

Final Recommendations and Gaps Report



SPRING Project

September 2019



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www.spire2030.eu/spring

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Project SPRING – Deliverable 4.10

Final Recommendations and Gaps

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Background

Many of the SPRING activities are focused on providing guidance for enhancing the impact of SPIRE projects. To differentiate this deliverable from just being a collation of other general recommendations from other deliverables (e.g. recommendations for consortia to improve project proposals), **this deliverable is focused on identifying recommendations for work required to attend to gaps that *have not been* addressed within the activities of the SPRING project itself.**

This 'Final' Recommendations and Gaps report is an update on Deliverable 4.5 (Preliminary Recommendations and Gaps).

Recommendations are made in relation to the SPRING objectives (with an emphasis on objective 4), plus an additional section for cross-cutting actions:

1. Improve the articulation of the value of project exploitable outputs
2. Improve the articulation of industry needs and barriers-to-uptake of exploitable outputs
3. Improve the mapping of project value to industry needs
4. Identify **policy** gaps and recommendations to improve project impact

1 – Improving the articulation of the value of project exploitable outputs

1.1 – Gaps

SPRING has developed guidance for project participants to help develop and publish Project Output Summaries for a wide range of results and resources that could be exploited beyond project consortia. SPRING has also developed an Exploitation Plan template for helping SPIRE projects to articulate Key Exploitable Results and their route to exploitation. Gaps may remain where some projects may still need additional help from specialist expertise to articulate cross-sectoral value of their project outputs.

1.2 – Recommendations

- Promote and support **use of SPRING outputs by those preparing project proposals and engaged in live projects**. SPRING has prepared content for presentations used by A.SPIRE at brokerage events and project kick-off meetings to raise awareness of the support available to project consortia delivered through SPRING and other SPIRE-funded CSAs. Project Officers are in a position to encourage consortia to consult these resources.
- Consider opportunities to provide **face-to-face and/or web-based training for coordinators & communication/exploitation managers** who are new to **SPIRE projects** and/or the communication/exploitation role. Whilst there are many resources offered through H2020 platforms for general training on this topic, a more targeted offering could be organised and promoted by A.SPIRE to reflect the specific issues and needs of the SPIRE community.
- Identify and promote **external one-to-one support to help projects close to completion**. The IP Booster activity¹ is a good example of such an activity aimed at Universities and RTOs. Similar activities could be delivered for SMEs and large industry partners, with a focus on supporting the development and implementation of robust exploitation plans. Experience suggests that those involved in the delivery of such support should have sector-specific experience to ensure the best engagement with project participants.
- Looking forward to Horizon Europe, **the continued development of the Horizon Results Platform is recommended**, with consideration being given as to how to integrate the SPRING Key Exploitable Results template and the Commission's Results Summary template. The purpose of the platform should be expanded to include searchable summaries of all valuable project outputs, not just the Key Exploitable Results, in the same manner as the SPIRE project output summaries are intended to be used.
- An **increased focus on the value of education and training resources as exploitable project outputs** across the Horizon Europe programme is recommended. There is scope to encourage projects to identify potential resources developed as part of their programme and publish summaries via the Horizon Results Platform to enable academics and industrial training providers to include these resources in new and revised course offerings.

¹ <http://ipbooster.meta-group/>

2 – Improving the articulation of industry needs and barriers-to-uptake of exploitable outputs (technology push - how can a project have the best chance of having its outputs exploited by industry)

2.2– Gaps

Many projects have a focus on technology development, solving scientific and engineering problems. Projects often have less expertise on awareness and development of alternative business models to help make the case for exploitation of project outputs.

Projects can lack awareness, or sometimes just focus, of what factors will actually make industry want to adopt new innovations. This can be both through not structuring innovation performance/ impact data in formats to support decision-making by industry and by treating sustainability evaluations as just quantitative data processing exercises to be done towards the end of the project.

