Post-Emergency, Multi-Hazard Health Risk Assessment in Chemical Disasters
PEC

Deliverable D.G.2

Dissemination and Results Exploitation Plan

TABLE OF CONTENTS

INDEX OF FIGURES

ii

INDEX OF TABLES

iii

1. EXECUTIVE SUMMARY

Dissemination and stakeholder engagement is central to the success of the project. This document provides a description of the PEC project dissemination strategy. The project consortium recognizes that dissemination activities are an essential and pervasive activity throughout the project's life, and integrated within all its work packages.

This dissemination strategy describes the project's dissemination objectives and measures for achieving them throughout the course of the project. It defines and prioritizes the key objectives of the project's communication and dissemination; identifies the main target audience, internal and external; provides an analysis of particular stakeholder groups/categories and why we want to reach out to them; defines timelines for the planned dissemination activities and stakeholder contact and, finally, identifies and prioritizes dissemination tools and channels.

The overall **objective** of the dissemination strategy is to support the project in achieving its final objectives by raising awareness about the project findings and promoting the project recommendation to the right stakeholder groups.

The project consortium has identified the categories that cover most of the stakeholders.Primary stakeholders for the PEC project include the following groups:

- Academic/scientific community
- Public authorities responsible for public health management and planning.
- Civil Protection & Control Agencies
- Cities and Communities
- Industrial Associations & other lobbying groups
- Decision & policy-making/regulatory bodies
- International organisations
- NGOs
- Citizens

In relation to project dissemination and exploitation tools and means, the project partners have decided to utilize the PEC project website, scientific publications, policy briefs, workshops,

external conference presentations and the telephone to contact individual stakeholders and ask them feedback and opinions about the project methods and tools. These specific tools have been selected based on their appropriateness, their effectiveness, and on whether they are targetable, economical and measurable.

The dissemination plan and timelines have been closely aligned with the PEC project deliverables and milestones. Dissemination activities are likely to be more intense pre- and post- key project deliverables and milestones.

2. PROJECT OVERVIEW

Current analysis of health impacts associated with accidental release of chemicals from industrial sources is based on knowledge of inherent properties of individual agents and the predictable response to a given dose of the chemical determined by classical health risk assessment methods. Limited information exists on health risks posed by absorption of complex chemical mixtures or derived from combined accidents, natural and technological (NaTech) causing environmental release and dispersion of toxic chemicals in the primary disaster area. A consolidated methodology for risk assessment of chemical mixtures and combined NaTech hazards is currently not available.

PEC will bridge the gap developing an integrated multi-hazard risk assessment toolkit that will be tested on a specific project case study. Immediate and long-term population health impacts of the toxic chemicals absorbed either individually or in combination will be determined together with a risk prioritisation matrix based upon damage level attainable in the infrastructures and potential public health risks will be developed to provide strategic risk information for public health planning.

The main **objectives** of the project are:

- To implement an integrated model for rapid multi-hazard health risk assessment applicable to chemical release incidents occurring during major natural or man-made disasters
- To develop a composite risk matrix, considering both severity and probability of identified hazards, to prioritize disaster-related public health risks from clusters of industrial facilities handling toxic chemicals

- To develop an integrated computational platform covering the full chain from chemical releases to internal doses in human tissues in order to build a functional and ready-to-use software operated by local authorities responsible for civil safety and public health protection.
- To develop a series of risk mitigation guidelines for characterisation of "multi-hazard and multi- event-related" health risks in chemical exposures following natural or man-made disasters

3. OBJECTIVES OF THE DISSEMINATION STRATEGY

The PEC dissemination strategy aims at implementing a common dissemination and results exploitation plan assisting partners in disseminating and exploiting the project results. To this aim, the plan will ensure a flexible dissemination strategy that will be adapted to the project needs and will promote the project results in a timely fashion.

The key objectives of the PEC communication and dissemination strategy are:

- To ensure high visibility to all PEC activities and results and ensure maximum impact of the project recommendations
- To raise population awareness about the project outcomes and deliver timely information to all stakeholders
- To promote the adopted practices to the key stakeholders.
- To network with other EU-funded projects and exchange information on best practices
- To encourage the uptake of the project outcomes (practices and technologies) by the EU Member States
- To promote pan-European debate on local risk governance and risk management practices
- To help put knowledge-based disaster prevention policies high on the policy agenda at European level.

