed here, then, suggests that provided the *process elements* (of inclusiveness of participation and of issues, and collective and mutual learning) are present in a relationship of mutual support with a *governance culture* (characterised by clear, resilient partnerships that are well articulated with other levels of governance) the *outcomes* will be improved levels of trust and confidence, as well as decisions that enjoy broad acceptance and which are well adapted to society's increasing concern with

sustainable development. Once again, these are ambitious claims, but the experience from the case studies suggests that this approach to risk governance can indeed provide an advantage over traditional modes of regulation, not least in the context of the most complex risk issues confronting contemporary society. In this section, we will examine each of these outcomes in turn.

3.4.1.   Trust and confidence

Insofar as people are essentially unconcerned by technical systems, they may be said to have confidence in them. The need for a new approach to the governance of risk not infrequently arises because there has been a crisis of confidence. Alternatively, an operator or regulator may foresee that a planned decision is likely to lead to a diminution of confidence if a traditional top-down approach is adopted and seek to avoid this by engaging stakeholders at an early stage. Where confidence is lost, however, it is necessary for stakeholders to make an effort to build trust. Whereas confidence is essentially a passive attribute, trust requires an active and personal engagement on the part of concerned individuals. As the TRUSTNET project initially put this, trust is experience, tested and strengthened through mutual dialogue. Insofar as trust is successfully established, the aim is then to get to a point where confidence is restored. The importance of the process elements of inclusiveness and learning can accordingly be more clearly perceived, as can the importance of trust and confidence as key outcomes of risk governance processes.

The case studies reveal how trust and confidence emerge from such processes and how they in turn serve to bolster their resilience. In the La Hague case, for example, the pluralistic expertise approach was directly responsible for a significant change in relations among the various parties involved. From a tense situation emerged one where there was mutual acknowledgement of the skills of the various actors and of the contribution each could make to the process. The Brent Spar case is a very clear example of a complete loss of confidence in a traditional regulatory approach, even where complete confidence was retained in that process from the point of view of government, regulator and operator. In that situation, it was ultimately clear that a significant effort was required to restore confidence—specifically, an effort to establish trust among the key actors whose relationship had deteriorated significantly.

It is worth noting that key actors are sometimes essential in ensuring that trust is established or that confidence returns. In the Brent Spar case, for example, the crisis of

confidence was so profound that Shell turned to an independent facilitator in order to begin the process of building trust with other stakeholders. It also engaged third party expertise in whom all stakeholders had confidence as a means of dealing with the problem that the crisis of confidence had resulted in an unwillingness on the part of other stakeholders to accept the company's scientific data. In the Devonport case, the presence of autonomous actors in whom the wider community has confidence and who remain vigilant as to the operation of the facility, such as a school governor and a politician, has been very important in ensuring the success of the process. These are actors who are able to communicate the concerns of the community to the operator and the regulator and who are able to feedback information to the community.

At the local level, the case of the creation of the CLIE around Berre is an illustration of the need felt by people concerned by risk to create new forums for discussion which place more reliance on a direct dialogue between representatives of civil society and industry. In this process, initiated by a desire to know more about risk at the local level, social trust is being built in face-to-face interactions between the operator and civil society.

3.4.2. Acceptance/Acceptability of decisions

It should by now be clear that where a risk governance process successfully implements the process elements so as to achieve a sound governance culture, the decisions eventually produced should enjoy a higher and broader degree of acceptance than would otherwise have been the case. Inclusiveness of participation and of issues together with a collective and mutual learning approach means that the framing of the decision will have been more adequate and all concerned stakeholders will have had a much greater opportunity to understand the constraints within which operators and regulators may be working.

It is worth stressing the extent to which this approach marks a change with the traditional approach to the regulation of risk where, in effect, periodic exercise of the franchise is presumed to be sufficient to guarantee acceptance of decisions taken by those who have been elected to exercise power or to whom that power has been delegated. It remains true that for the vast majority of such decisions the traditional approach is sufficient. What experience in recent decades (and, of course, in the case studies examined in this project) reveals is that for some decisions, especially involving

complex risk issues, innovative approaches may be required if acceptance is to be achieved.

3.4.3. Sustainable development

Just as a governance process understood in terms of the framework presented here can lead to more broadly acceptable decisions, even in controversial situations, so it is likely that it will contribute to decisions that take account of sustainable development in a more adequate way than may be possible in the context of traditional regulatory methods. Sustainable development has, of course, most famously been defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.[5] Very many variations on this theme have been developed, but it is possible to suggest that a relatively uncontroversial way of interpreting this principle is to ensure that the benefits of economic development outweigh the costs. While that simple statement may not be contentious, its implementation is much more problematical. How, for example, are costs and benefits to be calculated? How are monetary values to be attributed to social costs? How are future costs and benefits to be dealt with? These of course are precisely the sorts of questions that we saw have proved so troublesome for traditional substantive approaches to regulation and which the new procedural models have sought to answer. The framework of governance proposed here, while by no means claiming to be the answer to all the difficulties surrounding sustainable development, does at least have the virtue of demonstrating how the inclusive, learning approach can increase the chances that a more adequate treatment of costs and benefits, each more broadly understood, may be achieved and accordingly that decisions as well as development are indeed likely to be more sustainable. No strong claims are made in this regard, however, and this dimension of new modes of risk governance would appear to be a rich seam for future research.

3.5.   Evaluation and re-initiation

The foregoing discussion has already made clear that new modes of risk governance must be strongly concerned with ongoing evaluation, not only of the outcomes of the decisions to which they contribute, but also crucially of their own performance. It is

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[5] World Commission on Environment and Development, *Our Common Future*, Oxford: Oxford University Press, 1987, p43.

only by adopting such an approach that a process can achieve resilience and continue to ensure that its process elements are most appropriately implemented and its governance culture robust. In the absence of such evaluation there is a heightened risk that stakeholders will lose confidence in the process. This observation also provides an indication of the sort of evaluation that must be carried out: just as the process requires inclusiveness and a learning approach in order to be successful, so these must be features also of the evaluation. It is increasingly recognised that evaluation carried out by experts is quite likely to use measures that are not regarded as most appropriate by other stakeholders. In the diagram of the framework, evaluation is grouped with re-initiation. This is because the evaluation must not be seen as an end in itself—as has not infrequently been the case in the past—but rather as opportunity to confirm the adequacy of the ongoing process or to develop modifications where these are indicated. Sometimes, of course, where the process is designed to deal with a distinct, time-bound issue, it may be difficult to carry out such an evaluation until the process is at an end. Nevertheless, evaluation is important in such cases as a means of contributing to the transparency of the process and thus the overall confidence that stakeholders will have in the ultimate decisions. Devonport may be referred to as an example here: although the process lasted only for a specific period of time, it was possible to determine its success by considering that the decision reached was broadly accepted by the local public, no legal challenge was mounted and no public inquiry was called. Equally, such an evaluation can help to ensure that any lessons that may be drawn from the process are identified and perhaps implemented in the ongoing operations of the various parties involved, even if the precise process is at an end. Thus, while the Brent Spar Stakeholder Dialogue was a time-bound event, both the operator and the regulator indicated that the lessons learned from the process had fed through into changes in their routine practices. In the La Hague case, following the experience of the GRNC, the authorities decided to utilise a pluralistic expertise group in relation to the revision of the licensing authorisation. Finally, it should be mentioned that where a process exists in a situation where there is now a low level of disagreement, evaluation could serve to ensure that complacency does not arise. The Rohm and Haas case is an example of where earlier controversy has now diminished and where the processes in question are characterised by a relatively low level of disagreement and thus of activity on the part of stakeholders. In such circumstances checking to see how the process would respond in the event of a crisis can be a means of ensuring that it remains truly robust and resilient and that its simple continuity does not present a false picture in this regard.

4.   CONCLUSIONS

Recent decades have seen traditional modes of coping with risk issues subjected to profound challenge, both in practice and at the level of political and regulatory theory. At the level of practice, ongoing technological advance coupled with economic development appears to produce a situation that stretches the control capacities of those public and private actors who are responsible for the decisions that see technology developed, implemented and operated. At the level of theory, traditional formal and substantive models are both seen to have served a purpose in the context of the liberal and the welfare state, but equally to have produced their own side effects and thus now to be inadequate to respond to the current challenges. With much political debate nevertheless being conducted essentially in terms of those models, however, it has not always been easy to see what sort of new approach might be envisaged by those theorists who call for a procedural approach. Indeed, this call for a shift in the direction of proceduralisation has often been misinterpreted as in effect a reformalisation, a deregulation, a return to the dominance of market principles. The RISKGOV project (along with TRUSTNET) has offered a distinctive view both of the extent to which such a proceduralisation does not represent such a deregulation, and of the extent to which it is already evolving in practice in many parts of Europe and beyond.

The purpose of this report has not been simply to recount the case studies and to draw some comparisons, but more ambitiously to propose a new framework of risk governance based on the experience of the case studies and the background of the first two phases of the TRUSTNET project. Thus, we have attempted not only to draw out common features of the various cases, but also to propose a particular categorisation of those features and to identify the relationship between them. Finally, we have suggested that a framework of governance understood in these terms will produce particular desirable outcomes that are especially important in contemporary conditions.

