



Deliverable D3.2

Reviewing the beta version of the S-PARCS e-Platform and the Initial Assessment Tool (Collection of Test Protocols)



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Envisioning and Testing New Models of Sustainable Energy Cooperation and Services in Industrial Parks

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DELIVERABLE 3.2 – VERSION 1

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DEM	Demonstrator, pilot, prototype, plan designs	
DEC	Websites, patents filing, press & media actions, videos, etc.	
OTHER	Software, technical diagram, etc.	

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CO	Confidential, restricted under conditions set out in Model Grant Agreement	
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S-PARCS presents a sound concept for reducing energy costs and energy consumption in industrial parks, while, at the same time, increasing renewable on-site energy production. The pre-assessment of the seven "Lighthouse Parks" from Spain, Portugal, Italy, and Austria, which participate in the study, has shown a high potential for joint energy actions, many of which are transferrable to the community of S-PARCS Followers in the UK, Sweden, Turkey, Russia, Italy, Portugal, Austria and Norway.

More information on the project can be found at <http://www.sparcs-h2020.eu/>

Disclaimer

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Executive summary

The aim of Deliverable 3.2 "Collection of Test Protocols" is to summarize the feedback of Lighthouse Park Managers and S-PARCS partners for the test version of the Initial Assessment Tool (IAT). Also, the specification of the S-PARCS IAT is included, as well as the characteristics of the most engaging contents of the S-PARCS e-Platform, where the IAT tool will be implemented. The S-PARCS e-Platform will create a community of interest within the industrial sector to transfer all the material developed in S-PARCS project that may be of interest, including the IAT as engagement instrument.

This deliverable provides information about the first internal release of the S-PARCS IAT and platform and aims at structuring the next steps in the finalization of the tool. The final public version of the IAT will be presented in early autumn 2020.

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1 INTRODUCTION

The project S-PARCS - Envisioning and Testing New Models of Sustainable Energy Cooperation and Services in Industrial Parks - presents a sound concept for reducing energy costs and energy consumption in industrial parks, while, at the same time, increasing renewable on-site energy production. A core output of S-PARCS will be a free online ICT tool which aims at supporting the decision-making and solution-finding processes in industrial parks that are keen on installing energy cooperation measures, increase their energy efficiency, and strengthen their competitiveness.

This ICT tool is called the S-PARCS industrial park service platform and consists of four core sections:

1. An information website (<https://www.sparcs-community.eu/>) which presents information about energy cooperation in industrial parks in general, provides insights into barriers to energy cooperation and solutions & instruments to overcome them.
2. The S-PARCS IAT (Initial Assessment Tool; <https://iat.sparcs-community.eu/>) that supports stakeholders to assess suitable energy cooperation solutions.
3. Showcasing “Best Practices”: in this section best practises from industrial parks are highlighted and key information about the measures in these parks is provided.
4. The S-PARCS community platform <https://www.sparcs-community.eu/platform/> which enables industrial parks to find suitable stakeholders to support them towards energy cooperation solutions becoming real. In addition, parks will have the possibility to network with other parks that can help them to find solutions to a specific problem or collaborate with them. Stakeholders interested in supplying one or more types of support to parks can register as well and provide legal, technical or financial support to making energy cooperation solutions becoming reality.

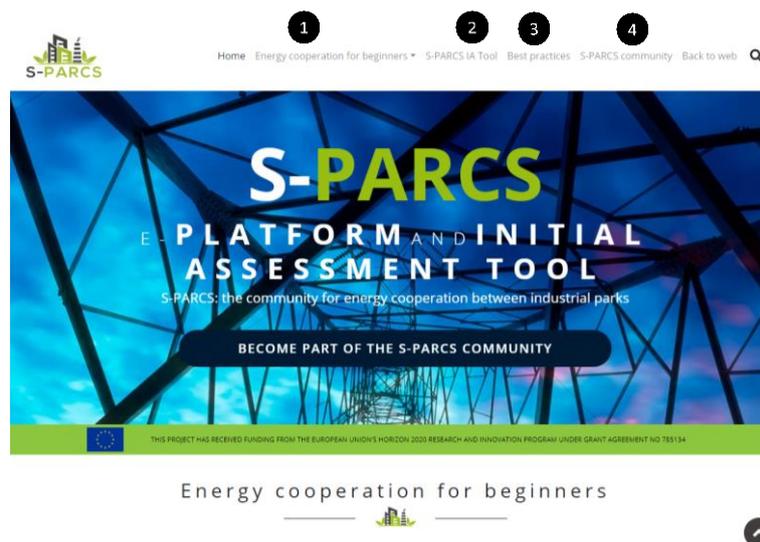


Figure 1-1: The S-PARCS e-Platform

The objective of the S-PARCS industrial park service e-Platform is to be a meeting, supporting and dissemination point for any kind of energy related cooperation solution and service for different stakeholders involved in such processes, being the reference platform for any

interested party in energy cooperation solutions and services within industrial parks, from company representatives to investors or providers of services.

