**ICT - BIOCHAIN**

**Deliverable 3.3.**

**Validation report of the platform prototype per each region-specific data model**

<table>
<thead>
<tr>
<th>Acronym:</th>
<th>ICT-BIOCHAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Nº:</td>
<td>79221</td>
</tr>
<tr>
<td>Start date:</td>
<td>1.6.2018</td>
</tr>
<tr>
<td>Duration:</td>
<td>24 months</td>
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<table>
<thead>
<tr>
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<th>D3.3</th>
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<tr>
<td>Deliverable title</td>
<td>Validation report of the platform prototype per each region-specific data model</td>
</tr>
<tr>
<td>Submission due date</td>
<td>M24 – May 2020</td>
</tr>
<tr>
<td>Actual submission date</td>
<td>29/05/2020</td>
</tr>
<tr>
<td>Work Package</td>
<td>WP3</td>
</tr>
<tr>
<td>WP Lead Beneficiary</td>
<td>STR</td>
</tr>
<tr>
<td>Dissemination Level</td>
<td>Public</td>
</tr>
<tr>
<td>Version</td>
<td>01</td>
</tr>
<tr>
<td>Authors</td>
<td>Gabriela Biel (STR), Johan Belfrage (STR), Timo Erler (IML)</td>
</tr>
</tbody>
</table>

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union’s Horizon 2020 research and innovation programme under grant agreement.
1. Executive Summary

The objective of this deliverable is to in the real environment test, evaluate and validate the first prototype of the platform ICT-BIOCHAIN platform for ICT, IoT and Industry 4.0 Technologies for Use in Sustainable Biomass Mobilisation. This is performed to ensure that maximum benefits can be obtained and that the platform is functional to the end users.

This deliverable report summarizes the findings of the validation of the ICT-BIOCHAIN platform as per the checklists of platform features controlled by the project team and the platform validation test as per the competency questions that was designed in the beginning of the project and answered by a test team that has not been involved in the development of the platform.

The key conclusions from the test results show that although the competency questions were challenging to answer for non-technical user with limited experience in both ICT and biobased manufacturing all critical elements of the platform function satisfactory. A few improvements such as hyperlinks and references were revealed that has been addressed immediately. The remaining feedback is of a nice to have nature and can be used to improve the platform in future versions. It was also found that all elements of the platform were user friendly on mobile devices.

The key proposed improvements that came from the test team and that can be implemented in the next version of the validated platform were mainly addressing improved clarity around the data on the platform such as in which supply chains ICT technologies have been or could be used, what is the state of the art and which technologies are still under development and when they are expected to available on the market.
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## 2. Acronyms and abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT</td>
<td>Internet Communication Technology</td>
</tr>
<tr>
<td>IoT</td>
<td>Internet of Things</td>
</tr>
<tr>
<td>IML</td>
<td>Fraunhofer Institute of Material Flow and Logistics</td>
</tr>
<tr>
<td>STR</td>
<td>University of Strathclyde</td>
</tr>
<tr>
<td>TT</td>
<td>Test Team</td>
</tr>
<tr>
<td>IBP</td>
<td>Implemented By Prototype</td>
</tr>
<tr>
<td>PCE</td>
<td>Platform is Capable of via Extension</td>
</tr>
<tr>
<td>PCI</td>
<td>Platform is Capable of via Implementation</td>
</tr>
</tbody>
</table>
3. Introduction

ICT-BIOCHAIN platform for ICT, IoT and Industry 4.0 Technologies for Use in Sustainable Biomass Mobilisation have been designed to share existing and emerging ICT, IoT and Industry 4.0 technologies for optimization of biomass supply chains. The first prototype of the platform has been developed and presented in Deliverable 3.2 - Platform Concept. To ensure that maximum benefits can be obtained and that the platform is functional to the end users, it is necessary to conduct an evaluation in the real environment.