Although many technical barriers are often considered by projects, general awareness of the human-centric barriers to industrial uptake of innovations can often be less well considered. Most industrial plants have (long) lists of potential improvement projects that meet pay-back time criteria, hence projects that actually get implemented tend to offer more than just potential impact data, but clear ‘stories’ of how they bring value to those who could easily cite barriers.

Exploitation plan reviews can often be too focused on commercial aspects (e.g. forming spin-out companies), rather than exploring the benefits/ trade-offs/ motivations of industry to want to exploit the innovations.

2.2 – Recommendations

- At grant preparation, kick-off and review stages, Project Officers could request a **review of key sustainability/ business driver metrics** and relevant progress against them (e.g. compass diagram of innovation options and trade-offs versus baseline) – “What do you need to demonstrate to make this attractive to industry?”, not just *how* something may be exploited.
- Promote and support **use of SPRING outputs by those engaged in projects**. SPRING has prepared content for presentations used by A.SPIRE at project kick-off meetings to raise awareness of the support available to project consortia delivered through SPRING and other SPIRE-funded CSAs. Project Officers are in a position to encourage consortia to consult these resources.
- Consider opportunities to provide **face-to-face and/or web-based training for coordinators & communication/exploitation managers** who are new to SPIRE projects and/or the communication/exploitation role. Whilst there are many resources offered through H2020 platforms for general training on this topic, a more targeted offering could be organised and promoted by A.SPIRE to reflect the specific issues and needs of the SPIRE community.
- Identify and promote **external one-to-one support to help projects close to completion**. The IP Booster activity referred to previously is a good example of such an activity aimed at Universities and RTOs. Similar activities could be delivered for SMEs and large industry partners, with a focus on supporting the development and implementation of robust exploitation plans. Experience suggests that those involved in the delivery of such support should have sector-specific experience to ensure the best engagement with project participants.

3 – Improving the mapping of project value to industry needs (technology pull - how can industry identify the most appropriate innovations from the SPIRE portfolio)

3.1– Gaps

Workshops which are supposed to bring together projects and industry have historically been organised by single projects, with agendas that have a heavy bias towards dissemination of information by project participants. Although thematic workshops have been used more recently to bring together several projects on similar themes, a gap exists that many workshops fall short of delivering the required *two-way engagement* between projects and industry (due to issues of format, timing, location, audience).

Although the SPIRE Project Output Summaries framework provides a means for industry and other stakeholders to be able to access information about SPIRE innovations after the projects' completion, a risk remains that longevity of this framework platform cannot be guaranteed beyond H2020 and broader use of the platform may identify the need for further modifications to the framework (e.g. additional classifications/ format changes).

Many industrial organisations use some form of Stage-Gate approach to develop and select projects for exploitation. However, a gap still exists that there is not broad usage of robust and transparent approaches to decision-making in industry, so that reasoning can be re-visited and alternatives selected if future criteria/ situations change (e.g. an increase in carbon taxes, change in corporate goals, or reduction in price of renewable energy technologies).

Industry experience gathered in SPRING highlighted that industry can often be more open to consideration of a new innovation if it is introduced via a trusted intermediary, rather than through a direct promotion/ sales route. However, a gap exists that not all industry has awareness of appropriate trusted intermediaries (who can use the SPIRE portfolio to identify potentially relevant technologies).