To recap briefly, our proposal is that the presence of certain *process elements* (inclusiveness of participation and of issues, and collective and mutual learning) supporting and supported by a *governance culture* (characterised by a clear, resilient partnership that is well articulated with other levels of governance) increases the probability of achieving *trust and confidence* as well as decisions that are more broadly *acceptable* and *sustainable*.

To be clear, we do not at all claim that this framework is the last word on this subject. Rather it is now something that we would like to see tested and hopefully improved in the context of new risk governance processes. To this end, we have developed a self-evaluation tool, which is included in the Appendix 3 to this report. In this regard, there will be an early opportunity to do precisely this in the context of the TRUSTNET-IN-ACTION project. This recently commenced initiative brings together a range innovative risk governance processes that are newly established or in the process of establishment and which are therefore in a good position to examine and test the framework.

It may also be the case, of course, that this empirical testing of the framework can also contribute to the debate about governance at the theoretical level. It is not clear, for example, that the new framework resolves concerns about the ability of norms to cope with risk issues. We may speculate, however, that norms developed on the basis of decisions framed in the context of such new processes may be better adapted to risk issues than would otherwise be the case.

We are thus confident that RISKGOV represents progress in the field of new approaches to the governance of risk. We are equally clear that much work remains to be done.

APPENDIX 1.   THEORETICAL CONTEXT

Whether one approaches the governance of risk issues from the perspective of political science or of regulatory theory, there is a growing consensus that a fundamental shift has taken place in recent years. It is possible to argue about the precise point at which this shift occurred, but there is less debate about its basic nature: whereas it was previously the case that the licensing, operation and regulation of technological processes with complex features or ramifications was the preserve of experts, and thus essentially only a matter for discussion between the immediately concerned public authorities and commercial entities, it has increasingly become the case that other stakeholders may both expect and be expected to participate in the governance of such processes.

It is probably fruitless to attempt to identify a single point at which this shift occurred.[6] It is more realistic perhaps to speak in terms of a gradual change in expectations, no doubt sometimes developing more rapidly and sometimes more slowly. It could be suggested, for example, that public concern with the potential problems associated with new technologies emerged as a counterbalance to enthusiasm about their potential benefits during the Industrial Revolution when, for example, occupational accidents and pollution began to become apparent. At that time, however, and indeed for some considerable period afterwards, societal expectations about how such problems should be dealt with focused especially upon the operators and upon the state. In short, when problems were identified it was anticipated either that operators would develop improvements to ensure that technological processes were rendered safer or cleaner or, failing that, that the state would intervene with regulations to achieve those desired ends.

More recently, it is possible to observe that when such problems emerge there is simply less willingness on the part of society to accept that operators will indeed behave more

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[6]   Note, however, that Rachel Carson's *Silent Spring* (London: Penguin in association with Hamish Hamilton, 1965) is often identified as a convenient marker for the point at which the change from a public perception of science as essentially emancipatory to one of science as a problem in its own right occurred. It should also be noted that Carson's was only one among many books at that time which examined the 'spoiling of land, air, water and environment' and which were beginning to influence the thinking of governments in advanced industrialised societies. In this latter regard see, for example, Arthur M. Schlesinger Jr., *A Thousand Days: John F. Kennedy in the Whitehouse*, Boston and New York: Mariner Books, Houghton Mifflin Company, 1965/2002, p727.

responsibly (especially where this will have cost implications) and, more significantly, that the state will indeed be able to achieve desired ends by regulatory means. Accordingly, it is possible to find in both the political science and regulatory theory literature discussion of a crisis or the failure of regulation, of a loss of confidence in commercial actors and public authorities, of a lack of trust in traditional political arrangements—all precipitated in no small measure by a societal perception that technological processes are sometimes responsible for potentially serious harm to health and the environment, and that the political will or the regulatory capacity to provide an adequate response are simply lacking.

There is a considerable and growing literature in this field, and it is not intended to offer a comprehensive review here. One of the most insightful and influential accounts of this situation, however, is that provided by Ulrich Beck, who suggests that we are living through a transition from industrial society to risk society.[7] Whereas in industrial society the logic of wealth production dominated the logic of risk production, in the emerging risk society this relationship is reversed. This account can and has been criticised. Within regulatory theory, for example, Hood, Rothstein and Baldwin contend that Beck's analysis is really too sweeping and that it is in fact necessary to look at individual situations to have an appropriate view of what is at stake in terms of risk and its regulation.[8] But whichever side of this debate one finds most persuasive, it is perhaps more important to focus on the fundamental areas of agreement that exist between the risk society and the regulatory regime approaches. In this regard, particular attention should be paid to the fact that both analyses stress, implicitly or explicitly, the importance of *decisions* for a proper understanding of risk. In other words, it is impossible to address the subject of risk without taking account of the role played by decisions in its emergence in a given context, its nature, its scale and extent, the way it is distributed and the way it is responded to.

Recognising the centrality of decisions in any analysis of risk accordingly focuses attention upon the political, legal and regulatory processes by which initial licensing decisions and ongoing regulatory decisions are made, and the commercial processes by which ongoing operational decisions are made. As environmental problems

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[7]   Ulrich Beck, *Risk Society*, London: Sage, 1992.

[8]   Christopher Hood, Henry Rothstein and Robert Baldwin, *The Government of Risk*, Oxford: Oxford University Press, 2001.

demonstrate, for example, such questions are frequently multi-dimensional, requiring consideration of scientific, economic, medical and ethical issues, among others. It is no surprise, therefore, to find that Beck's prescription for the challenges presented by contemporary conditions includes 'opening up the political'.[9] Quite what this opening up of the political (and, by extension, of the legal and regulatory as well) will mean in practical terms is still an open question despite a considerable amount of work at the theoretical level, especially in the last thirty years. It has been the task of projects such as RISKGOV and TRUSTNET[10] to contribute to the emerging picture of this new approach to the governance of risk, especially by examining or conducting case studies of innovative processes in the domain of complex technologies. In order that the contribution of such projects may be properly understood it is necessary to set them against this theoretical background, not least because it allows a clear picture to emerge both of the extent of the challenge to traditional modes of regulation that these innovative processes present, and of the extent of the challenge confronting these processes as they tackle some of the most complex and demanding questions facing contemporary society. Needless to say, there is no intention here to claim that the contribution is in any way definitive: this is an emerging field and more work will need to be done in the future.

Many of the most important theoretical accounts of the nature of modern society and of the appropriate models of politics and law required to cope with contemporary problems draw their inspiration from the work of Max Weber.[11] They also use his categories to describe the various traditional alternatives frequently discussed by political and regulatory actors, and to distinguish the new approaches that they propose. Among the theoretical accounts influenced by Weber in this way it is possible to mention those developed by Gunther Teubner,[12] by Jürgen Habermas,[13] and by Jacques Lenoble and Marc Maesschalck.[14] While Weber was writing around the beginning of the twentieth

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[9]   Beck, note 2 above, pp183ff.

[10]   For details of this project, see www.trustnetgovernance.com.

[11]   Max Weber, *Economy and Society*, Berkeley: University of California Press, 1978.

[12]   Gunther Teubner, *Law as an Autopoietic System*, London: Basil Blackwell, 1993.

[13]   Jürgen Habermas, *Between Facts and Norms*, Cambridge: Polity Press, 1997.

[14]   Jacques Lenoble and Marc Maesschalck, *Toward a Theory of Governance: The Action of Norms*, The Hague, London, New York: Kluwer Law International, 2003.

century, he was already able to discern a shift in the role of the state and in the relationship between politics and law, which makes his approach particularly appropriate for an account of the evolution of politics, law and regulation throughout the last century as a whole.

For Weber, the bourgeois law of the classical liberal state of the nineteenth century was characterised by its *formal* orientation. In Weber's terms, this meant that the state played a non-interventionist role and deployed law in such a way as to provide a minimal framework within which individuals and corporations could regularise social relationships of their choosing. The dominant legal form was thus the contract, an essentially neutral container into which a wide range of contents could be poured. Beyond some minimal rules, the state took no interest in that content, and thus was said not to be concerned with the substantive objectives of contractual relations. The reason for this stance, of course, was the underlying economic rationality of the liberal state, which assumed that the market would ensure a rational distribution not only of material goods but also of other goods and services (including for example labour), all of which were regarded as capable of being commoditised without undue complication. In short, the assumption was that economic rationality would regularise social relationships, as well as social interactions with the natural or material world.[15] Insofar as risk was a matter to which attention was directed, this was largely understood as economic risk and thus as something which the parties involved in any given commercial relationship could deal with by means of contractual rights and obligations.

