Deliverable 7.1 Communication plan

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The purpose of the WP7 is to communicate and receive feedback from experts and stakeholders in the development process as well as to disseminate and communicate Spine case study results. Engagement with relevant stakeholders, including the external experts for the case studies, is a key part of the WP. It will help the project to more accurately and reliably represent a wide variety of different energy related processes. In addition, WP7 aims to decrease barriers of entry so that more stakeholders will start using and developing Spine Toolbox and Spine Model. The work package will also be responsible for the open sourcing the tools in practice.

Task 7.1 Dissemination

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Task 7.2 Communication

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D7.1. Communication plan (T7.1, T7.2) Presents a plan on the communication and training activities based on the description of Task 7.2. Success criteria: acceptable communication plan.
# Table of contents

1. **Introduction** ............................................................................................................ 4  
   1.1 General principles and management of the communication in the project ..........4  
   1.2 Relationship between WP7 and the other work packages .................................5  

2. **Communication and dissemination activities** ..................................................... 6  
   2.1 Dissemination ..........................................................................................................6  
   2.1.1 Dissemination of results..........................................................................................6  
   2.1.2 Dissemination activities and key performance indicators related to them..............7  
   2.2 Communication activities .........................................................................................8  
   2.3 Methods for communication....................................................................................9  
   2.4 Targeting of activities to different stakeholders ....................................................9  
   2.4.1 Policy makers and energy regulators ....................................................................11  
   2.4.2 Transmission system operators ............................................................................11  
   2.4.3 Toolbox users (industry, consultancy, research and students) ...............................12  
   2.5 Summary of the key performance indicators..........................................................12  

3. **Communication and dissemination tools** ..........................................................13  

4. **Monitoring and review of the communication activities** .................................16
1. INTRODUCTION

1.1 General principles and management of the communication in the project

The main objective of the Spine project is to develop and validate an end-to-end energy modelling toolbox for open, practical, flexible and realistic planning of future European Energy grids. The toolbox (hereafter referred to as Spine Toolbox) will be open source in order to combine efforts, not just from the project partners, but also from all the energy modelers interested in the Spine approach and tools. Thus, communication and feedback is very relevant for the development of Spine Toolbox.

In the Spine project, WP7 (Dissemination, communication and exploitation preparation) is responsible for disseminating all materials produced by the project, communicating with the stakeholders and initiating a user community. WP7 also supports the development of the community, and fosters it through workshops and easy access materials like tutorials. Key aspect of communication in the Spine project is to attract interested researchers and other experts to participate in the development of the Spine model. In addition, WP7 aims to disseminate and communicate Spine case study results. More specifically, the aims of communication in Spine are:

- Receive feedback from experts and stakeholders in the development process
- Engage with relevant stakeholders in order to accurately and reliably present a wide variety of different energy related processes in the model.
- Disseminate and communicate Spine case study results.
- Decrease barriers for entry for stakeholders in order to attract them to start using and developing Spine Toolbox and Model.
- Deploy Spine Toolbox and the Spine Model to energy system experts and other potential users in research, industry, consultancy and administration.
- Enable open sourcing of the tools in practice.
- Establish a collaborative open source environment for SPINE toolbox so that its development will continue as multilateral effort also after the project.

Spine project will contribute to possible policies by communicating relevant project results with the stakeholders involved in the EU energy policy development. These include regulators, administrators, policy makers, system operators and industry. In addition, relevant results will be prepared for the general public. The aim of this communication is to demonstrate and highlight the information that research can bring to the society by building solid foundations for important societal decisions. Feedback on the communication material (such as policy briefs) is sought from the advisory board and the external experts of the project in order to ensure that the communication material (e.g. policy briefs) is suitable for the task.

The communication will take place through the Spine website, social media, expert and stakeholder workshops, scientific and popular articles, Spine newsletter, press releases, deliverables, issue tracking system, and source repositories (Box 1).
Box 1. Main avenues for communication in Spine.

The purpose of this communication and dissemination plan is to establish a basis and provide a timetable for the communication and dissemination of the project’s content and outcomes.