This document summarizes the results of the first internal testing period of the beta version of the S-PARCS e-Platform and the Initial Assessment Tool (IAT), including their scheme, components, and different levels of assessment, inputs and results as well as the main technical specifications.

2 S-PARCS E-PLATFORM CONCEPT

One of the core outputs of the S-PARCS project is the **e-Platform S-PARCS COMMUNITY** and the Industrial Park Service Initial Assessment Tool, short **S-PARCS IAT**. The aim of the present document is to provide a review of the experiences made while testing the first version of the IAT within the S-PARCS consortium. It will give a brief overview of the comments and conclusions of the first application of the IAT through the Lighthouse Parks, which are collected, structured and used for the decisions how to improve the IAT based on the experiences and judgement of the managements of the participating parks.

This thorough internal testing phase supports the improvement of S-PARCS COMMUNITY and IAT (M20-M24), it is done in order to cover four main aspects:

- ▶ to assess its usability and time effort required to use it,
- ▶ to check the existing functionalities and proof-reading the texts,
- ▶ to assess the credibility of the outcomes from the point of view of S-PARCS Lighthouse Parks, and
- ▶ to assess whether the derived results are clear and concise enough to make them a valuable input for related decision processes.

In order to do this assessment all S-PARCS partners and most notably the S-PARCS Lighthouse Park partners tested the tool independently and reported comments and conclusions. Together, all partners involved in WP 3 then decided which issues need to be incorporated in a revision of the PLATFORM and IAT, to have a final version at the end of WP3 ready for publication and distribution.

3 S-PARCS IAT CONCEPT

The **Industrial Park Service Initial Assessment Tool (S-PARCS IAT)** forms part of a wider supporting **e-Platform (“S-PARCS community”**, <https://www.sparcs-community.eu/>) for companies and parks. There is a necessity at the level of parks and companies to be informed about the existence of energy cooperation and mutualised energy services and about the benefits they can obtain by implementing them at their premises, as has been concluded in several meetings within the S-PARCS project.

The **S-PARCS e-Platform** will create a community of interest within the industrial sector to transfer all the material developed in the S-PARCS project, as well as news, events and technical material, serving as support, meeting point and coverage for the IAT and to encourage and engage parks and companies willing to participate in energy related

cooperation and mutualised energy services. The **S-PARCS e-Platform and IAT** will be scrutinized and pre-tested by S-PARCS technical partners together with the S-PARCS Lighthouse Parks at first, once the first version is made officially public in month 27 it will be disseminated and spread among the Follower community to ensure practicability and usability. It is important to highlight that the **S-PARCS IAT** is not intended to be an expert-level software allowing the detailed technical modelling of energy, materials and other resource flows in an industrial park (as there are software products available on the market for such purposes). Such systems require significant effort of the utilizing party and rely on classified and confidential data impeding their exploitation for triggering energy related cooperation at inexperienced parks. The S-PARCS IAT aims at filling the gap between these expert-level tools and a broadly applicable solution yet providing the park management with quality input for informed decisions about a) what energy cooperation solutions to prioritise, and b) how to start the related innovation processes taking into account possible barriers, instruments to overcome them, as well as possible business models to be agreed within or with other industrial parks. For the S-PARCS engineering team, the provision of the S-PARCS e-Platform and IAT to any interested party (free of charge) is considered as an important way of getting in contact with potential future clients, and thereby boost the replicability of the S-PARCS approach and outcomes.

The S-PARCS e-Platform will be fully completed in Month 30 (ending of August 2020), the beta version is already available (February 2020).

3.1 Development steps

S-PARCS community platform and Industrial Park Service Initial Assessment (IAT) have been developed following a continuous process which is explained within this section.