3.2 – Recommendations

- Continue to **develop and promote use of the Project Outputs System** and ensure this has appropriate support from A.SPIRE. Projects should be encouraged to generate Project Output Summaries by both A.SPIRE and Project Officers. Guidance to facilitate this has been developed by SPRING and is available via the SPRING website.
- Looking forward to Horizon Europe, **the continued development of the Horizon Results Platform is recommended**, with consideration being given as to how to integrate the SPRING Key Exploitable Results template and the Commission's Results Summary template. The purpose of the platform should be expanded to include searchable summaries of all project results, not just the Key Exploitable Results, in the same manner as the SPIRE project output summaries are intended to be used.
- **Increased engagement of cluster organisations with A.SPIRE.** Cluster organisations can be both regional and topic-based (industry) clusters. Some of the regional based examples of clusters are the port areas (Rotterdam, Antwerp, etc), which also include numerous actors from the process industries. These clusters, especially the geographical types focused on the process industries or where the process industries represent a large share of the members, are the ideal 'customers' for the SPIRE projects and their outputs. A cluster offers a wider, yet integrated, approach on different topics; consequently, there would be more chances of

taking up a project output, and even making this output the ‘standard’ in that cluster, thus increasing its spread within the industry. Moreover, as part of its long-term approach to R&I at the EU level, as expressed by the SPIRE 2050 Vision and (draft) Roadmap, SPIRE is proposing the development of the Hubs for Circularity (H4C), which will allow industry and society to move towards the zero-landfilling goal of anything that is recoverable or recyclable. This can be an opportunity to align and join forces towards a circular economy and society. Furthermore, the H4C are considered as a tool to contribute also to the goals of Carbon Neutral Society and globally competitive EU process industry. It is thus important that the cluster organisations involved in SPIRE one way or another, or the industries that are involved in both clusters and SPIRE, will also take up the results and recommendations stemming from the SPIRE work/projects.

- **Promote the decision-making training materials developed in SPRING** in order to support industry in the robust evaluation of opportunities to implement innovations arising from the SPIRE programme. These introduce a structured means of best practice technology evaluation.

4 – Policy gaps and recommendations to improve project impact

4.1– Gaps

The SPIRE programme is contractually obliged to report against Key Performance Indicators, and in recent years there has been a move towards getting a common set of KPIs across similar H2020 programmes. However, Some KPIs are irrelevant to the SPIRE portfolio (e.g. jobs created versus the TRL of most projects). By adding more KPIs and increasing the amount of ‘impact’ questions asked of projects, this can dilute the importance of the core SPIRE KPIs.

For the Progress Monitoring Reports there has been variable quality data fed back from projects, due in part to the disconnect between questions asked, versus phase of project against its timeline. Another factor is that once projects have ended, extracting any information on how the outputs are being further developed or implemented (if at all) is often impossible, as there is no incentive for participants to respond to the survey. The highest impact is in the case of no reply from projects that finish between two SPIRE progress monitoring reports; consequently, as the Coordinators (and project partners) often do not reply, there is no ‘final’ data for these projects.

SPRING explored whether incorporating visualisations into the data collection process increased the accuracy and validity of answers provided by respondents. Respondents felt that visualisations increased the accuracy and validity of their answers. They also felt that visualisations increased their engagement when responding to a survey (more details can be found in Appendix C in D4.8).

Although the experts contracted to review projects at proposal and review stages usually have good technical expertise related to the projects, there is no specific support or training given to these reviewers for evaluating project impact against the SPIRE vision and roadmap objectives, yet if the SPIRE programme is to meet its goals, there needs to be more consideration of this link than if a project was just in a general NMBP call.

In the early years of the SPIRE programme, SPIRE projects were not obliged to be in contact with A.SPIRE, nor respond to requests for impact data despite the importance of this for demonstrating the

progress of the SPIRE programme towards its objectives. Although this has been addressed to some extent through updated provisions in more recent Grant Agreements, a gap exists that there can be limited reporting and information flows to A.SPIRE from some projects. An underlying issue is the perceived burden of project impact monitoring resulting from the various surveys that projects are asked to respond to (e.g. the annual A.SPIRE PMR questionnaire, direct questionnaires through the Participant Portal, Innovation Radar, etc). SPRING has developed guidance to reduce the burden for active projects, but there is scope for the future to implement standardised project impact monitoring that meets the needs of all stakeholders whilst minimising the input required from project participants.