1.2 Relationship between WP7 and the other work packages

Along with WP1 (Project Management), WP7 extends over the whole project. It is thereby connected to all the other work packages 1-6 (Figure 1). The information and outcomes communicated and disseminated are based on the results of work in these work packages.

Figure 1. Relationship between WP7 and other work packages of the Spine project.
Case studies form a central part of the project. Communication will form a bridge between the model development, case studies, user community and external experts (Fig. 2). The advisory group gives feedback to the tool and model development as a whole while the external experts are tied to the specific case studies. They have a dual role of helping to make better case studies by giving topic specific expertise and to possibly act as the first test users of Spine Toolbox in case they become sufficiently interested. Once the project group begins to deploy the toolbox (first versions in a year), the user community can start to engage with its development. The user community is foreseen to consist of researchers and analysts from academia and industry. At first, the user community is more likely to consist of researchers as they have more means to participate in the early development phase.

Figure 2. Relationship between Spine Toolbox development, case studies, external experts and the user community.

2. COMMUNICATION AND DISSEMINATION ACTIVITIES

2.1 Dissemination

2.1.1 Dissemination of results

Dissemination activities focus on providing information about the project to various target groups. Dissemination material (in both paper and electronic format) and the project website are prepared to strengthen exchange with external experts, and to raise the visibility of the project.

Project’s dissemination tasks include:

- Preparation of material and publishing it at the public web site. The project website will be used for providing detailed information on Spine’s objectives, partners, methodologies, results,
publications, news, events and links to related activities. In particular, the project website acts as a gateway to the development of Spine Toolbox.

- Set up accounts in relevant social media. The aim is to attract followers through active presence in social media and social media groups (e.g. LinkedIn groups, and EC-hosted collaboration spaces for energy).

- Preparation of newsletters to present the project objectives, partnership and expected results at a glance. The newsletters will be written in English and distributed mainly electronically.

- Preparation of posters for promoting the project at events. Posters, like other dissemination materials, are edited to suite the scope of the event in question.

- Present the project results at conferences.

- Publish the project results scientific journals.

- Reporting of dissemination activities.

Dissemination in the Spine project will make all the open source tools, datasets and results from the project easily available for all potential users in order to facilitate deployment and exploitation. Dissemination is supported by the communication activities laid out in Section 2.2. Dissemination will be managed and coordinated by the WP7 (dissemination, communication and exploitation preparation) leader (VTT), and the contents of it is prepared in collaboration with all the project partners. Each partner will be assigned specific actions with respect to audience, technical scope, timing and geographic coverage.

![Figure 3. Overview of communication, dissemination and exploitation in Spine.](image)

### 2.1.2 Dissemination activities and key performance indicators related to them

Success of the communication and dissemination activities is measured through Key Performance Indicators (KPIs) which are regularly followed in WP7.
The main avenue for dissemination is the Spine website. The website will provide a link to Spine Toolbox development site, which will continue to be used also after the project for the development of Spine Toolbox and the Spine Model. The website will be hosted by one of the project partners and will continue to be hosted also after the project, as the cost of maintenance is nowadays negligible. Open source software development requires several collaboration tools and these will be made accessible through the website. These tools include a discussion forum, a version control repository, a project management / issue-tracking tool, and a data repository.

**KPI: Over 150 downloads for Spine Toolbox**

**KPI: Over 40 registered users for Spine Toolbox**

The project will establish accounts for Twitter and LinkedIn. The project consortium will actively relay news, tool upgrades, results etc. to these social media tools and seek actively to increase the number of followers using personal contacts and professional networks. The consortium has experience in effectively using social media in communication. For example, UCD and VTT are partners in the EU project RealValue, which has approximately 1,500 followers in Twitter.

**KPI: Active accounts in all the relevant social media. Whenever the project produces tools or results that are useful to others, an announcement will be made through social media.**

SPINE will promote the toolbox to become a widely used tool highlighting the added value to the potential users and informing them about the availability and capabilities of the toolbox. Potential users are mainly in academia and in industry. They are likely to attend energy related workshops, conferences and other meetings. Consequently, Spine will be presented in a number of different venues in order to reach a critical mass. The presentations will lay out the main aspects of Spine Toolbox and Spine Model.