After several meetings of the WP 3 team, it was concluded that it is difficult to obtain detailed data from the companies due to absence of energy monitoring or due to confidentiality issues. The latter has influenced the concept of the S-PARCS IAT becoming a supporting tool for decision making instead of an energy cooperation assessment tool with detailed information on potential energy and economic savings. In this sense S-PARCS IAT becomes the S-PARCS platform, in which S-PARCS IAT will be embedded. The S-PARCS e-Platform will create a community of interest within the industrial sector to transfer all the material developed in the S-PARCS project that may be of wider, public interest. Guides, support and technical material, will serve as support, meeting point and coverage for the IAT, it will encourage and engage parks and companies willing to participate in energy related cooperation and mutualised energy services.

The specification of the S-PARCS IAT and the e-Platform were developed within Task 3.1. The workflow of defining the system specification is based on the analysis of the parks and the output of work packages 1, 2, and 4.

As mentioned before, the input data required from parks and companies, as well as supporting stakeholders to help implementing and replicating energy cooperation solutions, have been defined based on the meetings and surveys done with Lighthouse Parks within work packages 1, 4 and 5, and internal consortium meetings and results from work packages 1 and 2, in any case, following “as-little-as-possible-as-much-as-needed” approach.

S-PARCS IAT has been implemented as part of a multi-platform application based upon previous, related experiences of the WP leader, CIRCE. Comparable tools commonly adopt the Excel format to develop tools, which has some advantages; however, the interfaces tend to be not user-friendly, too complex and not very intuitive to use. Therefore, it was decided to use a different approach. The technical specifications of the web hosting server are:

- Virtual service VPS 2 (2vCPU, 4GB RAM, SSD 60 GB)
- OS: Linux
- MySQL: For databases storage.
- Plesk: Web hosting platform

An additional module has been included as part of the e-Platform, a meeting point called “S-PARCS community” where parks, once they have chosen their solutions, can find external support of different types (legal, technical, financial) to help them with its implementation.

The S-PARCS community platform and S-PARCS IAT, published at the end of month 24, complies with GDPR according to the Data Management Plan (D7.1) of S-PARCS project.

The S-PARCS IAT is implemented as an online tool as part of the S-PARCS community e-Platform. The ambition is to have an easy-to-use tool providing its output to the user within a very reasonable time (below half a person*day). The interface and software of the e-Platform implementation which integrates the S-PARCS IAT is carried out by a specialised third party which has been selected based on the best value-for-money criterion and the S-PARCS IAT itself is being developed internally by CIRCE.

S-PARCS community e-Platform includes:

- Basic information to get the parks started with energy cooperation solutions. No registration is required to access this information:
 - What is energy cooperation?
 - How can I start?
 - Joint energy solutions
 - Barriers to the energy cooperation
 - Business models
- S-PARCS community (meeting point): where the parks can find support from external stakeholders to implement the solutions.

There are three types of users:

- **Park representative**, they will be in charge of including all the information about the park in both S-PARCS IAT and Community, adding the solutions they want to implement and asking for support from stakeholders; and also from others parks in terms of advice or networking.
- When using the S-PARCS IAT parks will have the possibility of adding key **companies** from the park to fill the questionnaire, these companies will register through a link the park will send them and then they will fill the questionnaire of the S-PARCS IAT.
- **Stakeholder**, they will have the possibility of supporting energy cooperation solutions implementation.

- S-PARCS IAT, as a decision-making tool, which will help to detect potential energy cooperation solutions, barriers to the implementation and instruments as well as business models that will help to implement the solutions.

The data needed from the industrial parks/companies asked through the IAT are:

- general data about the companies in the industrial park (employees, daily working hours, annual turnover, etc.),
- type of energy used by the park and the companies (electricity, thermal, biomass, gas),
- and other set of questions

The parks and companies' answers will help to detect through the IAT (in a first assessment), in the beta version:

- which energy cooperation solutions are the most suitable for the park,
- which barriers need to be overcome to implement the proposed solutions,
- instruments to overcome the proposed barriers.

Work package 4 and further work package 2 results will help to carry out a second assessment (to be implemented for the fully complete version) in which:

- the feasibility of the solutions will be obtained (from organisational, legal, etc. factors),
- and business models obtained will be proposed to the park to implement the solutions.

4 Structure of the test protocol

The e-Platform is related and embedded within the project website (<https://www.sparcs-h2020.eu/>) which corresponds to *Deliverable 6.1 "Website available in English"*, already delivered, in the way that the website could be seen as the free-access-part of the S-PARCS e-Platform. Additionally, the e-Platform is also directly accessible via the links provided above.