SPRING found that there has been uncertainty regarding the definition of Impact terminology, which can lead to unrealistic expectations of what projects can report and what conclusions can be drawn from the information in relation to the realisation of measurable impact. By emphasising the path that leads to Impact (how project activities deliver *outputs*, which then cause some form of behavioural change as an *outcome*, eventually leading to an *impact*), this can lead to better, more honest, discussions regarding impact. SPRING noted that the European Commission is adopting similar language in the ongoing consultation on the implementation of Horizon Europe, and guidance has been developed by SPRING to raise awareness within active projects, though it should be borne in mind that for a fully enacted Output from a project to deliver measurable Impact can take several years in the process industries.

A feature common to the impact surveys considered during SPRING is that the emphasis is on ‘successful’ outputs from projects, with the inference that these are aligned with what the project set out to achieve. Whilst it is important to capture and promote these outputs, the value that can be gained from capturing similar information on unexpected outcomes, both positive and negative, should not be overlooked. These outcomes may be beneficial for others not directly involved in the project for a variety of reasons, and if captured could also prevent future funding going to similar work that might fail for similar reasons.

SPRING has made recommendations for researchers (i.e. PhD or Post-Doc) to be based in industry, as demonstrated in the EPOS project, to help embed the research in end-users and to be able to operate within corporate confidentiality firewalls (e.g. only requiring the release of results through the firewall, rather than having to request lots of raw data for calculations etc.). Employment law in different member states, however, can create barriers to this being feasible for all industry partners.

4.2 – Recommendations

- Make contractual KPIs fit the type of projects in a programme (not one size fits all PPPs)
- Identify opportunities to **simplify the data gathering burden for project participants**, for example by promoting use of the SPRING Key Exploitable Results template as a means of gathering much of the common information required for the various impact assessments required of projects. As we move into Horizon Europe, there is an opportunity to further simplify the majority of this data gathering by **implementing a common format captured in a single platform (i.e. the Participant Portal)**. If there are issues relating to automatic data sharing with the PPP for PMR reporting, a permission form or check box could be used to confirm that projects give permission for this data to be shared in this manner (with the caveat that if permission is not granted, projects will have to fill out a separate questionnaire containing similar information for ASPIRE). As similar information is also of value to Exploitation Managers within projects, **the common template for gathering information on**

Key Exploitable Results proposed in this deliverable could form the basis of the common format.

- Consider mechanisms that enable projects to build up a picture of their potential impact with forms that they can update routinely (and as a minimum for each reporting period), rather than starting from a blank form. It should be possible to start capturing information as qualitative assessments, building to more accurate quantitative data as the project progresses. If a simplified data gathering mechanism is implemented for Horizon Europe **projects should be permitted to add and edit impact data on the participant portal on a continuous basis, using forms that can be updated at each reporting milestone based on the previous information. Expectations should be made clear in the Grant Preparation phase as to the timescale for data review** (i.e. for project review and SPIRE PMR data collection). Projects can then plan and task partners with timely data collection, rather than it being an additional burden.
- **Implement a data gathering structure that recognises the stage of the project and the relevance of certain impact monitoring questions.** Some questions only become relevant in the later stages of a project's timeline. Although the full set of impact questions should be known at the start of the project, questions relating to detailed impact assessments (e.g. LCA assessments) should not be mandatory to answer at the start of the project. At the start of a project, the expectation could be that projects fill out a very basic overview of the project and include any predicted impact data from the project proposal. This then forms the basis for the impact assessment. At each review point, projects should have the option of being able to use previously submitted data (without having to re-input), which can be updated when more detailed analysis has been done.
- Further explore the idea of **incorporating visualisations into the data collection process** to increase the accuracy and validity of answers provided by respondents. Initial work suggests visualisation increases the accuracy/validity of answers and engagement. However, presenting data during data collection may also introduce anchoring effects which could provide mental reference points that ultimately affects responses. This needs to be investigated further to see if incorporating visualisations during data collection improves or hampers responses.
- It is advised that the EC, together with the relevant stakeholders, would do a more thorough **top-down analysis and assessment of the PPPs' impact**, and compare it with the results from the partnerships' Progress Monitoring Reports (or equivalent), which are more of a bottom-up approach. This combined approach would have a double benefit: on the one hand, comparing the results of both approaches can lead to a better calibration of the future analysis and assessments; on the other hand, the top-down analysis can put the PPPs 'into context', and thus show the necessary changes that ought to be made in the near or more distant future so that partnerships can better deliver.
- Develop and use a **consistent model for extrapolation of project impact to EU level** (potentially using models like EPOS Blueprints)
- Introduce as new metrics the **evaluation of the effectiveness of projects based on their Outputs and Outcomes** (less focus on Impact at the project level towards the end of their lifetime, and after). The period after the project lifetime is the most important, as it is necessary to see how long and how much it takes for the project outputs to be developed into full-fledged products, processes, etc, and then implemented. Unfortunately, this period is also the most difficult to gather information, as there is no contractual requirement for the former project partners to report the developments (unless there is a follow-up project also funded