The process consists of formulating and analyzing validation requirements, developing a test strategy, platform testing and determination of users’ acceptance. The focus is on the usability of the platform where actual outputs are compared with expected outputs. The crucial point is to achieve full conformance of the platform with needs and expectations of end users. It is important to remember that the user needs to be considered at all points of the evaluation process. Platform validation also allows to establish deviations from pre-defined parameters and to guide their improvement. Validation outcomes provide a range of benefits including increased reliability, maximized value of the platform to the user as well as time and cost savings via detection of errors at an early stage.

This report consists of the following sections. Part 4 describes the methods that were applied to assess and validate the platform. Parts 5.1-5.6 contain outcomes of the platform review and feedback which are further summarized in the conclusions section (part 6).

The following statements describe the general features that the platform should provide:

1) It is easy for the user to achieve their objectives through using the platform
2) It is easy for the user to become familiar with and competent in using the interface
3) It is easy for the user to recall the interface and how to use it on subsequent visits.

The main aim of the platform validation test is to check the functionality of each component of the platform prior to the publication to facilitate correction of potential errors and to ensure the best user experience is provided.
4. Methodology

Validation of the platform was carried out based on pre-defined requirements determined by the project partners. Black Box testing (specification based testing) The requirements were set to facilitate the evaluation of the platform from the perspective of end user. The list has been divided into sections to cover general features, data model section, ICT/IoT/Industry 4.0 section, wiki section, communication tool and mobile app. Each section contained a checklist table and a set of competency questions (closed yes/no answer questions) to support the platform prototype evaluation. Comments section was provided in case any issues have not been fully covered. Requirements and competency questions were being updated during the evaluation process where necessary.

The prototype was evaluated by following the checklist and by answering the competency questions (confirmation that the answer can be found on the platform). The platform was assessed by a Test Team (TT) which included 4 persons working in different administrative or technical roles within the bioeconomy. Evaluation was carried out from the end user’s point of view. Gathered outputs have been analysed and summarised into a list of improvements which should be further implemented when optimising the final platform.

When preparing validation requirements, the main focus was put on platform usability from the end user’s perspective. Ease of navigation, readability, full functionality, hierarchical structure of information and layout have been identified as key general measures (these are the initial factors having a direct influence on “user-friendliness” of a website).
Deliverable 3.3. Validation report of the platform prototype per each region-specific data model

Figure 1. Simplified flow diagram of steps taken by the TT to assess the platform prototype.
5. Platform validation

Data models and ICT/ IoT/ Industry 4.0 technologies sections have been made independent from each other on the platform. Requirements for these sections are dealing with specific features that the platform enables. Competency questions for these sections are crucial as they help determine whether the information is presented in an effective way to target users. It should be possible for the users to access information in several ways including browsing, searching by chosen keywords and comparing outputs (e.g. between two types of biomass available in a selected region). Checklists cover technical details that should be presented when accessing the information on either biomass or technologies, for example composition (biomass) or operational status (technologies). These are further translated into competency questions which aim to determine any gaps in the information provided on the platform.

The role of Wiki is to keep users up to date with the latest news about biomass and innovations in new technologies entering the market. This section also provides links to useful resources, case studies and contact points. Similarly, to data models and technologies sections, the users should be able to both search and browse through the resources. The effectiveness measure of Wiki is the ease of accessing all subsections (e.g. case studies, news) and links.

Communication tool is a useful feature for the users who have any queries or who want to get connected to other users (e.g. biomass suppliers or technology providers). The tool is serving as a forum for members who signed up to the platform but it also allows for one-time users to publish posts or to ask questions. To assess the effectiveness of the communication tool, a test thread was set up to which a post was added.

To increase convenience and to enable access to the platform from portable devices, a mobile version has been designed. The app should contain the same information as the desktop version of the website with the format adjusted to mobile devices. All parts should be fully functional and should not disadvantage the users in relation to the desktop version.

The checklists under section 5.1-6 have been checked and given a status acronym which are Implemented By Prototype (IBP), Platform is capable of via extension (PCE) and Platform is capable of via implementation (PCI).