Figure 4-1: Starting page of the S-PARCS project website

In this sense, the scope of the e-Platform includes the creation and development of three segments related to three different ways of access. The Beta-version of the e-Platform and the IAT were available for testing to all members of the S-PARCS consortium. To optimize the design, content and usability, feedback from all test users was collected. This feedback, which is summarized in the following will now be used to revise the platform and then arrive at an optimized version of the e-Platform and the IAT. This optimized version will again be tested internally and afterwards made publically available.

The testing of the tool was performed in three steps:

- At first, the websites were tested internally by CIRCE. The goal of this step is to assure an intuitive interface and repair bugs that may occur.
- Afterwards, the websites were shared with the members of the consortium in order to receive their feedback, especially from the industrial parks.
- Finally, an updated beta version of the tools is published and final adjustments, as well as bug correction, will be done.

In order to follow a structured approach, the team members of S-PARCS were asked to firstly complete a brief questionnaire about their first experiences with using the S-PARCS Community platform and the IAT. This questionnaire is an add-on to the actual testing and focuses on user experience, overall opinions about layout, presentation and structure of the platform. It was implemented in Typeform© (www.typeform.com) and the invitation to fill out the survey was sent to the S-PARCS team via email.

The questions used to design the questionnaire follow Schöndorfer (2013)¹. This questionnaire does not aim at being representative and as also obviously biased as it has been answered by members of the consortium only. Therefore, no descriptive statistics are provided in the following.

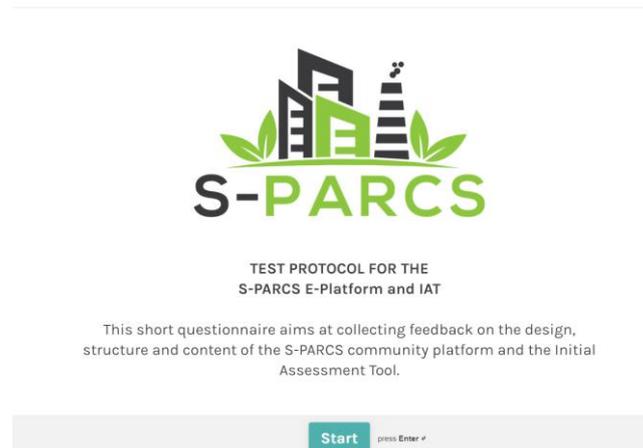


Figure 4-2: Starting page of the internal questionnaire

Several of the elements considered to be relevant according to Schöndorfer (2013) relate to technical aspects of the overall programming of the website and were not included in the questionnaire but are directly discussed in the following.

Secondly, all test users provided their additional inputs, ideas, critique etc. via email to the WP 3 leader.

The information and insights gained from this first round of feedback are summarized below in four categories:

- Content & Structure
- Navigation
- Design
- Interaction
- Other comments

4.1 Existing Content & Structure

The **overall quality of the content** of the platform, its **presentation** as well as the level of interest of the content received a high rating (average rating: 5 out of 6 points). The **comprehensibility** of the content is rated lower (average rating: 4 out of 6) which reflects the feedback from several partners (also discussed below), that finding the right pathway through the website is not fully straightforward and not always fully logical yet. In order to address this feedback, the WP 3 team has decided to revise the “How to Start” section, as well as to connect it in a more logical way with the IAT. Including an interactive guide to help users to go through

¹ Schöndorfer, Oliver, Zeichenschatz – Büro für visuelle Kommunikation. (2013) Web: <https://www.zeichenschatz.net/webdesign/analyse-einer-website-webdesign-beurteilen.html>. Accessed: 15th January 2020

the S-PARCS community and the IAT and understand the relation between them is also proposed.

Also, in relation to the content, is the question of accessibility; contents are intended to be barrier-free and designed according to the current technical standards so as to be usable on all types of devices. Further necessary improvements to the platform will be assessed as soon as the revised version is available.