That this assumption was flawed became clear already (and perhaps especially) in the context of the technological advance and industrialisation that were among the most striking achievements of the liberal state. Even economics began to recognise that the operation of the market produced negative externalities, that the privity of contracts was not well adapted to cope, that it was not always (or ever) possible to assign a monetary value to social costs.[16] Problems such as these led to demands for the state to respond, which in turn led it away from the minimal role it had previously performed and towards ever greater intervention in an attempt to correct so-called market failures. This led to the instrumentalisation of law by politics as it sought to achieve solutions for the problems with which it was increasingly confronted. Reaching its fullest expression in

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[15]   Weber, note 6 above, pp333ff.

[16]   For a discussion, see Richard J. Pierce Jr., *Economic Regulation*, Cincinnati: Anderson, 1994.

the welfare state, this *substantive* or *material* orientation of law was dependent for its success on the ability of science (natural and social) to provide politics both with adequate explanations of societal problems and adequate tools and techniques for their solution.[17] Among these problems, of course, risks to health and the environment were increasingly important and were no longer understood as amenable to a purely contractual treatment. The dominant legal form was accordingly the prescriptive regulation. This attempted to render social and natural scientific knowledge in normative form, which, if adhered to, would lead to the minimisation (indeed, rhetorically, the removal) of such risks.

In more recent years, of course, a considerable literature has emerged on the apparent failure, even crisis, of the welfare state.[18] The promise of the substantive orientation of law is widely perceived not to have been fulfilled. Risks to health and environment appear to have expanded exponentially and seem not to be controlled (and perhaps even controllable) by the deployment of regulations by politics. Worse than that, this substantive orientation is perceived to have produced adverse side effects, making matters worse rather than better. At its most basic, attention has been directed to the practical difficulties facing prescriptive or command-and-control regulation.[19] The response to these difficulties has largely been two-fold. On the one hand, there has been a call to deregulate, to lift the regulatory burden. This approach, focusing on the adverse side effects of the substantive orientation, not least the apparent inefficiencies it produces, seeks essentially to regain the advantages of the formal orientation of law.[20] On the other hand, there have been calls to bolster regulation, to provide more resources, better information, stronger enforcement. This approach, in short, keeps faith with the substantive orientation and suggests that a better implementation of that orientation is all that is required to improve the situation.[21] Insofar, however, as these two alternative approaches continue to rely on models of the state (liberal and welfare),

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[17]   Weber, note 6 above, pp392ff.

[18]   Perhaps most famously, Jürgen Habermas, *Legitimation Crisis*, Boston: Beacon Press, 1975.

[19]   Richard Stewart, 'Regulation, Innovation and Administrative Law: A Conceptual Framework', *California Law Review,* Vol. 69, No. 5, 1259-1377, 1981.

[20]   In politics, of course, this reached its zenith in the 1980s with Reaganomics and Thatcherism.

[21]   Very broadly speaking, the Democratic or socialist opponents of the neo-liberal agenda in the 1980s could be said to have preferred this approach.

on orientations of law (formal and substantive), and on the accompanying rationalities (economic and technocratic), all of which have both been found wanting in the past, not least in regard to their ability to cope with complex risk issues, the danger of a vicious circle developing is obvious.

It is to this supposedly sterile debate between the adherents of two apparently discredited paradigms of the state and of law that a number of third alternatives have offered their contributions.[22] Going by a range of more or less exotic names, including the procedural paradigm,[23] contextual proceduralization,[24] and reflexive law,[25] they have sought to break the vicious circle and to offer something distinct from formal and substantive law that is capable of coping with contemporary conditions. Each of these alternatives is influenced by Weber's account of the evolution of the state and of law, but its precise nature depends very much upon the particular theoretical understanding of contemporary conditions upon which it is based. For the procedural paradigm, this is the colonisation of the lifeworld by, for example, administrative power as proposed by Habermas, which in turn produces a prescription based on the theory of communicative action.[26] For contextual proceduralization, it is the inadequacy of the epistemological presuppositions underpinning traditional modes of governance, which in turn leads to a prescription in terms of an increase in 'the "reflexivity" of our forms for the governance of collective action, both at the level of its institutional arrangements and at that of the actors involved'.[27] And for reflexive law it is the account of functionally differentiated modern society provided by Luhmann,[28] which in turn leads to a prescription in terms of

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[22] Politically, the analogue would be the Third Way, much discussed but little explained by Blair and Clinton in the 1990s. See also Anthony Giddens, *The Third Way: The Renewal of Social Democracy*, Cambridge: Polity Press, 1998; and Anthony Giddens, *The Third Way and its Critics*, Cambridge: Polity Press, 2000.

[23] Habermas, note 8 above.

[24] Lenoble and Maesschalck, *Toward a Theory of Governance: The Action of Norms*, The Hague, London, New York: Kluwer Law International, 2003.

[25] Teubner, note 7 above.

[26] Jürgen Habermas, *The Theory of Communicative Action (Vols 1 and 2),* Cambridge: Polity Press, 1986 and 1989.

[27] Lenoble and Maesschalck, note 19 above, p319. See also Jacques Lenoble, Droit et Communication, Paris: Cerf, 1994.

[28] Niklas Luhmann, *Social Systems*, Stanford: Stanford University Press, 1995.

an orientation of law which is aware of the double contingency of the situation it finds itself in.[29]

Each of these alternatives offers a theoretically rigorous and very rich account of contemporary conditions, which is of particular relevance to an understanding of complex risk issues. Equally, there are undoubted similarities in the prescriptions they offer in terms of politics and law beyond the liberal and the welfare state. In particular, there is a focus on a 'proceduralisation' of law that would allow it to tap into the way in which other social processes generate norms, on a better adaptation of politics and law to specific contexts, and on a more modest appraisal of what can be achieved by political and legal intervention. And importantly each understands itself as having both an analytic and a normative dimension. In other words, each is to be understood as providing both a description of the way in which state and law are evolving *and* equally an indication of the way in which new political and regulatory arrangements should be designed if they are to cope with contemporary conditions. Despite these similarities, however, there are considerable and sometimes very fiercely contended differences between these new alternatives. One of the difficulties in determining their usefulness in informing the development of practical arrangements—including risk governance arrangements—is that each depends very heavily on its own theoretical background. Thus, changing theoretical background can lead one to potentially quite different conclusions about the appropriate shape and form of new governance arrangements which are better adapted to cope, for example, with complex risk issues.

It is at this point, accordingly, that projects such as RISKGOV reveal their importance. By focusing attention on concrete developments in risk governance arrangements in the context of complex technologies in a range of countries, they allow a picture to emerge of the actual evolution of political and regulatory mechanisms without the need to sign up in advance to one or other of the competing theoretical accounts. In this way, they allow knowledge to be generated on the basis of emerging practice rather than being driven by theoretical preference. As TRUSTNET has shown, of course, there is no doubt that these theoretical accounts do catch the general tenor of developments in the post-welfare state environment. The first phase of that project suggested that there has been a general shift away from top-down and expert-led approaches to risk governance and towards a mutual trust model, while the second phase identified the features of the

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[29]   Teubner, note 7 above.

more inclusive approach to risk governance that characterised this mutual trust model. It is in this context that the RISKGOV project has proceeded, conducting case studies of innovative risk governance processes relating to radioactive and chemical discharges in the nuclear and chemical industries respectively. These exemplify well the sorts of complex problems confronting contemporary society, which present such a tangible challenge to traditional modes of decision-making and regulation.

APPENDIX 2.　　　SUMMARY OF CASE STUDIES

The following paragraphs provide a brief description of the risk governance processes studied in the project. Detailed reports are available in Annex 1 and Annex 2 of this report, (also available on the RISKGOV web site: www.riskgov.com). These reports include the presentation of the process, the point of view of different stakeholders and the analysis of the risk governance.

The role of the local liaison committee of the Gravelines Nuclear Power Plant in France

At the beginning of the 1970ies, the decision to build an oil power plant in the area of Dunkirk (North France) was taken in order to provide electricity to the many industries established in this area. The site of Gravelines was selected, but with the oil crisis, the plans were reviewed and it was decided to build a Nuclear Power Plant. Within a spread climate of contesting against nuclear energy, it led to an important opposition move. Nevertheless, the building of a NPP in Gravelines started in 1974 and ended in 1980. The reactors started operating between 1980 and 1985.

Considering the persisting conflicting climate, the mayor of Gravelines initiated the creation of a Local Commission for Information (CLI) in order to show that nuclear industry had nothing to hide and was not less safe than other kinds of industry. The CLI was officially created in 1987 by the General Council of the Department in order to meet the needs expressed by the citizens for clear, accurate and complete information on the site. Its members were nominated by a Departmental decree. The CLI, which has no legal statutes, is funded by local communities (mainly Gravelines, Dunkirk and the Department) and the Regional Directorate on Industry, Research and Environment (DRIRE). The commission gathers more than a hundred of official members (local elected people, public authority representatives, local NGOs, Trade Union representatives, operator and medical authority representatives) but only 20 people take part regularly to its activities. In order to improve the quality of its work, the CLI created two sub-commissions in 1996: a "technical" sub-commission in charge of the technical aspects of the plant functioning and a "population safety" sub-commission whose activities deal with the protection of the population and the management of nuclear accident situation. Two or three plenary sessions are organized each year. The technical sub-commission meets 3 or 4 times a year to debate on new projects, incidents or discharges into the environment.