The platform is hosted on the project website (https://ictbiochain.eu/) and the test team accessed the platform from there when validating the functionality of the final product by answering all the competency questions that were designed for each element of the platform.
### 5.1. General features

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform is easy to use and to navigate i.e. navigation does not compete with content for attention</td>
<td>IBP</td>
</tr>
<tr>
<td>All information is accessible and readable</td>
<td>IBP</td>
</tr>
<tr>
<td>Data is organised into logical hierarchy to minimise the number of steps required to access a piece of information</td>
<td>IBP</td>
</tr>
<tr>
<td>Layout and information contained in each section of the platform are presented in a consistent way</td>
<td>IBP</td>
</tr>
<tr>
<td>All hyperlinks are clickable and they direct the user to the correct site</td>
<td>IBP</td>
</tr>
<tr>
<td>It is easy to get in touch with the regional DiH from each webpage view</td>
<td>IBP</td>
</tr>
<tr>
<td>The platform should contain:</td>
<td></td>
</tr>
<tr>
<td>- Prominent and informative section titles and subtitles</td>
<td>IBP</td>
</tr>
<tr>
<td>- Project title, logo, copyrights</td>
<td>IBP</td>
</tr>
<tr>
<td>- List of partners</td>
<td>IBP</td>
</tr>
<tr>
<td>- High-level introduction explaining the purpose of the platform and who it was designed for</td>
<td>IBP</td>
</tr>
<tr>
<td>- Last revised date</td>
<td>PCI</td>
</tr>
<tr>
<td>- Contact information</td>
<td>IBP</td>
</tr>
<tr>
<td>- Link to ICT-BIOCHAIN project site</td>
<td>IBP</td>
</tr>
<tr>
<td>- Links to social media of the project (LinkedIn, Twitter)</td>
<td>IBP</td>
</tr>
<tr>
<td>Appropriate contrasting colour schemes are used in the platform design so that information is easy to read</td>
<td>IBP</td>
</tr>
<tr>
<td>All the information should be free of spelling, grammar, and punctuation mistakes</td>
<td>IBP</td>
</tr>
<tr>
<td>It is easy to recall user’s interface and how to use it on subsequent visits to the platform</td>
<td>IBP</td>
</tr>
</tbody>
</table>

Competency questions:

- Can I navigate through different parts of the platform in a hassle-free way?
- Can I access other websites under hyperlinks in the platform?
- Can I navigate through the platform quicker/more efficiently when I revisit the webpage?
5.2. Data models

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search tool is fully functional                                         IBP</td>
<td></td>
</tr>
<tr>
<td>Information is presented in a directly usable format which does not require further decoding by the user</td>
<td>IBP</td>
</tr>
<tr>
<td>It is possible to search for data by filtering (&quot;search&quot; function):      IBP</td>
<td></td>
</tr>
<tr>
<td>- Value chain                                                            IBP</td>
<td></td>
</tr>
<tr>
<td>- Specific material within a value chain                                 PCI</td>
<td></td>
</tr>
<tr>
<td>- Composition, e.g. protein content                                      PCI</td>
<td></td>
</tr>
<tr>
<td>- Regional availability                                                  IBP</td>
<td></td>
</tr>
<tr>
<td>- Price range                                                            PCI</td>
<td></td>
</tr>
<tr>
<td>- Quantity of material arisings                                          PCI</td>
<td></td>
</tr>
<tr>
<td>- Location (Andalusian/Irish MDR and specific counties)                  IBP</td>
<td></td>
</tr>
<tr>
<td>Generated outputs are fully informative and easy to interpret; the user is provided with all the information regarding a given biomass value chain:</td>
<td>IBP</td>
</tr>
<tr>
<td>- Composition e.g. protein content                                      PCI</td>
<td></td>
</tr>
<tr>
<td>- Regional availability                                                  IBP</td>
<td></td>
</tr>
<tr>
<td>- Location (Andalusian/Irish MDR and specific counties)                  IBP</td>
<td></td>
</tr>
<tr>
<td>- Quantity of material arisings                                          IBP</td>
<td></td>
</tr>
<tr>
<td>- Fate                                                                   PCI</td>
<td></td>
</tr>
<tr>
<td>- Unused material                                                        PCI</td>
<td></td>
</tr>
<tr>
<td>- Price range                                                            PCI</td>
<td></td>
</tr>
<tr>
<td>- Freight                                                                PCI</td>
<td></td>
</tr>
<tr>
<td>It is possible to view outputs of all available bioresources in a tabular/list format i.e. users are able to access the complete dataset (&quot;browse&quot; function)</td>
<td>PCI</td>
</tr>
<tr>
<td>It is possible to generate outputs including selected data in a tabular format i.e. users are able to select the relevant information that they are interested in</td>
<td>PCI</td>
</tr>
<tr>
<td>It is possible to compare outputs for specified bioresources (&quot;compare&quot; function)</td>
<td>PCI</td>
</tr>
</tbody>
</table>