The PEC dissemination strategy covers both internal and external communication and dissemination, each of which is discussed below.

3.1 Internal objectives of the PEC dissemination strategy

The objectives of the PEC dissemination strategy for internal communication are:

- To ensure effective dissemination of project results within the consortium
- To ensure effective dissemination of project results towards the European Commission
- To monitor and prepare scientific papers to submit to peer-reviewed international scientific journals (Action G.3)
- To facilitate partner participation to international conferences (Action G.3)

In particular, this dissemination strategy provides members of the PEC consortium with an effective and efficient guide to follow in disseminating the work and results of the project. Internal communication will be conducted via email, teleconferences and periodic face-to-face meetings (around other workshops). Shared documents (including administrative project documents, case study data and reports and publications) are stored in Google Drive, giving all partners, project monitor and officer access at all times.

3.2   External objectives of the PEC dissemination strategy

The external objectives of the PEC dissemination strategy are:

- To ensure effective dissemination of project results towards the external environment & health Risk Management communities (Task G)
- To ensure high external visibility to all PEC activities and results (Action G.2)
- To promote pan-European debate on local risk governance and risk management practices (Action G.2)
- To raise population awareness on the project objectives and outcomes (Action G.2)
- To promote inter-disciplinary "technology transfer" (Action G.3)
- To ensure feasibility and usability of project results from the end-users (Action G.4)
- To ensure sustainability of project results after the co-financing period (Action G.4).

The PEC dissemination strategy provides the basis for engaging with stakeholders through a stakeholder identification, analysis and interaction process. The intent here is to create an impact that will last beyond the end of the project by making the results of the project known to those who

could benefit from them. This will enable the project to strengthen the research and knowledge base of stakeholders by facilitating the presentation of the work and results of PEC precisely and effectively to a stakeholder audience as wide as possible.

This objective implies identification of a wide stakeholder audience, compilation of a contact list to whom we can send information about PEC and its findings, and development of differentiated and targeted communication approaches for different categories of stakeholders.

As part of Task G we have developed a stakeholder taxonomy. Parallel to, and based on this, we have started to compile a contact list. Here we have identified individual stakeholders representing all the stakeholder groups in the taxonomy. The list contains individuals and groups important for the project goals. It has started out as a list of people from the networks of each project partner and will be expanded throughout the project and will be used for maintaining contact with stakeholders.

4. OVERVIEW OF THE DISSEMINATION PROCESS

The PEC dissemination process has two parts: 1. strategy and assessment; and 2. implementation. Strategy and assessment has two elements: the dissemination strategy and plan, and the efficacy of dissemination. Implementation also covers two aspects: execution plus the measurement and tracking the progress of the dissemination strategy. The process is illustrated in Figure 1.
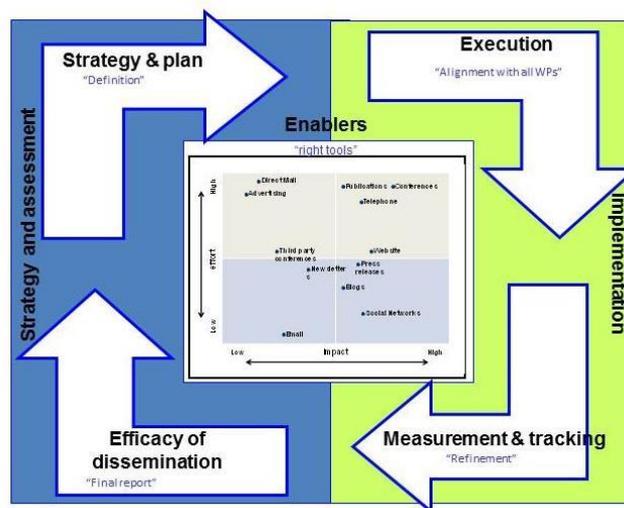

Figure 1: Dissemination strategy process overview

This document presents the initial agreed dissemination strategy and plan. This strategy and plan will be continually monitored, updated and reported upon during the course of the project. In this sense, it will be a living document that evolves with and over the course of the project duration, learning from the project dissemination experiences and adapting to its changing needs. The final dissemination deliverable will be a final dissemination impact report produced at the end of the project (month 24).