with EU money), and due to the inherent staff changes in many organizations. One proposal is to use a simplified (and largely optional) format to collect such data, and/or special funding could be provided to cover the cost of former-coordinators' participation in the PMR survey.

- Regarding the **placement of researchers within industry**, SPRING would encourage this model as demonstrated in the EPOS project. However, mechanisms should be sought to facilitate this where the employment law restrictions are a barrier.

5 – Cross-cutting gaps and recommendations from SPRING

4.1– Gaps

Network groups have been established under SPRING, through LinkedIn, for Coordinators and Sustainability Practitioners, and an SME group through CrowdHelix. Continued active participation in these network groups by SPIRE projects cannot be guaranteed and thus remains a potential gap.

4.2 – Recommendations

- **SPIRE network groups require further promotion and encouragement** by A.SPIRE and Project Officers to new and existing projects.
- The existing groups can be used to ensure a certain level of communication and collaboration (and even coordination) between the project representatives and A.SPIRE (and the POs) on the various topics relevant for SPIRE.

Summary of SPRING recommendations presented at H2020 CSA workshop (4th April 2019, Brussels):



sustainability

Article

How to Improve Impact Reporting for Sustainability

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Recommendations

➤ **For policy:**

- ✓ Make contractual **KPIs fit the type of projects** in a programme (not one size fits all PPPs)
- ✓ Create **information flows between data portals** for reporting (could projects be asked to sign up to “agree to share impact data with SPIRE PPP”, then collect all impact data through Participant Portal?)
- ✓ **Allow projects to build up a picture of their potential impact** with forms that they can update each year/ reporting period, rather than starting from a blank form. Allow information to start as qualitative assessments, building to more accurate quantitative data.
- ✓ Do **top-down assessment of the impact of PPPs**, not just bottom-up collations of data.
- ✓ Develop and **use a consistent model for extrapolation of project impact** to EU level (potentially using models like EPOS Blueprints)
- ✓ **Evaluate effectiveness of projects based on their Outputs and Outcomes** (less focus on Impact at the project level).

3



Recommendations

➤ **For stakeholder community:**

- ✓ Support and promote usage of **SPRING guidance and training packages**
- ✓ **Face-to-face training** for those in key roles who are new to SPIRE projects
- ✓ External **one-to-one support** to help projects close to completion (*noting current call for Innovation Radar experts*)
- ✓ At proposal, kick-off and review stages, **request review of progress against key sustainability/ business driver metrics** (e.g. compass diagram of innovation options and trade-offs versus baseline) – “What do you need to demonstrate to make this attractive to industry?”
- ✓ Promotion and usage of **Project Outputs framework**
<https://www.spire2030.eu/projects/outputs>