Competency questions:

• Can I filter biomass value chains by selected criteria?
• Can I compare different biomass value chains between one another?
• What is the composition/physico-chemical properties of a specific material?
  o Comment: Not implemented yet
• Can I find how much of a specific material is produced in a region I am interested in?
• Can I find what the cost is of a specific material?
  o Comment: Not implemented yet
• Can I find which materials are produced in which regions?
• Can I access the most recent information on biomass in different region?
• Can I find what the fates and uses are of a specific material in my region?
  o Comment: Not implemented yet
• Can I find how much of the available biomass is currently not being used in my region?
  o Comment: Not implemented yet
## 5.3. ICT/IoT/Industry 4.0 technologies

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search tool is fully functional</td>
<td>IBP</td>
</tr>
<tr>
<td>Specific technologies with the highest potential for improving supply chain efficiency (at a given supply chain stage) and sustainability are pointed out</td>
<td>IBP</td>
</tr>
<tr>
<td>It is possible to search for a particular technology by filtering (&quot;search&quot; function):</td>
<td>IBP</td>
</tr>
<tr>
<td>- Name</td>
<td>IBP</td>
</tr>
<tr>
<td>- Type</td>
<td>IBP</td>
</tr>
<tr>
<td>- Technology provider</td>
<td>IBP</td>
</tr>
<tr>
<td>- Country</td>
<td>IBP</td>
</tr>
<tr>
<td>- Availability in Irish/Andalusian MDR</td>
<td>IBP</td>
</tr>
<tr>
<td>- Keywords</td>
<td>IBP</td>
</tr>
<tr>
<td>- Supply chain stage</td>
<td>IBP</td>
</tr>
<tr>
<td>Generated outputs are fully informative and easy to interpret; the user is provided with all the information regarding a given ICT/IoT/Industry 4.0 tool:</td>
<td>IBP</td>
</tr>
<tr>
<td>- Name</td>
<td>IBP</td>
</tr>
<tr>
<td>- Type</td>
<td>IBP</td>
</tr>
<tr>
<td>- Technology provider</td>
<td>IBP</td>
</tr>
<tr>
<td>- Country</td>
<td>IBP</td>
</tr>
<tr>
<td>- Availability in Irish/Andalusian MDR</td>
<td>IBP</td>
</tr>
<tr>
<td>- Operational status</td>
<td>IBP</td>
</tr>
<tr>
<td>- Technology description (including potential application and benefits)</td>
<td>IBP</td>
</tr>
<tr>
<td>- Process steps</td>
<td>IBP</td>
</tr>
<tr>
<td>- Environmental impact</td>
<td>IBP</td>
</tr>
<tr>
<td>- Supply chain stage/area of application</td>
<td>IBP</td>
</tr>
<tr>
<td>- Cost</td>
<td>IBP</td>
</tr>
<tr>
<td>- Link to provider’s site/publication/contact page</td>
<td>IBP</td>
</tr>
<tr>
<td>- Link to a case study (if available)</td>
<td>IBP</td>
</tr>
</tbody>
</table>
Competency questions:

- Can I find what ICT solutions are being used in a specific country?
- Can I find which ICT solutions are implemented in the region regarding biomass?
- Can I filter ICT technologies by type of biomass?
- Can I find what the benefits and costs are of a specific ICT technology?
- Can I find at which level of implementation a specific ICT technology is right now?
- Can I find who are ICT technology suppliers and what is their field of expertise?
- Can I find which ICT technologies apply to a specific supply chain?
- Can I find which ICT technologies are current state of the art?
- Can I find what is the necessary knowledge about available innovative technologies that can be used?
- Can I find what are the outcomes and benefits of the technology used in biomass supply chain?
- Can I find which innovative tools are available in each region?
- Can I find which projects and developments are currently running?
- Can I find who is the contact person for a specific ICT technology?
- Can I find when an ICT Technology that is currently in development approximately go into service?
5.4. Wiki