In the frame of RISKGOV project, six people reflecting the composition of the CLI were interviewed, including two local representatives from the Departmental Assembly and the community of Gravelines, the president of the Chamber of Trade and Industry of Dunkirk, the president of an assembly of NGOs, a representative of the operator and the person in charge of the secretary of the CLI who is detached from the DRIRE.

Generally speaking, members of the CLI appear to be in a vigilant position, taking care of the surveillance of the nuclear power plant at the local level. Their role is rather to analyse regularly the data and information available within the commission. They have also the possibility to ask for complementary measurements or explanations concerning key issues of safety management. To improve the quality of their work, members of the CLI can beneficiate of several sources of expertise at local or national level.

At the same time, they are the intermediate with the local population in order to question the operator and to transfer the information to the local population. The CLI publishes regularly (3 times per year) a news bulletin (OPALE) and send it to inhabitants living close the power plant (100,000 copies).

Most of the members of the CLI are also involved in different local and regional organisations or risk governance process dealing with the protection of the environment and/or the industrial development. There is a will of the members of the CLI to be associated with the organisation of the vigilance in the region as far as environment and industry is concerned, but keeping at the same time a specific risk governance process for the NPP in order to avoid a larger forum not able to tackle specific questions for the surveillance of the NPP such as the question of the ageing of the nuclear power plants in France.

The study of the governance process taking place within the CLI of Gravelines showed that this commission of information really offered the opportunity to introduce local questionings into the traditional risk management process. In fact, the CLI appears to be a favourable place for NGOs to have a quite precise view of the exchanges between the authority (DRIRE) and the operator (EDF) in their involvement in the management of the safety of the nuclear power plant. Therefore, thanks to the autonomy given to the participants of the commission to seek for information and to express their own points of view, it is possible for them to have an influence on the way potential events are anticipated and managed. Furthermore, the local commission for information which gathers people representing the local population (mayors) and environmental interests

(NGOs) seems to occupy a strategic place in the communication with the public about the risk management of the NPP. Despite of this privileged positioning of the CLI, the results given by participants interviewees underlined the fundamental problem of the absence of a legal statute for the commission. In consequence, people see limits in the access and diffusion of information and feel the need to clarify the roles of the members within the CLI as well as the official role of the CLI within the risk management process around the nuclear power plant of Gravelines.

The case of the CLI of Gravelines shows that people involved in the risk management around the NPP of Gravelines managed to create the conditions of a dialogue between a plurality of representatives of the civil society. Several aspects of the governance process such has the autonomy given to NGOs to express their questionings, the possible requirement to different sources of expertise, the perception of frank exchanges between the authority and the operator have clearly contributed to build confidence on a long term between the participants.

The role of the local liaison committee of the Barsebäck Nuclear Power Plant in Sweden

The Local Liaison Committees in Sweden serve as independent institutions for democratic influence into the risk governance processes of a particular nuclear power plant. The LLCs are not the result from a local initiative but a national phenomenon in Sweden, financed by the Ministry of Environment, administrated by the Swedish Nuclear Power Inspectorate. The LLCs have their justification established in law, which rests upon the results of a referendum. The case of the Barsebäck LLC is therefore a study of a long-term dialogue and a top-down organised model for grass-root insight, local transparency and participation in the governance of risks in the local context.

Barsebäck NPP is one of the oldest nuclear power plants in Sweden and also one of the most controversial due to its location some 20 km from Copenhagen. The local support for Barsebäck both in the immediate surroundings and in the greater region is however strong. After Chernobyl, a new focus on communication was placed on the plant and the two key authorities: the Swedish Radiation Protection Authority and the Swedish Nuclear Power Inspectorate. In 1992 and 1993 there was a lot of negative media and public attention directed at Barsebäck, due to two reported flaws in the security system. The first one of these grew to large proportions partly due to an informative mistake by

the plant in the media. After this, Barsebäck's information department was strengthened, and a new policy was adopted for a more active role.

The LLC near Barsebäck was established in 1981 after the referendum in nuclear power in 1980, and its purpose, tasks and member set-up is clearly defined in national law. The role of the LLC is to provide the local public with information about the safety risks and measures taken in terms of safety of the local power plant, as well as to stay informed on these matter in a more global way. The function of producing information material has decreased with the ambitious information from both industry and governmental agencies, and the role of the LLC has become more of a lay insight into the governance processes and information regarding Barsebäck.

The LCC, being composed of lay people of the political parties (according to the latest local election), rely on the industry and the two pertinent governmental agencies for information. These agencies play the key roles in the risk governance, not in terms of responsibility or technical solutions, but in terms of their manifold function as regulators, experts, inspectors and producers of information material. They are also regarded as a disinterested party independent both from the interests of the industry, and also, according to the agencies themselves, independent from the political interests and agendas, serving the interests of the general public. The multiple functions, expertise and independence of the agencies give credibility to information provided by them, and the LCC checks their information with them and their trust in the industry relies heavily on their trust in the agencies.

The national LLC institutions were preceded by a joint organisation for co-operation between the municipalities housing nuclear power plants, the KSO. The KSO is still an active organisation, serving as a common forum for exchange of information for all municipalities housing nuclear power and the different LLCs, also offering education for new members. This provides the LLC with useful tools both for detecting national changes in attitudes and concerns and joint educational efforts.

The Swedish RISKGOV team focused on the role of the LLC and the legal background of nuclear power regulations and policies, including the legal mandate of the LLC. Extensive interviews with the Head of Communications at Barsebäck, and the Secretary of the LLC were conducted. This material was complemented with a study of the meeting minutes of the LLC, the official information material from the industry and the authorities, including the inspection reports. All 18 members of the CAC were asked to

participate in a study of their experiences of the LLC, and 13 participated. For a wider perspective on the roles of the governmental agencies, representatives from each agency were also interviewed, from the regulatory side (rather than the inspection unit), and pertinent laws, regulations and governmental policies were studied, in order to complete the picture about the risk governance procedures.

The special role of the two governmental agencies, is stressed by all interviewed stakeholders; the industry, the LLC members, and the agencies themselves. To the LLC these two agencies are the preconditions for the independence of the LLC, since the agencies have both expertise and knowledge of the industry, and are therefore trusted as an important and independent scrutinizer of information and the operations of Barsebäck, as well as being a reliable source of information themselves.

The case of the LLC near Barsebäck is an example of an institutionalized and long-term forum for local influence and insight into decisions and operations of the local NPP with the means to scrutinize this information with the support of independent agencies and a national network. The role of the LLC is not so much direct influence over particular decisions but one of a democratic and local access to an informed insight, with the possibility to detect changes in both public concerns and in the trustworthiness of industry and agencies. A role that is respected and appreciated by the members, the agencies and the industry alike.

The dialogue forum established by the Rohm and Hass chemical installation in Sweden

Community Advisory Committees is an idea entirely new to Swedish risk governance, but was initiated by a small chemical installation in Landskrona: Rohm and Haas Nordiska AB in 1998. Rohm and Haas is a manufactoring company producing bonding chemicals and plastic pigments. It has a history of complaints concerning bad odours, and was previously both anonymous and associated with the problems of odours.

The CAC initiative came from the company itself inspired by other examples from the international branches of the same company. Individuals from the immediate surrounding area, representing a wide variety of local interests, were invited to participate in meetings regarding the installation, its environmental effects and the company work on safety and environmental measures. In 1999 they received the Best Environmental Work Award in the category Environmental Communication for their

communication efforts taken together. The communication programme includes besides the CAC also a newsletter distributed to all local households, an annual environmental report focusing on environmental performance and policies. There is also an ambitious attitude survey of the local population every third year concerning the local concerns and the perception of the local industry particularly in terms of environmental and safety concerns.

The aim of the CAC is communicational rather than decisional but this role is manifold. It is a forum for the company to get their information across to the CAC members, and medium to get this information across to the local community at large, through the CAC members. It is also a forum for the CAC members to pose questions, raise topics of discussion and come with ideas, complaints or propositions, and a medium for the company to get in touch with the most important issues and priorities of the community. In terms of informing the members and being a forum for addressing the participating members questions and concerns, it has been successful. In terms of spreading this information beyond the circle of families and friends of the CAC members less so.

Trust and confidence for Rohm and Haas have increased after the risk communication efforts taken together. According to the Managing Director there has been quite a remarkable change in attitudes towards Rohm and Haas. In the past Rohm and Haas was relatively unknown and if known this was due to negative reasons, i.e. bad odours. Nowadays the company is better known and for positive reasons.