5. STAKEHOLDER ENGAGEMENT

Stakeholder engagement is fundamental to the success of the project. One of the principal tasks of PEC is to define and agree upon stakeholder categories that will provide an initial point of reference for the dissemination strategy. However, these categories may be updated and redefined as the project progresses.

The project's workplan includes various dissemination activities. A key task is identifying individual stakeholders, creating a taxonomy of stakeholders and analyzing their stakeholder motivations (i.e., their interests, knowledge, needs and drivers). This task will form the basis of engaging stakeholders through interviews, workshops and other means throughout the project and will ensure that the consortium's analysis, findings and recommendations are based on realistic stakeholder contexts, interests and drivers.

5.1 Identification of stakeholders and users

Stakeholder identification is the first and foremost important task in effective stakeholder engagement. Stakeholders come in different shapes and sizes. PEC defines stakeholders as those who are interested in (and have sufficient or little knowledge) or affected by chemical disasters and will help to be addressed towards policy for multi-hazard risk management and prevention planning, including cross-border cooperation.

Functionally, we can broadly classify stakeholders into the following categories:

Table 1: Stakeholder types and relevance to PEC

Stakeholder affiliation & group	Why we want to reach stakeholders
Academic/Scientific community: • University Community (Students & Staff) • Researchers • Graduates	• Enable Staff, Students and Researchers to participate in workshops of the project • To benefit of their role in the society and their potential to promote awareness of the project objectives
Public authorities: • Ministries of Health, Consumers & the Environment • Public hospitals	• To convince them to consider recommendations made by the consortium, notably with regard raising the awareness on the risk posed to the environment and to the human health by chemical disasters.
Civil Protection & Control Agencies • Safety agencies • Risk control & prevention agenices • Consumer protection agencies	• To inform them about policy issues addressed by the consortium • To engage them in the dialogue about natural and man-made hazards. • To invite them to consider recommendations made by the consortium • To support discussion on enhancing standards and code of building.
Cities and Communities • Municipalities • Communal information centres • Community medical staff	• To inform them about policy issues addressed by the consortium • To engage them in a dialogue about natural and man-made hazards.
Industrial Associations & other lobbying groups • European Chemical Industry Association • Environmental Protection Agencies • Health Protection Agencies	• To inform them about the project's latest scientific findings and output • To provide them with an integrated model for multi-hazard risk assessment • To engage them into public discourse about the responsibility and role of the industry in safety, prevention and control
Decision & policy-making/regulatory bodies: • Relative Ministries • Municipalities • Politicians • European Chemicals Agency	• To inform them about policy issues addressed by the consortium • To provide science-based evidence for decision-making • To engage them in a dialogue about related multi-hazards from chemical disasters • To support discussion on regulatory and safety

• European Commission • European Parliament • European Council	issues • To strengthen cooperation at European level across Member States
International organisations: • World Health Organization • United Nations	• To inform them about the latest scientific and technological advancements • To provide statistical data upon which they can draw conclusions and make decisions • To use their broad platforms as a multiplier of dissemination • To engage their scientific staff in discussions
Non-Governmental Organisations: • European Technology Platforms • Environmental organisations • Consumer health organisations	• To use their broad platforms as a multiplier of dissemination • To spread the word about the project's latest scientific data • To work together so that we can turn technical data reports into layman language • To raise awareness of the possibilities for using research data in campaigns & citizen science
Citizens: • Public figures • Investors • Business figures • Public fora for consumers health	• To convince them to consider recommendations made by the consortium, notably with regard raising the awareness on the related chemical disasters. • To use their voice in claiming public safety rules • To find funds for investment in research and technology development.

The PEC consortium has jointly worked towards identifying relevant stakeholders in each of the identified key categories. Partners are compiling a list of contacts and networks and this will be maintained on an on-going basis.