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>The tool is fully functional</td>
<td>IBP</td>
</tr>
<tr>
<td>The following sections are present:</td>
<td></td>
</tr>
<tr>
<td>- Online training</td>
<td>IBP</td>
</tr>
<tr>
<td>- Public material (e.g. news and updates on projects)</td>
<td>IBP</td>
</tr>
<tr>
<td>- Regional contact points/persons</td>
<td>IBP</td>
</tr>
<tr>
<td>- Definitions</td>
<td>IBP</td>
</tr>
<tr>
<td>- Information on biomass supply chains + current challenges</td>
<td>IBP</td>
</tr>
<tr>
<td>- Tips for technology implementation</td>
<td>IBP</td>
</tr>
<tr>
<td>- Case studies</td>
<td>IBP</td>
</tr>
<tr>
<td>It is possible to search for articles using the search tool based on criteria such as publication date or subject (&quot;search&quot; function)</td>
<td>IBP</td>
</tr>
<tr>
<td>It is possible to explore the content of different sections (&quot;browse&quot; function)</td>
<td>IBP</td>
</tr>
<tr>
<td>There is a section where the user can leave a comment</td>
<td>PCE</td>
</tr>
<tr>
<td>There is a hyperlink in text which will take the user to the relevant wiki section</td>
<td>IBP</td>
</tr>
</tbody>
</table>

Competency questions:

Comment: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answerable according to lack of material.

- Can I find what are available training opportunities?
- Can I find who I can contact to receive support/ more information and to discuss my supply chain?
- Can I find what are the most recent updates on relevant projects and the news about biomass supply chains?
- Can I find how I can implement any ICT technology into my supply chain?
- Can I find what are the farmers/ enterprises/ biomass owners' needs?
- Can I find how specific technologies were successfully applied to date?
- Can I filter through the available content?
- Can I leave my comment under a post/ article?
- Comment: Currently not activated on the website. Using a contact mechanism is preferred
5.5. Communication tool

<table>
<thead>
<tr>
<th>Communication tool</th>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The tool is fully functional</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>It is possible to register and take part in conversations</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>It is possible to send a message as an anonymous/one-time user</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>The area is divided into threads to allow the user find and contribute to the relevant conversation</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>It is possible to add hashtags and tag other users in conversations</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>It is possible to share photos/documents</td>
<td>PCE</td>
</tr>
<tr>
<td></td>
<td>It is possible to search conversations by thread subject/keywords</td>
<td>PCE</td>
</tr>
</tbody>
</table>

Competency questions:

Comment: Social networking tools are possible with plugins for wordpress. They are currently not implemented on the website.

- Can I communicate with other farmers/ biomass owners/ technology providers etc.?
- Can I find a thread/ subject which interests me by filtering?
- Can I share files with other users?
- Can I create an account to participate in conversations?
- Can I leave a message anonymously or as a one-time user?
## 5.6. Mobile app

<table>
<thead>
<tr>
<th>Mobile app</th>
<th>Criteria</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The tool is fully functional</td>
<td>IBP</td>
</tr>
<tr>
<td></td>
<td>All information contained in the desktop version are available and accessible (mobile compatibility)</td>
<td>IBP</td>
</tr>
<tr>
<td></td>
<td>The app is easy to use and to navigate</td>
<td>IBP</td>
</tr>
</tbody>
</table>

### Competency questions:

- Can I access all the information from the platform on my phone?
6. Conclusions

The test results (Appendix 1 and 2) show that all critical elements of the platform functions as required. However, the responses from the 4 testers indicate that more experiences professionals found it easier to find the information sought in the competency questions, which might indicate that the platform is not intuitive and easy to access for users with a non-technical background or users that are unfamiliar with the fields of ICT and Bioeconomy. A few clear suggestions of improvements were found in the tester feedback. Points 1 and 2 will be addressed directly whereas the remaining points could be considered for the future versions of the fully implemented platform.