The Swedish RISKGOV team chose to focus particularly on the CAC in this case study. Studies of all available documents such as meeting minutes and information material, were complemented with extensive interviews with the chairman for the CAC, and the two company representatives present at all meetings, namely the Health, Safety and Environment Manager and the CEO. All members of the CAC where also asked to participate in a survey on their experiences from the CAC. Thirteen of the fifteen members participated in this survey. This material was further complemented by the extensive information material supplied to general public, studies of the chemical governance in the region, as well as the existing regulations and governmental policies for the official environmental goal of a non-toxic environment. This should give a fairly good picture of how this model worked in both the local context as well as the wider governance of the environmental risk and chemical risk policies on higher levels.

It became clear that the CAC was a complement to the other communication initiatives rather than a sufficient model for establishing a relationship with the whole local community on its own. It was perceived as both important and a successful dialogue by the members giving them access to important information. The company regards the CAC as valuable in terms of being able to address the concerns of the locals directly and also to learn about what the local the concerns are, and check whether their policies are in line with the local opinion. The dialogue within the CAC has also increased the awareness of the company of their own environmental policies and decisions since these will be addressed and discussed by CAC.

The company referred to the CAC as an "extra conscience", and the chairman of the CAC thought that the company had to perform better since they have to explain their efforts to the CAC later on.

The Rohm and Haas case shows an example of an establishment of a working dialogue between active community members and the industry management, as a part of, but not replacing a wider out-reach programme, to the mutual benefit of both industry and CAC members.

The dialogue process around the discharges of the COGEMA-La Hague facility in France

COGEMA's spent fuel reprocessing plants are located in La Hague 20 km west of Cherbourg at the far north-west of the Cotentin peninsula. The reprocessing plants started operation in 1966. Six thousands people work permanently on this site, which constitutes one of the main economic activities in the Cherbourg region.

In 1981, the Deputy of Cherbourg created a commission devoted to providing information on the installation, composed of local elected people, local NGOs, experts from public organisations and national NGOs and representatives from the workers of the COGEMA reprocessing plant. This commission is called: "Commission Spéciale Permanente d'Information près de l'Etablissement de La Hague" (CSPI).

In 1995 and 1997, Professor Jean-François VIEL's team at the University of Besançon published epidemiological studies performed in the region of the La Hague reprocessing plant questioning the excess of incidence of leukemia among persons less than 25 years old. The main concern was the possible causal relation between this observation and the

environmental exposure to ionising radiation. The publication of the results caused strong reactions among the local population, and particularly among mothers of children who took this opportunity to organize themselves into a group called "Les Mères en Colère" (Angry Mothers) and published a manifesto asking for "clear and objective information" about discharges from the La Hague reprocessing plant. A nation-wide debate developed around the work done by Professor VIEL involving scientists, experts, operators and associations, which extended beyond France.

In order to investigate the many questions raised by the conclusions of this work, the Ministries of Health and of Environment set up a Scientific Committee in February 1997 to propose a «new epidemiological study in the Nord-Cotentin». Based on the findings of this committee, two expert groups were created in July 1997 to further investigate the situation: one dealing with epidemiological aspects and the other one with radioecological aspects. The working group on radioecology, called "Groupe Radioecologie Nord Cotentin - GRNC" included experts from authorities, organisations specialising in this field and operators as well as experts from a number of local and national associations and European organisations.

Broadening of the GRNC beyond the traditional framework of discussions between operators and representatives of expert organisations has contributed to improving the quality of work carried out in this area, and undoubtedly increased its credibility. The presence of representatives of non-institutional organisations and foreign experts has enriched the work by adding complementary skills and sensitivities essential for a critical analysis. In addition to this, joint work over the long term and a comparison of sometimes very different points of view has undoubtedly assisted the stakeholders in reaching a better understanding of each other's logic and values, and eventually contributed to a better mutual understanding.

From the point of view of the public, incorporating pluralistic expertise is undoubtedly a guarantee of better quality results, requiring more than ever before a clear statement of the issues and debates to which the different parties can contribute.

Setting up a forum enabled the different groups of experts involved firstly to assess their mutual credibility, which is a prerequisite for debate. Thus, a consensus was gradually established about the quality of measurements made by the various participants. The existence of a structure including experts from different social backgrounds allowed the group to deal with points of disagreement or even controversy, without the use of

invective. This provides a setting for a common search for solutions. The evaluation modelling also benefited greatly because the inclusion of local people meant that there was a much better knowledge of local habits and practices.

Finally, the GRNC has demonstrated the feasibility of, and interest in, pluralistic expertise in the assessment and management of radiological releases. According to the point of view of non-institutional experts, there is a need for the continuation of such an approach which gives them the opportunity to be involved in the "surveillance" of the environmental releases from nuclear installations. For the authorities, it provides pluralistic assessment of complex situations which is valuable for setting up the regulation framework for surveillance of releases from nuclear installations. For the operators, this approach introduces a forum with the different stakeholders where open discussions on the environmental and health impacts of releases from the installations can occur. For the local population, it is a guarantee of access to good quality information and answers to some of their questions.

Furthermore, for regulatory reasons, COGEMA asked for a revision of its licensing authorisations. In this context, the Safety authority (DGSNR) started a process for the revision of the discharges authorisations of the installation. This process led to a negotiation, involving different experts. For the first time a pluralistic experts group was asked by the safety authority to give an advise on the documents provided by COGEMA. The experts of this pluralistic group were selected mainly due to their involvement in the GRNC. Their analysis was largely used by the different organisations concerned by the reauthorisation process (from the safety authorities to local NGOs). Although this revision process was an opportunity for public debates, notably under the leadership of the local commission (CSPI), it pointed out needs for improvement as far as the involvement of local stakeholders is concerned. Among the proposals which emerged, we can mentioned the will to improve the diffusion of information during the public enquiry (through internet, or organisation of public debates) as well as the organisation of the "tracability" of the comments provided by the different stakeholders.

The reauthorisation of radioactive discharges from the Devonport Royal Dockyard in the UK

The British Royal Navy has used the dockyard at Devonport, Plymouth, for over 300 years. The dockyard is in the city and close to the city centre. Historically, the dockyard has been very important economically to the city. This dependence is less than in the past but the dockyard remains an important source of livelihood.

Nuclear powered submarines have been refitted at the dockyard since the 1970s. Shortly after a private company, Devonport Management Limited (DML) took over refitting from the Royal Navy in 1987, a decision was taken to move refitting of the larger, nuclear weapon-carrying, nuclear powered 'Vanguard Class' submarines from Rosyth in Scotland to Devonport.

Refitting Vanguard class submarines required a large investment in infrastructure but also a change in the radioactive waste streams from the dockyard. This change required a re – authorisation from the Environment Agency under the Radioactive Substances Act 1993 (as amended), as DML is a private company and not exempt as a Defence organisation.

The discharges of some radionuclides, notably tritium, were set to increase. This factor together with previous controversy, combined with the nuclear weapon carrying role of Vanguard Class submarines (removed before entering the dockyard), meant that the discharge re-authorisation had the potential to be high-profile and controversial.

Realising this, the Environment Agency decided to go beyond the strict regulatory requirements in its consultation – which would only have involved consulting other regulatory bodies – and launched a programme of engagement and consultation with the public.

The main aim of the Environment Agency appears to have been to come to a well-informed decision, rather than reaching a consensus, whilst maintaining its reputation and having a workable decision to regulate. The Environment Agency held publicised public meetings and 'one-to-one' surgeries, as well as using general media relations. They seem to have gone to some trouble to answer queries raised, consulting outside experts where they felt it appropriate. In the end, the Environment Agency

recommended granting an authorisation but with discharge limits generally somewhat lower than originally requested by DML.

The RISKGOV UK project team interviewed a range of people involved in the process, including Environment Agency and DML staff, local non-institutional stakeholders and local elected representatives. A range of associated material, including transcripts of the public meeting, was also collected. Based on this work, the UK team believe they have captured the range of opinions surrounding the process.

The Environment Agency's approach appears to have been successful in avoiding widespread, deep-rooted controversy and in that, generally, their local staff seemed to be well-respected. This general success is attributed to the Environment Agency's careful, proactive approach, which was open and allowed communication between them and other stakeholders.

The process also seems to have helped promote longer-term relations between the site and local stakeholders, although some people believed that more could be done in this area. Indeed, a common theme from the interviews was that the consultation process studied is just one point in the continuing presence of the nuclear installation. The radiation dose-harm model used (i.e. the way in which ill-effects are correlated to an exposure to radiation) was frequently questioned and some people felt that the Environment Agency did not properly deal with this issue and particularly that it did not properly consider conflicting expert views. This point highlights the difficulty of handling national and international level issues in an essentially local process. These comments notwithstanding, the Environment Agency played an interesting role in collecting and making available information from a range of sources. The interviews also indicated resource issues related to stakeholder engagement, particularly 'stakeholder fatigue' amongst local stakeholders.

This case demonstrates that a carefully handled, pro-active process that creates an input for concerns of a wide number of people, who would generally not be involved, has the potential to avoid drawn-out, resource intensive disputes and controversy.

The management of air quality around the industrial site of Etang de Berre in France

The Etang de Berre is located in the south of France, close to Marseille. This area has, for historical reasons, a very high density of industries (oil refineries, chemical industries, electricity generation plants), which leads to the emission of many air pollutants. The objective of this case study is to analyse the functioning of the various dialogue structures dedicated to the management of air pollution, and more precisely to the management of sulphur dioxide (SO_2) releases.