5.2 Stakeholder Analysis

An understanding of stakeholder interest, motivations and drivers is essential for effective dissemination and prioritization. Understanding stakeholder motivations will enable the

consortium to effectively engage, communicate with and promote future dialogue between different stakeholders. Indeed, the combination of the stakeholders' relevance to PEC and motivations will help the consortium define targeted communication strategies for different groups of stakeholders. Stakeholders are often varied and heterogeneous, with different levels of interest or power. As such, Wright and Cairns[1] present the following graphical representation of stakeholder interest and power:
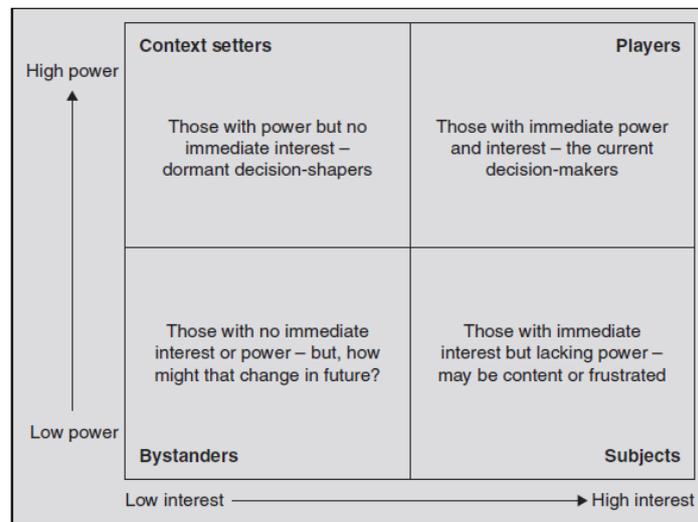

Figure 2: Wright and Cairns' stakeholder framework

This framework is useful not only to understand where stakeholders might be located in terms of interest and power, but it also provides a way to understand how PEC may wish to impact upon particular groups of stakeholders, or even particular individual stakeholders. For example, PEC may wish to encourage specific organizations or individuals to become more interested in seismic hazards by demonstrating how these issues may affect them. Alternatively, PEC may seek to give an interested but relatively powerless stakeholder, such as a citizen group, the knowledge basis to better interact with policy makers and formal research actors regarding seismic hazards.

Despite the clear differences between stakeholder categories, some stakeholder interests and barriers overlap. This is not surprising since stakeholders exist in relationship with one another

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[1] Wright, George, and George Cairns, Scenario Thinking: Practical Approaches to the Future, Palgrave MacMillan, Houndmills, Basingstoke, Hampshire, 2011, p. 92.

and often share ecosystems. An effective stakeholder engagement strategy should seek to address their interests whilst attempting to overcome some of the barriers they experience. Furthermore, stakeholder engagement strategies can seek to integrate stakeholder views in a way which enables stakeholders to view issues from one another's standpoint, which can also reduce barriers and undermine inhibitors.

6. DISSEMINATION TOOLS

6.1 Dissemination tools of PEC

Dissemination of the results of the PEC project will take effect through multiple channels as reported hereinafter. As some activities are expected to have a greater impact than others their choice will depend on the type of the communication and the target audience

6.1.1 Project website

The website is the main source of information about the project available to most stakeholders. A website will be established at the onset of the PEC project and will be maintained for at least one year after the project ends.

The PEC website can be accessed at the following address: www.pec-echo.eu . The website has a flexible design, user-friendly interface and easy navigation to facilitate immediate access to information. The information about the project will be layered to address the needs of all stakeholder groups. In addition, the project will respect the EU guidelines for project web development and will be a powerful information tool for policy-making bodies.

All project public deliverables will be posted on the website. The website will also include direct links to affiliated project websites, announcement about key scientific events, publications and news articles about latest scientific advancements. The website will be continuously updated throughout the course of the project and thus will act as a dynamic and up-to-date source of information for stakeholders interested in open access to research data. The vision about the PEC web portal is to serve as an advanced forum for discussion and content creation that will enable stakeholders and scientists to discuss and exchange experience, methodologies and results in the light of the activities performed in PEC.

Outcome measure: website hits, page views, deliverable/document downloads, comments received, requests for information received.

6.1.2 Scientific publications

Scientific publications and journal articles are a resilient and broad dissemination tool. The consortium partners will cement the impact of their dissemination activities by preparing and publishing formal reports and scientific articles in open access, peer-reviewed journals. To fullfil copyright issues and the management of intellectual property a close monitoring of all scientific production will be established.