**KPI: Present Spine in at least eight different events covering audiences from academy, applied research, and industry to consultancy.**

Existing networks of the project partners will be used to communicate major milestones that are relevant for the networks. These include major announcements on availability of tools in Spine Toolbox and results suitable for a particular network. Spine workshops and presentations related to Spine project will also be advertised in these events with appropriate ways. WP7 manager will collect contact information about potential networks from the project partners early in the project (the networks include IEA Tasks, EERA joint programmes ESI, E3S and Smart Grids, European Technology Platforms and interest groups of related national and EU projects).

**KPI: At least 10 announcements posted to relevant networks.**

Dissemination will also include scientific journal articles that will concentrate more on the methodological advances that the Spine Model takes. In addition to a number of method specific articles, the project will make an article that will serve as the main point of reference for the Spine Model.

**KPI: Submit at least 6 articles within the project to relevant (with possibility for open access publishing) journals such as: IEEE Transactions on Sustainable Energy, IEEE Transactions on Power Systems, Energy, Applied Energy, Energy Economics, Renewable Energy, and Operations Research.**

### 2.2 Communication activities

As the project builds tools for energy system modellers, the bulk of the communication will take place with expert audiences. This communication aims to get feedback from different user and stakeholder groups in order to improve the toolbox, the model and results of the project. However, the society as a
whole will also be targeted in order to highlight that research brings benefits to the society by building solid foundations for important societal decisions.

2.3 Methods for communication

By communicating results, we here mean interactive communication of Spine Toolbox and outcomes to target groups that will potentially participate in the model development and exploit results of the Spine project.

Key part of communication in the Spine project are the five workshops organized within the project, which will be used to communicate the tools and the results, and receive feedback from potential users and other energy system modellers. The first workshop is organized as an open seminar. The seminar will introduce the modelling activities of Spine. The event will be held during the first year in order to collect feedback from potential users on the toolbox and model design criteria. The last four workshops take place during the latter half of the project. The main aim of these workshops is to expose potential users from academia, consultancy, public administration and industry to Spine Toolbox and facilitate the uptake of the toolbox. The workshops will also be used to receive feedback on the Toolbox (what to improve) and on preliminary results so that more viewpoints can be accommodated in the analysis.

Case studies of WP6 will ensure that Spine Model and Spine Toolbox can handle many different tasks in energy system analysis. Most case studies have an external expert whose task is to challenge and give feedback on the approach and results of the case study. The experts are highly experienced in the particular modelling problems and/or in energy sectors. The feedback from such experts will help to make the model relevant and usable for those whom the tools are targeted at.

KPI: The five events together will expose Spine directly to at least 80 persons interested in energy system modelling who are not involved in the project.

2.4 Targeting of activities to different stakeholders

Spine project will communicate results to the relevant stakeholders concerning

- Project and its aims in general
- Spine toolbox
- Different market design options across energy sectors – including interactions between the energy sectors.
- The value of new energy transmission links
- Inefficiencies caused by divergent regulations.
- Improvement of energy efficiency
- Cost efficiency of energy efficiency in the building sector when it is considered as part of the wider energy system
- Primary energy efficiency gains in the transport sector with increasing role of electricity
- De-carbonization potential of the economy with increasing use of renewable electricity in other energy sectors.

In Table 1 activities targeted at specific stakeholders are detailed.