1. Several testers found hyperlinks that did not work (see tester responses)
2. The site could benefit from referencing the age of the data used in the platform
3. The links between ICT technologies and supply chains might need to be clearer. For example, to which supply chains have the technologies been applied to and where could it potentially be applied
4. The testers could find references to which technologies are considered state of the art. If deemed important this could be added to the platform.
5. It might also be desirable to indicate which technologies are still under development and when they will come into service.

All users were able to successfully access material via mobile devices and the validation test reveal that the platform meets all the critical requirements of functionality and usability.
7. References

The following references were used as inspiration for the development of the validation procedure.

https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=772943

http://www.professionalqa.com/software-validation

https://www.interaction-design.org/literature/article/usability-a-part-of-the-user-experience
## 8. Appendix 1 – Validation matrix

<table>
<thead>
<tr>
<th>Competency questions</th>
<th>Tester 1</th>
<th>Tester 2</th>
<th>Tester 3</th>
<th>Tester 4</th>
<th>Combined assessment</th>
<th>Comment</th>
<th>Suggested improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General features</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can it navigate through different parts of the platform in a hozierly way?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I access other websites under hyperlinks in the platform?</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>Yes</td>
<td>Pass</td>
<td>Some hyperlink needs to be updated</td>
<td>Update hyperlink that do not work</td>
</tr>
<tr>
<td>Can I track the platform publicly when it is not the web-based?</td>
<td>Maybe</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td><strong>Data models</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can the database table chains be presented?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Yes</td>
<td>Pass</td>
<td>Vector icon located where to look</td>
<td>Vector icon located where to look</td>
</tr>
<tr>
<td>Can I compare different datasets on the platform?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Yes</td>
<td>Pass</td>
<td>Vector icon located where to look</td>
<td>Vector icon located where to look</td>
</tr>
<tr>
<td>What is the comparison of the physical chemical properties of a specific material?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Yes</td>
<td>Pass</td>
<td>Not implemented yet</td>
<td>Not implemented yet</td>
</tr>
<tr>
<td>Can I find how much a specific material is presented in a region?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Yes</td>
<td>Pass</td>
<td>Not implemented yet</td>
<td>Not implemented yet</td>
</tr>
<tr>
<td>Can I understand the cost of a specific material?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Yes</td>
<td>Pass</td>
<td>Not implemented yet</td>
<td>Not implemented yet</td>
</tr>
<tr>
<td>Can I find which materials are produced in which regions?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not understood</td>
<td>Maybe</td>
<td>Not answered</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I access the most recent information on biomass in different region?</td>
<td>Yes</td>
<td>Maybe</td>
<td>Not answered</td>
<td>No</td>
<td>Not passed</td>
<td>No reference to how recent the data is</td>
<td></td>
</tr>
<tr>
<td>Can I find what the types and costs of a specific material in my region?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Pass</td>
<td>Yes</td>
<td>Not implemented yet</td>
</tr>
<tr>
<td>Can I find how much of the available biomass is currently not being used in my region?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>Yes</td>
<td>Not implemented yet</td>
</tr>
<tr>
<td><strong>ICT/IT Infrastructre &amp; technologies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can I find what ICT solutions and being used in a specific country?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find which ICT solutions are implemented in the region regarding biomass?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I filter ICT technologies by type of biomass?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find what the benefits and costs are of a specific ICT technology?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I filter at which level of implementation a specific ICT technology is right now?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find which ICT technologies apply to a specific supply chain?</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find which ICT technologies are current state of the art?</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find what the necessary knowledge about available innovative technologies that can be used?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find who are the costs and benefits of the technology used in biomass supply chain?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find which innovative tools are available to each region?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find what projects and developments are currently running?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find who the contact person for a specific ICT technology?</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find when an ICT Technology that is currently in development approximately goes into service?</td>
<td>Yes</td>
<td>Maybe</td>
<td>No</td>
<td>Yes</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td><strong>Voids</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voids: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answered according to the level of material.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find what is available to the project?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find who can contact to receive a specific piece of information and to discuss my difficulty?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find what are the most recent updates on relevant projects and the news about biomass supply chain?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find how I can implement any ICT technology into my supply chain?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find which ICT technologies are currently not available in each region?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find how specific technologies were successfully applied to date?</td>
<td>Yes</td>
<td>No</td>
<td>Not answered</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I filter through the available center?</td>
<td>Yes</td>
<td>No</td>
<td>Not answered</td>
<td>No</td>
<td>Not passed</td>
<td>No</td>
<td>Not passed</td>
</tr>
<tr>
<td>Can I find my comments under a post/article?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td><strong>Communication tool</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication: Social networking tools are possible with plug ins for wordpress. They are currently not implemented on the website.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I communicate with other farmers/business owners/technology providers etc.?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I find a threat analysis which stimulates my thinking?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I receive a file with other content?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I remove an account to be participant in conversations?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Can I receive a message anonymously as a one time user?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td><strong>Mobile app</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can I access all the information from the platform on my phone?</td>
<td>Yes</td>
<td>Yes</td>
<td>Not answered</td>
<td>Yes</td>
<td>Pass</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