Scientific publications can create a multiplier effect and provide the necessary knowledge to the stakeholder for the implementation of similar projects in several regions. In particular, the team will report on the methods developed for integrated risk assessment and on data interpretation in scientific publications to peer-reviewed international journals and presented in international conferences. By ensuring horizontal information in publication and conference participation opportunities both within and beyond Europe, effective technology transfer is guaranteed. That way, PEC will have a long-lasting impact beyond the project duration, particularly in relation to academic discourse in the area.

Outcome measure: number of journal reports and scientific articles submitted and published, type of journal (industry, academic), journal impact factor (although these vary considerably by field) and circulation.

6.1.3 Project leaflets

Flyers will be produced (in English and Italian), containing a brief description of PEC and its objectives and partners. It will be distributed at events attended by the PEC partners in order to increase the visibility of the project, raise awareness about the project activities and expand the network of contacts and stakeholder groups.

Outcome measure: number of flyers printed and distributed, number of events where they are displayed and/or distributed, number of downloads from project web portal.

6.1.4 Technical newsletters

A technical newsletter will be published every 6 months to inform the scientific community about the PEC outcomes. The newsletter will be distributed via the project website and, for targeted individuals, in hard copy. This will aim to alert users regarding key developments and headline results, events, and personnel involved in PEC.

Outcome measure: number of contacts to whom the newsletter is sent, number of requests to join mailing list after receiving it from third parties, number of web-based newsletter downloads.

6.1.5 Policy briefs

A first policy brief will be issued (M12) to target specific policy processes at national level. In addition, a second policy brief synthetizing the overall results derived from the project activities will be delivered at the end of the project. This synthetic policy brief will provide focused recommendations and suggestions for policy-makers based on the overall outcomes of the project activities to support efficiently and scientifically the shaping of future environmental and health policies. The policy papers will be distributed in hardcopy at various events and published in electronic format on the project website.

Outcome measure: number of policy papers issued, feedback received.

6.1.6 Events

Two public events are planned in order to present objectives and achieved results of the project: (1) A Final Conference will be organized at the end of the project to promote the project outcomes and final recommendations to all stakeholder groups, as prior identified. The Final Conference will target at least 80-100 people from all disciplines and interested policy units and will present the key findings of the project; (2) One extra "Working Group Workshop", to be held in the last part of the project in Pavia (Italy). Workshop organizers will take care of the overall organization of the workshop, (for an expected audience of about 80-100 participants), including minutes and – if necessary – recording based on the template/guidelines and rules developed. This meeting will promote to different communities the integration of the PEC approach in the relevant health risk governance and risk

management practices. The partners (at least 1 member per partner) will be invited to attend to the final conference and the workshop.

Outcome measure: number of participants, range of stakeholders represented, participant feedback.

6.2 Assessment and mapping of tool to project activities

Accordingly, the various dissemination tools outlined above were assessed in relation to the stated objectives of the PEC dissemination strategy. For this, we employ the following criteria:

Table 2: Dissemination activity selection criteria

Dissemination activity selection criteria	
Appropriate	Suitable for a particular stakeholder segment.
Effective	Capable of eliciting a strong response or call to action from the particular stakeholder segment.
Targetable	Capable of direction to a stakeholder segment.
Economical	Disseminating the deliverable efficiently both operationally and technically without burdensome aspect or cost.
Measurable	Capable of being measured and distinguishable with reasonable amount of effort and accuracy.

An analysis using these criteria of the dissemination tools to be used in PEC are presented in Table 3.

Table 3: Criteria based analysis of dissemination tools

dissemination tools	Appropriate	Effective	Targetable	Economical	Measurable	Selected
Project website	√	√	√		√	√
Personal communication	√	√	√	√		√
Flyers	√	√	√			√
Newsletter	√	√	√	√	√	√
Scientific Publications	√	√		√	√	√
Policy briefs	√	√	√			√
Project Workshop and Conference	√	√	√		√	√

Presentations at external events & conferences	√	√	√		√	√

Content creation: Relevant content, to be disseminated through the selected tools, will be developed within each Action by the partners responsible for the Action.

Localization of content: To ensure a broad reach, the content developed will be disseminated in Italian and English to cover the whole networks of contacts and stakeholders.

6.3 Mapping of tools to stakeholder groups

The selected tools are then mapped out to address the PEC stakeholder groups. Table 4 outlines the main means that the consortium will use to target **specific** stakeholder categories.