The first part of the work was devoted to the collection of available information on the existing dialogue structure, including: history the dialogue structures, identity and role of the various actors, the procedures set up to reduce SO_2 releases etc. Then, several interviews were conducted with experts (AIRFOBEP), members of NGOs, local elected people, public authority representatives (DRIRE) and a representative of an operator (BP). On the basis of the collected material and the common analysis framework (WP1), an analysis of the risk governance process was carried out.

A rather interesting features of the risk governance on air quality around the Etang de Berre appears to be the co-existence of two kinds of structures, which illustrates, among others, the multi-level risk governance feature:

- On one hand, a "regional" structure, the Permanent Board for Industrial Pollution Prevention (SPPPI) aiming principally at the implementation and the respect of French and European regulations,
- On the other hand, Local Liaison Committees (LLC), lead by industrial and / or local environmental NGO, like the Shell Local Commission of Information and Exchanges (CLIE), aiming at developing a dialogue at the very local level.

The Permanent Board for Industrial Pollution prevention (SPPPI) is not a mandatory structure. It was created 30 years ago to temper a crisis created by the Local Authorities and due to their concern about the potential pollution which would result from the development (supported by the State) of the industrial area located around the Etang de Berre. Though the SPPPI, the Public Authorities pursue the implementation of the regulations and keep the pressure on the operators, while keeping a certain degree of dialogue with them and with the other actors (local authorities or environmental NGOs). The functioning of the SO_2 WG was analysed, and the main role of the DRIRE, the

operators, together with AIRFOBEP, which is responsible for the air quality follow-up, was confirmed, as was the minor role of the NGOs. The durability of this structure is probably due to the constant emergence of new issues (EC regulation evolutions implementation for example) leading to the creation of new working groups integrating new members, etc.

It appeared that such a dialogue could not really answer the increasing need of population to get information on what is going on. This is certainly one of the reasons behind the creation of Local Liaison Committees, which are closer to the population. The CLIE of Shell, for example, is issued from the willingness of the operator to answer the demand of a local environmental NGO (the ARDEB) for more information on the operation of the petrochemical site. It is a non-formal forum of dialogue between the operator and the local population. The DRIRE, even if it participated in a few meetings, does not play a major role in the discussions. Over the last 2 years, other commissions of this type have been created. The purpose of this structure is to favour a dialogue between one operator and the population (or relays, such as community leaders) living near its plant that is *a priori* the most exposed to the plant's pollutant emissions. This structure is used by the operator to determine which efficient measure(s) can be adopted in order to comply with the priorities of the local population (information delivery, modification of a building, etc.).

The SPPPI and the CLIE both deal with air quality management and various actors attend the meetings organized by those structures. Nevertheless, issues raised during the debate are rather different. Those structures appear somehow to be complementary.

As far as expertise is concerned, the key source of knowledge is AIRFOBEP. The fact that its administrative board and its general assembly are composed of representatives of state services, operators, local authorities and NGOs contributes to the credibility and the transparency of its measurements. This credibility has been reinforced since the AIRFOBEP chairmanship was given to a mayor instead of an operator.

The implementation of the OSPAR Convention for chemical and radioactive releases

The OSPAR Convention deals with the protection of the marine environment of the North-East Atlantic. It was signed at a ministerial level in Paris on 22 September 1992 and entered into force on 25 March 1998. It covers both chemical and radioactive

releases. The Contracting Parties are the 16 states which have signed the OSPAR Convention[30]. According to the OSPAR Convention the measures and steps taken to reduce or eliminate pollution associated with hazardous and radioactive substances shall apply: the precautionary principle, the polluter pays principle, best available techniques and best environmental practice. The operation of the Convention presents interesting features of governance.

Basically OSPAR is an intergovernmental process where decisions and recommendations are taken, or Best Available Techniques are set out, following extensive discussions between contracting states. However stakeholders are involved early in the process : they have a significant influence in the discussions that frame the issues. For instance, they can attend about all meetings, and they can submit any documents they consider to be relevant. They can even make proposals but these need to be taken over by one Contracting Party to be discussed.

At the end of the process, the implementation of decision rests in the hands of national authorities. They are eventually the ones that are accountable for transferring OSPAR decisions in the national context, and they have some discretion to deliver contextualized decisions that allow for national or local specificities. Although there is flexibility in implementation, the process is steadily oriented towards the reduction of the marine pollution. By signing the Convention each contracting party has agreed to strive towards the protection of the marine environment. Although one country may have good reasons not to implement a decision (for instance, employment and economic development considerations), it will not like to appear as the country which resists the progress in marine environment protection. For that reason there is interest for all members to build as far as possible a common position before reaching a decision. This negotiation process allows contracting parties to look for a centre of gravity between their respective positions.

The work achieved within OSPAR often seems the result of tensions between political discussions and technical arguments. OSPAR decision-making process is indeed characterized by the integration of technical and political views. Depending on the

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[30]   Belgium, Denmark, the Commission of the European Communities, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland and by Luxembourg and Switzerland

issue, the precautionary principle will be put forward, or the approach will be more focussed on technical considerations and will rely on the development of a BAT.

RISKGOV case study on OSPAR investigated the general framework of the Convention, and the understanding of its operation was actually mainly gained through interviews on two specific issues :

- In the field of <u>radioactive substances</u>, the implementation of the 1998 strategy on radioactive substances was surveyed through interviews with OSPAR secretariat, a representative of the French Ministry of Industry in charge of presenting the French strategy at the OSPAR Commission; a French expert involved in OSPAR working group on radioactive substances, a representative of COGEMA, participating as an observer in OSPAR activities as a member of the WNA (World Nuclear Agency), a representative of Greenpeace France in charge of nuclear related matters.
- In the field of <u>chemical releases</u>, the study focussed on decisions regarding mercury cell chlor alkali production. Interviews were carried out with representatives of Eurochlor and Atofina, a representative of Greenpeace, OSPAR secretariat, a representative of the French Ministry of the Environment.

Chemical releases : case study on mercury cell chlor alkali production

In 1990, a recommendation was made by OSPAR to phase out mercury cell chlor-alkali plants by 2010 (PARCOM decision 90/03) with the aim to reach a zero level for mercury discharges.

Industry agreed in principle with the ban of mercury technology but not with the time-table assigned by OSPAR, and the rationale for the phasing out process. Companies considered that it was already possible to reach negligible impact and to operate the facilities in a sustainable way until their "natural" end of life. They engaged in OSPAR to dispute the 90/3 decision both on legal ground, and on technical criteria.

On the legal ground, the chlor industry argued that the phase-out was not a binding decision. It happens that the phase out is only a recommendation, but it is part of a larger statement which is labelled as an OSPAR decision. All contracting parties have supported the 90/3 decision and they are committed to implement it. However does this commitment also apply to the recommendation ? Taking advantage of this legal ambiguity, the industry has insisted that this recommendation is not mandatory, and requested OSPAR to give a clear statement on this issue.

On the technical side, the industry argued that the overall amount of discharges would be less if the plants would carry on their activity, making an effort to keep on decreasing discharges than if the plants would close in 2010 with no incentive to reduce the level discharges. The industry made efforts to reduce discharges and made numerous studies within OSPAR to assess the level of pollution. First, studies were made to agree on common assessment principles and objectives (since the mercury cell chlor-alkali plants were not all similar). Then, impact assessment was made around the sites on air, water, vegetables, and so on… Feedback experience and epidemiological studies were also carried out. The fact that the facilities dispose of a joint task force through their Union (Eurochlor) was a great help in the process to gather and harmonize the data. Importantly OSPAR meetings made it possible to share this with OSPAR Contracting Parties.

During two years informal intersessional work took place to consider options regarding the implementation of PARCOM Decision 90/3. The first option was to leave the existing Decision unchanged (2010 deadline). The alternative was to replace Decision 90/3 with a new OSPAR decision (review of the 2010 date).

During a workshop in 1999, OSPAR Contracting Parties made a review of the 90/3 decision with the industry. The positions of the Contracting Parties were diverging because they were engaged at different degrees in the implementation of the recommendation. Eventually, OSPAR considered that it was now up to each contracting party to state whether the recommendation included in the 90/3 decision was binding or not. This issue was a matter for national implementation, and no longer for intergovernmental discussion within OSPAR.

The case study outlines the duality of the principles guiding OSPAR actions based both on the substitution principle and the development of BAT. It underlines the important progress enhanced by OSPAR strategies on hazardous substances, especially on mercury, and points at the assets and limits of the loose nature of OSPAR decisions : the efficiency of these decisions may rely on the autonomy Contracting Parties dispose of to implement them. On the other hand OSPAR activities in the field of hazardous activities are being increasingly challenged by the new EU regulation which is more binding.