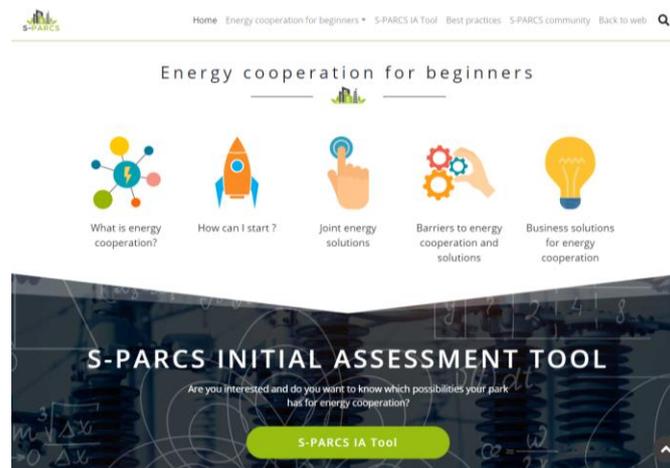


Figure 4-3: Design of open content

4.2 Navigation

Five different aspects were looked at to assess the quality of the navigation on the platform. Firstly, we asked whether the beta version user considered the **navigation** (main, sub, meta navigation, etc.) **clearly and logically structured**, which 90% of them did.

Additionally, all test users found the navigation **simple and easy** to use. Other factors relevant for making navigation as easy as possible were already implemented in the design stage of the platform: the navigation is always **visible or directly accessible** from all parts of the platform, access to the **start page** is provided directly from anywhere.

One open aspect is the **internal page search functionality** which will be provided in the final version of the tool to ease the search for specific information.

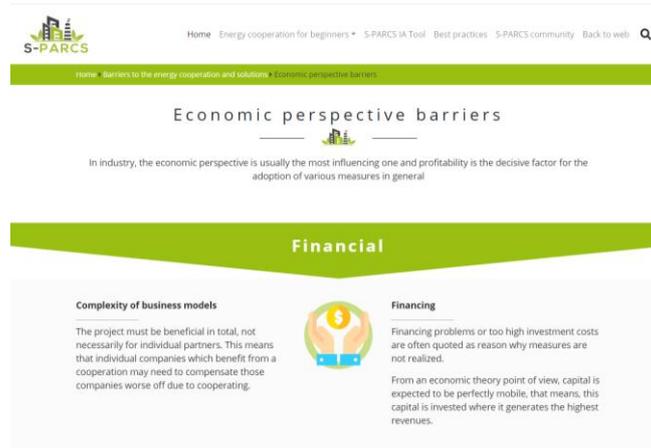


Figure 4-4: Example of navigation on the platform

An overall concern identified by the test users was making clearer which parts of the platform and especially of the IAT are available for park managers and which for companies (and other stakeholders). This aspect also relates to several other points of criticism, mainly about the **interlinkages between different parts** of the platform and the available pathways through the platform.

In order to address these aspects, as mentioned before an (interactive) **guide** will be included in order to make users understand the possible paths to use both platform and IAT, the How to Start section will be revised and more informative text will be provided in the login section and at other sections of the tool if deemed necessary after the next round of internal testing.



Figure 4-5: Starting page of the platform

4.3 Design

First off, the **look, feel & aesthetics** of the platform are highly important to attract users. All of the test users agreed that the current **design** is appealing and thematically appropriate. Also, the arrangement of elements on the platform is considered clear.

The overall **typography** is positively assessed. The overall design of the platform follows the “corporate identity” of S-PARCS (logo, posters, etc. produced so far) to create **recognition value**.

The S-PARCS e-Platform is designed using icons to guide the user from one section to another, as well as different illustrations and colours to provide an overall inviting, non-technical atmosphere. The information provided on the platform is designed to serve as a starting point for different types of stakeholders from the industrial sector, but showed also be inviting to a more general, interested public. In contrast to this, the IAT is designed in a more sombre, technical design as this part of the platform is solemnly addressed to specific and more specialized audience.