This table demonstrates that different communication strategies are best suited to different stakeholder groups. Therefore, as project deliverables become available or as events or research exercises are undertaken, the consortium will consider which stakeholder groups the deliverable (or event or research exercise) is most applicable to and will publicize the activity using those means. Towards the end of the project, particular attention will be paid to preparing guidelines for different stakeholder groups, and disseminating them accordingly.

In the final report on dissemination, due at the end of the project, we will reflect on the success of our dissemination activities by looking at the outcome measures for each of the tools.

Table 4: Mapping of tools to stakeholder groups

Stakeholder affiliation & group	Primary means of reaching them
Academic/Scientific community: • University Community (Students & Staff) • Researchers • Graduates	• Journal articles • Project Workshop and final Conference • Project website • Flyers • Presentations at external events & conferences
Public authorities: • Ministries of Health, Consumers & the Environment	• Project website • Project Workshop and final Conference • Presentations at external events & conferences

• Public hospitals	• Policy briefs
Civil Protection & Control Agencies • Safety agencies • Risk control & prevention agenices • Consumer protection agencies	• Project website • Publications: Journal articles • Presentations at external events & conferences • Project Workshop and final Conference
Cities and Communities • Municipalities • Communal information centres • Community medical staff	• E-mail • Newsletter • Project website • Personal Contact • Project Workshop and final Conference
Industrial Associations & other lobbying groups • European Chemical Industry Association • Environmental Protection Agencies • Health Protection Agencies	• E-mail • Newsletter • Project website • Project Workshop and final Conference
Decision & policy-making/regulatory bodies: • Relative Ministries • Municipalities • Politicians • European Chemicals Agency • European Commission • European Parliament • European Council	• E-mail • Newsletter • Project website • Personal Contact • Project Workshop and final Conference
International Organisations: • World Health Organization • United Nations Environment Program • UNECE	• E-mail • Newsletter • Project website • Final Conference • Policy Briefs

Non-Governmental Organisations:	• Newsletter
	• Project website
• European Technology Platforms	• Project Workshop and final Conference
• Environmental organisations	• Policy Briefs
• Consumer health organisations	
Citizens:	• Website
• Public figures	• Newsletters
• Investors	• Flyers
• Business figures	
• Public fora for consumers health	

16

7. DISSEMINATION TIMETABLE

Table 5: Timetable of dissemination activities

Dissemination activity/Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Project website		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Dissemination and results exploitation plan and study			█																				█	
Project leaflets			█																					
Newsletter on project website						█						█						█						█
Policy briefs on project website																								
Scientific/technical papers												█	█	█	█	█	█	█	█	█	█	█	█	█
Working group meeting																								
Contacts with stakeholders (incl. meetings)				█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Final conference																								█
Meetings and Personal communication	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

8. EXECUTION OF THE DISSEMINATION STRATEGY

Eucentre will lead the execution of the dissemination strategy, however all consortium partners will make significant contributions to its full and effective implementation.

There are eight deliverables associated with the dissemination strategy (delivery month indicated in brackets):

- D. 1 project web portal (M2)

- D.G.2 Dissemination and results exploitation plan (M3)

- D.G.3 Project leaflets (M3)

- D.G. 4 Newsletters and policy briefs on project website [Newsletters: (M6, M12, M18, M24). Policy Briefs: (M12, M24)

- D.G.5 Scientific/technical papers submitted to journals/conferences (M12-24)

- D.G.6 Working group meeting (M22)

- D.G.7 Exploitation study (M23)

- D.G.8 Final conference (M24)

All partners will contribute to achieving the deliverables of the Task G.

9. CONCLUSIONS

This dissemination strategy provides the PEC project with a solid framework with which to begin disseminating project results and activities. The PEC consortium will use this as an initial strategy which will be further reviewed, revised and updated as dissemination materials and specific strategies are evaluated for their reach, effectiveness in targeting particular stakeholders and alignment with stakeholder interests and barriers. This document, and more importantly the dissemination strategy, will be revised periodically in light of experience. PEC poses particular challenges for effective dissemination, given the variety of stakeholders involved. However, we have already made good progress in identifying stakeholders, and their own challenges. Consortium members have a wide range of experiences in all of the different dissemination tools that we have identified.