Radioactive substances

The Strategy adopted at the Ministerial Meeting of the OSPAR Commission in Sintra in 1998 stipulates that "the objective of the Commission with regard to radioactive substances, including waste, is to prevent pollution of the maritime area from ionising radiation through progressive and substantial reductions of discharges, emissions and losses of radioactive substances, with the ultimate aim of concentration in the environment near background values for naturally occurring radioactive substances and close to zero for artificial radioactive substances". In order to implement this strategy, the following agenda has been adopted:
-   By the year 2000: "achieving further substantial reductions or elimination of discharges, emissions and losses of radioactive substances";
-   By the year 2020: "the Commission shall ensure that discharges, emissions and losses of radioactive substances are reduced to levels where the additional concentrations in the marine environment above historic levels, resulting from such discharges, emissions and losses, are close to zero".

From the analysis and the interviews performed within RISKGOV, the following comments were obtained.

The OSPAR Executive Secretary considers OSPAR as essentially a political forum. This point of view is shared by Greenpeace which underlines the possibility of setting some problems (for example, reprocessing) on the agenda. It is a way for the green NGO to put pressure on some states or to try to isolate some others like France or UK concerning reprocessing. OSPAR is also a public arena where the Contracting Parties do not want to be seen as "the country being the problem".

In France, the national authorities (DGEMP and DGSNR) emphasize the ambiguity of the Declaration of Sintra, particularly the time frame 2020, and the difficulty to implement it. No consensus on the interpretation of "close to zero" has been reached until now and the positions of the interviewees are different : COGEMA refers to the dose, DGSNR to the concentrations and Greenpeace to the discharges.

The French national plan has been written by the national authorities and the operators. Greenpeace underlines the absence of consultation with NGO's. For Greenpeace, the national plan reflects the interests of the operators and does not set objectives for 2020. The representative of the DGEMP readily concedes that the national plan mainly draws

a picture of the French current legislation. Moreover, the representative of ACRO (local NGO) notices that the OSPAR Convention is not well known at the local level and hardly discussed at the Local Information Commission of La Hague (CSPI).

On the particular case of the reprocessing, COGEMA and DGEMP insist on the ambiguous positions of some states that have voted the decisions 2000/1 and 2001/1 but keep on sending their radioactive wastes to Sellafield or COGEMA-La Hague. As far as COGEMA is concerned, the review of the authorisation of radioactive discharges for COGEMA-La Hague in 2003 consists of the first national translation of the OSPAR Convention. DGSNR underlines that the reference to OSPAR in the Arrêté was included after a request of the Ministry of Environment.

The abandonment of the Brent Spar offshore installation

The UK Continental Shelf (UKCS) has been the scene of hydrocarbon exploration and production since the mid 1960s. One of the first installations to be decommissioned on the UKCS was the Brent Spar, constructed in 1975. In many respects, this was a unique structure in that it was neither a rig nor a platform, but rather a floating oil storage buoy. It was intended as a temporary storage and tanker loading facility for the Brent field in the northern North Sea—operated jointly by Shell and Esso—until such time as a pipeline could be built.

In the mid 1990s Shell decided to abandon its Brent Spar storage installation in the UK sector of the North Sea. Discussions between Shell and the Department of Trade and Industry (DTI) began in 1992, with some thirteen disposal options initially being considered. Of these, two were finally considered in detail: deep water disposal and horizontal dismantling. After an examination of these two options, Shell received approval from the UK government in May 1995 for its planned deep-water disposal in the North Atlantic. A key aspect of receiving approval was the conduct of a detailed engineering analysis to arrive at the Best Practicable Environmental Option (BPEO). Consultation was also an important element of the process – the company had to consult with interested parties while the government had to inform its counterparts under the OSPAR convention.

Notwithstanding the apparent rigour of the regulatory arrangements, and the fact that no adverse comments arose from any source during the consultation period, when the decision to dispose of the Brent Spar in deep water in the North Atlantic was announced

it was greeted with unprecedented criticism from environmental NGOs, the public at large and other governments. There was particular concern about the precise quantities of and risks associated with any toxic substances remaining in the installation's storage tanks. Despite the fact that regulatory requirements had been fully complied with, it was evident that these did not enjoy public confidence.

Following reports of the Greenpeace occupation of the installation, and especially the dramatic footage shot as activists boarded it, the disposal of the Brent Spar, from being a peripheral issue of technical interest only to regulators and industry, had become a major international issue touching the whole question of the attitudes of government and industry to ocean dumping specifically and environmental protection in general. The government's response was extremely robust, defending the regulators decision. Shell, on the other hand, wavered in the face of the dramatic effects on its business across Europe and finally announced that it was abandoning the deep water disposal plan.

It was at this point that the innovative approach that is the focus of this case study began to emerge. Faced with such a serious problem, the company first move was to commission Det Norske Veritas (DNV), an independent, not for profit, foundation with an established reputation, to carry out an audit of the contents of the Brent Spar with the hope of resolving the conflict between its figures and those put forward by Greenpeace. In the event, Greenpeace admitted errors in its sampling process even before the publication of DNV's report, which supported Shell's assessment. Shell also announced a new 'Way Forward', placing a notice in the Official Journal seeking expressions of interest from contractors regarding the disposal of the Brent Spar. At this point, Shell also announced that there would be a Stakeholder Dialogue Process with a view to assisting the identification of the ultimate solution. This process grew out of Shell's earlier approach to the Environment Council, an independent organisation where it had begun to discuss options for the way forward as regards reaching a new disposal decision. The Environment Council first proposed a process by which a Europe-wide panel of 50 to 60 stakeholders would be established with a view to it being consulted throughout the technical process of developing a new disposal plan as a means of testing ideas and keeping in touch with the various interested constituencies. While Shell was agreeable to this proposal, the response from the UK government was negative. Shell and the Environment Council returned to the drawing board and developed a modified plan which the government accepted—albeit stressing that

whatever disposal option was eventually chosen had to be at least as good as deep water disposal on the basis that this was the BPEO (best practicable environmental option).

The Stakeholder Dialogue process served two important functions. First of all, it served to build trust between regulator and the operator on one hand and the other stakeholders on the other, inasmuch as by the end of the process all agreed that the deep water disposal was indeed the BPEO. And secondly, it allowed the operator and the regulator to see that even a technically sound decision on disposal may not be socially acceptable and that stakeholders may be prepared to accept compromises on one dimension of environmental protection in order to gain advantages on another.

This work has allowed us notably to identify problems confronting this overall shift in the way that risk issues are dealt with by society. In this regard, a problem noted by the operator, by the regulator and by the Stakeholder Dialogue facilitator is what might be termed 'stakeholder fatigue'. In other words, the sheer range of issues which corporate actors and public authorities are now willing to deal with on the basis of inclusive processes is placing a considerable strain on the parties they would normally expect to be interested. This may have implications for the very sustainability of inclusive processes, or it may be that resource-based solutions may be envisaged.

APPENDIX 3.   SELF ASSESSMENT TOOL

INTRODUCTION

Broadly speaking, the case studies conducted during the RISKGOV project may be said to be indicative of the shift that has taken place, especially over the last ten years, in the way that technological risk issues are approached in advanced industrialised democracies—a shift that was particularly identified during the TRUSTNET project. Put most simply, this development sees a move away from a top-down model of dealing with risk issues and towards a more participatory approach. In other words, a technocratic model (in which the tasks of licensing, operating and regulating complex technologies are delegated by democratically elected governments to public and private, regulatory and corporate entities characterised by expertise) gives way to a more inclusive approach (in which those who have an interest in the risk issue in question or are affected by it are invited to participate to a greater or lesser extent in a range of processes aimed at informing the decisions to be taken).

As these case studies, drawn from the fields of radioactive and chemical discharges, demonstrate, the practice of involving a potentially quite wide range of stakeholders in issues that were previously the preserve of experts has become increasingly popular in countries throughout the EU and beyond. On the basis of these case studies, the RISKGOV team has been able not only to draw out some common features, elements and lessons that may be generalisable, but also to make a first attempt at a framework of risk governance that reflects emergent practice. This framework is presented in detail in the final report of the RISKGOV project, but it may be briefly outlined as follows: the presence in a risk governance process of certain *process elements* (inclusiveness of participation and of issues, and collective and mutual learning) serves to encourage and support the emergence of a *governance culture* (characterised by a clear, resilient partnership that is well articulated with other levels of governance) which in turn increases the probability of achieving *trust and confidence* as well as decisions that are more broadly *acceptable* and *sustainable*.

The promised rewards for the implementation of such a framework are therefore considerable. These ambitious claims are encouraged by our observations of the examples in the case studies and also by experience with the TRUSTNET project. But as confident as we are that such an approach has much to recommend it, and as widespread as such practice now undoubtedly is, it is still very much in its infancy, and

a great deal of work remains to be done if its effects and potential contribution are to be fully understood. Projects such as TRUSTNET and RISKGOV have gone a long way towards providing some of this information, but in many respects their findings remain tentative and subject to further analysis. It is for this reason, for example, that the team involved now for a number of years in the TRUSTNET project is moving into a third phase in which the aim is to see to what extent these ideas may be operationalised. By the same token, the planned EURADGOV has similar aims more specifically in the nuclear field.