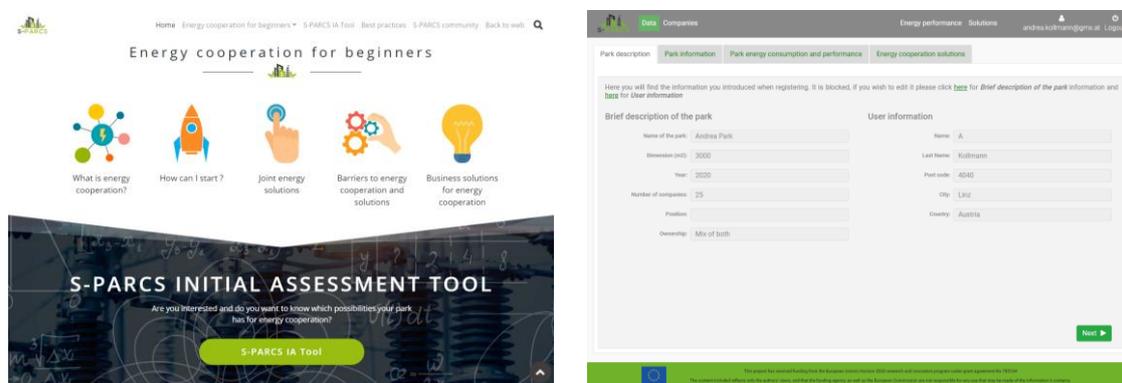


Figure 4-6: Example for the look & feel of the platform (left) and the IAT (right)

Based upon the feedback from the S-PARCS consortium no changes to the design of the platform and the IAT are necessary.

4.4 Interaction

The fourth category of an assessment of a website proposed by Schöndorfer (2013) are its **interaction qualities**. This relates to how the website operates and how it can be used. Elements related to these criteria are

- Is it always easy to find your way and to navigate through the different levels of the website? All test users answered this question with yes.
- Are **links** clearly marked and distinguishable from the rest of the content? 85% of test users answered this question with yes.
- Is the page loading fast enough? All test users answered this question with yes.

Two further elements are relevant for the assessment of the level of interaction provided by the tool. Firstly, whether there are enough starting points from which **actions** can be set. We consider this criteria fulfilled by the platform, users can easily switch between the platform and the tool, as well as between individual sections of the platform.

The second element is about the provision of contact points and how appealing they are. This aspect will be strengthened in the final version of the platform in order to give users direct contact points for their specific questions. In this sense a contact point through contact us for general assistance will be included (CIRCE will be responsible for the technical assistance)

and further contact points for specific topics will be included from the pool of experts represented in S-PARCS. Roles and responsibilities will be decided upon within the consortium.

4.5 Other Comments

Several other, smaller aspects of the current version of the platform were raised by the partners and will also be dealt with in the next version.

Webbrowsers: Firstly, the current version of the IAT only works with Google Chrome and Firefox. This will be dealt with in the next version of the platform in order to allow using the IAT with other relevant webbrowsers as well.

Additional Content: New descriptive on several topics will be included.

- The **introduction** will be revised in order to give a brief (non-technical) overview of all functionality of the platform and IAT to support companies and park to managers in the selection of actions and interesting sections.
- The **subsections** on barriers, solutions and business models will be given a brief **summary** in order to provide an overall view.
- A further suggestion that will be discussed in the consortium is the **integration of the description of instruments** to overcome the barriers to energy cooperation because some instruments may not be fully intuitive to newcomers. For this the results of the respective deliverables could be used. In order to not overload the platform with too much text, WP1, WP2, WP3 and WP4 leaders will decide together which texts to use and where to integrate them.
- The section on the business models for energy cooperation will be revised to better reflect the outcomes and descriptions provided in the related deliverable.
- A review of the sectors provided to choose from in the community section of the tool will be done to ensure no sectors are missed.

Registration: Currently there are some issues with the registration (where to register, how to change an existing registration) which will be dealt with in the next version.

5 Summary of results and next steps

Based upon the first internal testing using the procedure outlined above, the WP3 team has decided to focus on the following aspects of the platform until its finalization later this year:

- Revision of the „How to Start“ section to help users to find the most appropriate path through the information and services on the platform.
- Review of the accessibility of the website before making it publically available to ensure compliance with the goals of the European Union’s web accessibility goals (see <https://ec.europa.eu/digital-single-market/en/web-accessibility>).
- Ensuring that the internal page search functionality is easy to use and provides structured search results.
- Providing a guide for the user to support the user when navigating through the website.
- Providing more direct contact points on the platform and ensure that users know which contact is responsible for which topic.
- Finding a solution for the current issue that the IAT only works with Google Chrome and Firefox.
- Revising the introduction in order to give a brief (non-technical) overview of all functionality of the platform and IAT to support companies and park to managers in the selection of actions and interesting sections.
- Providing brief summaries in the subsections on barriers, solutions and business models.
- Check how an integration of the description of instruments to overcome the barriers to energy cooperation can be done, where on the platform it is most useful and how much text is appropriate.
- Revising the section on the business models for energy cooperation better reflect the outcomes and descriptions provided in the related deliverable.
- Reviewing and changing of the sectors provided to choose from in the community section of the tool.
- Making the registration process as easy as possible.