Table 1. Main communication activities by project phase and stakeholder group
<table>
<thead>
<tr>
<th>Sectors</th>
<th>During the first half of the project</th>
<th>During the latter half of the project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry R&amp;D</strong></td>
<td>Get feedback for the tool development from the advisory board and the case study external experts in order to improve the toolbox.</td>
<td>Make the Spine workshops attractive to industry R&amp;D and present also in the event that they regularly attend. The benefit is to improve the toolbox and the results through expert feedback. Get exposure in professional magazines for Spine Toolbox. The benefit is to increase the deployment of the toolbox.</td>
</tr>
<tr>
<td><strong>Researchers and students</strong></td>
<td>Invite selected external researchers and students to collaborate in the tool development and data acquisition; contacts through EERA ESI, EERA E3S, as well as partners in other research projects. The benefit is to improve the toolbox and get more resources for its development.</td>
<td>Open the tool development to all potential contributors and users. Invite collaborators through presentation in workshops, conferences, scientific publications and social media. Keep count of toolbox downloads and registered users. Once these reach sufficient levels, start using the numbers to promote the toolbox. The benefits are to improve the toolbox and to increase the deployment of the toolbox.</td>
</tr>
<tr>
<td><strong>Public administration and policy</strong></td>
<td>Discuss the model features, especially those concerning regulations and market design with key persons in the EU and national administration. The benefit is to make the model more applicable towards policy and market design analysis.</td>
<td>Discuss the results of the case studies with policy makers and energy regulators (see exploitation plan). The benefit is increased exploitation of the results.</td>
</tr>
</tbody>
</table>
General Public
A press release and a publishable article for interested media outlets about the increasing complexity in energy related decision making and how advanced tools can help to make better decisions. This will demonstrate the benefits of research to the layperson.

A press release and a publishable article for interested media outlets about how energy sectors are becoming increasingly interconnected and how that can help to integrate variable power generation more cost effectively. This will demonstrate the benefits of research to the layperson.

<table>
<thead>
<tr>
<th>Dissemination method</th>
<th>Target group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web page</td>
<td>All</td>
</tr>
<tr>
<td>Messages and comments in social media (at least Twitter and LinkedIn)</td>
<td>Industry professionals, researchers, public administration and policy makers</td>
</tr>
<tr>
<td>Spine newsletter</td>
<td>Industry professionals, researchers, public administration and policy makers</td>
</tr>
<tr>
<td>Presentations, papers and posters in relevant conferences</td>
<td>Researchers, Ph.D. students, industry professionals</td>
</tr>
<tr>
<td>Articles in open access scientific journals</td>
<td>Researchers, Ph.D. students</td>
</tr>
<tr>
<td>Articles in professional magazines</td>
<td>Industry representatives, policy makers, public administration</td>
</tr>
</tbody>
</table>

INEA will be informed of all the larger communication activities, and the communication tools offered by the H2020 program will be utilized whenever relevant.

2.4.1 Policy makers and energy regulators
Conclusions drawn from the project results will give policy makers and energy regulators a better understanding of how the increasing interactions between energy carriers will impact the integration of variable power generation, and consequently allow decreasing of GHG emissions not just in the power sector but in all the energy sectors. The results will also demonstrate how regulations and market design impact these goals, and what changes need to be considered. The project will approach policy makers and energy regulators through direct contacts. We will visit some of them and explain what consequences the results imply.

KPI: Present and discuss Spine results with at least 10 policy makers and/or regulators including both national and EU levels.

2.4.2 Transmission system operators
For transmission system operators the project results will give a chance to understand how uncertainty and other energy sectors could be considered in optimized grid planning and how their inclusion will impact grid planning. Spine Toolbox and Spine Model will also be exploitable tools for the transmission system operators. To our understanding their current tools are not fully capable of considering both
short-term and long-term uncertainty as well as the impact of other energy sectors, and Spine will address this shortcoming.

**KPI: Present and discuss Spine results with at least five different transmission system operators.**

### 2.4.3 Toolbox users (industry, consultancy, research and students)

Spine Toolbox can be exploited by producers, consumers, consultants, transmission system operators, researchers and students to investigate how energy systems may evolve, how specific assets may develop in the future, or consider the business potential of new investments or technology concepts.

Two tutorials will be organized on how to perform an energy system modelling task with the toolbox. These walk-throughs will be made in collaboration between the dissemination efforts and the selected case studies. The tutorials will guide the user through the modelling work stream: data acquisition, scenario setup, modelling, and analysis. Case studies will be used as examples that help in learning. They will also act as a starting point for further analysis.