The self-evaluation tool presented here is in essence a first attempt to operationalise the framework, albeit in a modest way. It is designed to allow those designing or involved in a risk governance process to assess its quality. For those initiating such a process the benefit will hopefully be that it will allow them to determine whether it is functioning effectively and efficiently and also to foresee problems that might jeopardise its continuation. For those involved as other stakeholders in such a process the hope is that it will provide them with some standard, as it were, against which to judge its adequacy and upon which to base claims for improvements. Furthermore, because the criteria included in it are directly related to the elements of the framework of risk governance emerging from the RISKGOV project, feedback from stakeholders should also allow us to test, amend and refine the framework itself.

While the case studies upon which the following criteria are based are all drawn from the field of radioactive and chemical discharges, and while the ultimate aim of the RISKGOV project is to offer recommendations specifically with regard to systems governing radiological risks, it is evident that these criteria may be of more general interest and application. It is for this reason that we see TRUSTNET-IN-ACTION as well as the planned EURADGOV project as early opportunities to consider the utility of this self-evaluation tool and, by extension, of the validity of the framework.

The criteria and questions listed here should not be regarded as definitive. Some criteria may be more or less important in different contexts. Other criteria and questions may appear relevant in some circumstances. As a consequence, this self-evaluation tool should not be regarded as a box-ticking exercise, but rather as an opportunity to reflect on the extent to which a risk governance process is well adapted to the problems it has been established to respond to, to identify how it achieves that aim and how it might be improved.

A.   INITIATION

Initiation
  - *Who has initiated the process?*

The aim here is to determine whether the process has some official status affecting public policy, or whether it is a private initiative affecting, for example, commercial policy.

  - *What is the status of the process?*

Does the process have a statutory or a contractual status, or is it more informal? The answer here will have an impact on the rights and responsibilities of the actors involved.

  - *What is the initial purpose of the process?*

Will the process lead to decisions, inform the decision-making process, provide an opportunity for one- or two-way communication? More than one purpose may be involved.

  - *Have the ground rules for the process been agreed in advance with the stakeholders?*

Much of the discussion in this document may be obviated if the rules by which the process will be conducted have been agreed in advance by all of those involved.

B.   PROCESS ELEMENTS

Inclusiveness of participation
  - *Who is involved in the process and how?*

The aim here is to check whether the process is sufficiently open to all of those who are or may become concerned by the issue at stake. This includes consideration of the ability of the process both to contact the full range of potential stakeholders and then to accommodate them.

  - *How does the process accommodate new stakeholders?*

On the basis that the list of stakeholders involved at the outset may not represent all of those who may eventually have an interest, what steps are taken to ensure that new stakeholders can be identified and brought into the process?

Inclusiveness of issues

- *How does the process seek to ensure that all relevant issues are considered?*

How are stakeholders able to ensure that the issues they see as relevant are included in the process? If issues are left out of account, how is this explained to stakeholders? How does the process accommodate emergent issues?

- *Is the process well articulated with other sectors?*

A participatory process is perhaps more likely than a traditional regulatory approach to identify issues which transcend the boundaries of one sector or policy domain. The aim here is to establish whether the process is both open to and able to accommodate such trans-boundary issues. How does the process achieve this articulation with other sectors when necessary?

Collective Learning

- *How does the process encourage collective learning?*

Here the interest is in determining whether the process represents a genuine effort to ensure that all of those involved may learn together about the nature of the issues at stake. Are the stakeholders involved in an effort to construct a common understanding of the issues at stake? In situations short of this ideal, to what extent are stakeholders able to contribute to the definition of the problem and to what extent are they simply the passive recipients of a pre-established definition? Similar questions may be applied to the ability of stakeholders to contribute to the discussion and development of options for solutions.

- *How does the process ensure the meaningful consideration of societal ('non-scientific') concerns?*

Here the aim is to discover whether the process has, for example, been too narrowly focused on risk when there is really a need to deal with justification. Beyond that, the aim is to determine whether the process is sufficiently open to allow consideration of ethical and other societal concerns or whether there is a bias in favour of evidence presented in scientific terms.

Mutual Learning

- *How does the process encourage mutual learning?*

The interest here is know whether the process is so established as to allow the various participants to learn about each other and their respective positions. In other words, do the various actors take each other seriously and make a genuine attempt both to

understand the position of the others and to incorporate that new knowledge into the potentially revised presentation of their own position? Is a meaningful dialogue developing or is there more of a stand-off with the various parties essentially repeating their basic positions?

- *To what extent can the process be characterised as open, transparent and accountable?*

This question has relevance for both collective and mutual learning. A process is open if there are no barriers to the involvement of stakeholders with a legitimate interest. A process is transparent if all of the stakeholders (whether directly involved or interested outsiders) are able to determine without undue effort what has already happened, what is ongoing and what the future direction is planned to be. A process is accountable if it is responsive to the expectation of all of the stakeholders (whether directly involved or interested outsiders) that what has been agreed in respect of its operation will actually and demonstrably be fulfilled. Each of these attributes has the potential to contribute to both collective and mutual learning.

Expertise

- *How is expertise integrated into the process?*

Do other stakeholders have meaningful access to relevant scientific and other data? Or are they reliant on the information being presented, for example, by regulators or operators? Is there any attempt to adopt a pluralistic approach or to incorporate information coming from different expert sources?

- *How do other stakeholders deal with expert information?*

Even where there is a pluralistic approach to expertise, is there any effort to ensure that other stakeholders are able to make meaningful use of it? What is done to build capacity in this regard? Insofar as a process may be dealing with complex and time-consuming issues, how does it take account of the commitments that may be required from non-specialist stakeholders?

C. GOVERNANCE CULTURE

Clarity about the nature of the process

- *Is there clarity about the nature of the process?*

How is the nature of the process (communication, decision-framing, etc.) determined and communicated?

- *Is there a clear description of roles and responsibilities?*

How are stakeholders able to determine what is expected of them and the extent of the influence they may have? To what extent are they able to discuss and adapt roles and responsibilities if they are not satisfied with them, for example in the context of emergent issues?

Quality of the partnership

- *Has a genuine partnership emerged?*

To what extent is there a mutually respectful relationship among the involved actors? To what extent may it be said that a partnership has evolved, characterised by genuine dialogue, as opposed to one-way communication or formal responses?

Multi-level governance

- *How is the process articulated with other levels of governance?*

Even if the process is well adapted to the level of the issues at stake, there will still remain the question of the link with other levels of governance. Thus, the framing and taking of decisions about a local problem do not take place in a vacuum, but must include consideration of policies, regulations and other processes at other levels. Failures in this regard may lead to disappointed expectations or missed opportunities. How does the process deal with this issue?

Resilience of the process

- *How stable and robust is the process?*

Especially in the context of innovative participatory approaches, it may be the case that the process is not well embedded and may be vulnerable to being shut down and replaced by a more traditional approach. This may occur, for example, where public actors appear to have been forced reluctantly to adopt the new approach. Or it may occur where a process proves to be unable to withstand a crisis situation. What evidence is there that the process is resilient? What are the key factors ensuring resilience?

D.   EVALUATION

Evaluation and re-initiation

- *How does the process feedback information to stakeholders?*

The aim here is to find out whether the process allows stakeholders to check what impact their input is having. For example, does the process require, say, a regulator to

answer all questions that have been raised and to demonstrate what the consequences are for policy decisions?

- *Is there a participatory approach to evaluation?*

If a process is to be meaningfully participatory, then the evaluation of the process itself must also be participatory in nature. Thus, the criteria against which the process is measured should be determined in conjunction with the stakeholders. There may also be stakeholder involvement in the conduct of the evaluation.

- *Has the purpose of the process evolved over time?*

If so, what are the reasons for this, and has this evolution been clear to all of those involved?

- *Is there a need to revisit the ground rules?*

Do changes in circumstances mean that the ground rules require updating? Is there sufficient flexibility within the current rules?

E. OUTCOMES

Trust and confidence

- *How is trust established between the involved actors?*

What are the features of the process that contribute to the establishment and building of trust between the stakeholders? Are third parties required, for example, to facilitate the process or to provide expertise?

- *How is the process viewed by interested parties outside?*

How does the process ensure that other parties may have confidence in it? Are key trusted actors important in this regard? What other means are employed to build trust or ensure confidence?

Acceptance of decisions

- *What evidence is there that decisions taken following the process are broadly accepted?*

An effort should be made here to demonstrate how the acceptance of different stakeholders has been determined. It may also be useful to draw comparisons with previous decisions taken on the basis of more traditional approaches.

Sustainable development

- *What evidence is there that decisions taken following the process demonstrate a concern with sustainable development?*

Here there should be an attempt to demonstrate how costs and benefits have been dealt with in the process, especially where factors are involved which may be difficult to value (for example, social and environmental costs and benefits). How has the preponderance of benefits over costs been demonstrated, especially where uncertain future costs and benefits have to be considered?