The project partners will reply to questions about Spine Toolbox, Spine Model and the case studies. The questions and answers will be published in the Spine website. Clear documentation including charts that show how to access model capabilities in the different dimensions (time, uncertainty, geography, technologies, energy grids, energy markets, and regulation) will be provided.

**KPI: At least two test cases with tutorials available in open repositories by M24.**

**KPI: Publish a reply to at least 30 questions related to Spine Toolbox, the Spine Model and the case studies.**

### 2.5 Summary of the key performance indicators

In the Table below, key performance indicators (KPI) related to communication and dissemination have been collected together.

**Table 3 Summary of KPIs**

<table>
<thead>
<tr>
<th>Action level / Target group</th>
<th>Key performance indicator (KPI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissemination</td>
<td>Over 150 downloads for Spine Toolbox</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Over 40 registered users for Spine Toolbox</td>
</tr>
<tr>
<td>Dissemination</td>
<td>At least 10 announcements posted to relevant networks.</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Active accounts in all the relevant social media. Whenever the project produces tools or results that are useful to others, an announcement will be made.</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Present Spine in at least 8 different events covering audiences from academy, applied research, and industry to consultancy.</td>
</tr>
<tr>
<td><strong>Political decision-makers and energy regulators</strong></td>
<td>Present and discuss Spine results with at least 10 policy makers and/or regulators including both national and EU levels.</td>
</tr>
</tbody>
</table>
3. COMMUNICATION AND DISSEMINATION TOOLS

During the first semester of the project, a set of communication tools is defined. These include project logo, website, power point template and project website are set up. In addition, social media accounts in Twitter and Linkedin are opened.

Figure 4 depicts Spine project’s logo. It is used in all the on-line and printed documentation of the project.

In addition, the project has a power point template and a template for posters (Fig. 5 & 6). Both of these are used in all the project presentations. The opening slide of the power point template has small figures that depict the different parts of the Spine model.
For the poster presentations, a poster template has been prepared (Fig. 2).
The website of the project is the main avenue for communication and dissemination of results. The address of the website is www.spine-model.org. The many collaboration tools needed for open source software development (discussion forum, a version control repository, a project management/issue tracking tool and a data repository) will be made accessible through the website. In addition to the tools, the website will contain documentation, project deliverables, presentations and articles. The addition of new research papers, presentations and other publications in the website after the end of the project will also be made possible.

In addition to the website, the project sets up a mailing list through which recent news of the project will be delivered. Joining of the mailing list is advertised on the website and on all the relevant meetings. Internal mailing lists for the Spine project, for the Spine advisory group, and for toolbox/model developers have also been set up.

Social media will be actively used at least through project’s Linkedin and Twitter accounts, which will be set up in M5. Particularly in internal and external events hosted by Spine, such as the workshops, social media use (especially through Twitter) is vital. Social media use will help to promote the event, and interacting with others at the events also raises Spine’s social media profile and thereby contributes to achieving a wider audience. It is also a useful means
of sharing information on Spine’s activities, highlighting attendance at each event, and bringing updates directly from the speakers. Photographs can also be uploaded to Twitter, accompanied by a caption or description. In addition, these will provide photos for further reporting after the event.

4. Monitoring and review of the communication activities

In line with the grant agreement, all the project participants promote the Spine project and its results by producing targeted information at many different organizations, ranging from media, the public, decision-makers and the scientific community. This will be done in a strategic and efficient manner. In all communication and dissemination, reference will be made to the funding received from the European Union. This will be conducted through displaying the EU emblem and by including the following text:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 774629” (Figure 7).

The Commission will be informed of any communication activity that is expected to have a major media impact.

All project partners will be responsible for active communication and dissemination of Spine news, activities and outcomes. All communication and dissemination activities are followed and recorded in the project’s online workspace. All the project partners are responsible for informing VTT of their activities. WP7 project manager will also follow up the project’s social media accounts, retweets and media hits, e.g. through analytics.twitter.com.

Success of the communication and dissemination activities will be regularly monitored e.g. through the defined Key Performance Indicators (see Section 2). Content and success of the workshops are evaluated after each of them, and taken into consideration when planning the next one. In M46, a report on the communication activities and workshops is produced.