**Deliverable 3.3. Validation report of the platform prototype per each region-specific data model**

**Page 21 of 36**
9. Appendix 2 – Tester responses

Guide for the Test team

The below questionnaire is part of the validation of the ICT-BIOCHAIN platform that has been developed in the BBI-JU H2020 project ICT TOOLS IN EFFICIENT BIOMASS SUPPLY CHAINS FOR SUSTAINABLE CHEMICAL PRODUCTION.

Please familiarize yourself with the platform and subsequently evaluate the functionality of the platform using the below defined competency questions.

The platform form can be found at https://ictbiochain.eu/

The validation procedure can be described by the steps illustrated in the figure below.

![Diagram of validation procedure]

The following statements describe the general features that the platform should provide:

1) It is easy for the user to achieve their objectives through using the platform
2) It is easy for the user to become familiar with and competent in using the interface
3) It is easy for the user to recall the interface and how to use it on subsequent visits.
Tester 1 (Senior Business Developer)

General features

Competency questions:

Comment: The platform is hosted on the project website (https://ictbiochain.eu/).

- Can I navigate through different parts of the platform in a hassle-free way?
  - YES, very user friendly
- Can I access other websites under hyperlinks in the platform?
  - YES, the only one I noticed didn’t work was the Latschbaccher one
- Can I navigate through the platform quicker/more efficiently when I revisit the webpage?
  - I am not sure it made much difference. The publications page took longest to load but not overly so.

Data models

Competency questions:

- Can I filter biomass value chains by selected criteria?
  - YES
- Can I compare different biomass value chains between one another?
  - Yes, I can compare value chains across areas within each region and compare value chains against each other
- What is the composition/physico-chemical properties of a specific material?
  - Comment: Not implemented yet
- Can I find how much of a specific material is produced in a region I am interested in?
  - Yes, arisings are clear on the graphs by hovering over the material of interest
- Can I find what the cost is of a specific material?
  - Comment: Not implemented yet
- Can I find which materials are produced in which regions?
  - YES
- Can I access the most recent information on biomass in different region?
  - YES, (presuming tables are up to date?)
- Can I find what the fates and uses are of a specific material in my region?
  - Comment: Not implemented yet
- Can I find how much of the available biomass is currently not being used in my region?
  - Comment: Not implemented yet
ICT/IoT/Industry 4.0 technologies

Competency questions:

- Can I find what ICT solutions are being used in a specific country?
  - YES
- Can I find which ICT solutions are implemented in the region regarding biomass?
  - YES
- Can I filter ICT technologies by type of biomass?
  - YES (but not for overall value chain unless ICT option is selected from the pull down menu)
- Can I find what the benefits and costs are of a specific ICT technology?
  - YES, by clicking on the links benefits/advantages are clearly outlined
- Can I find at which level of implementation a specific ICT technology is right now?
  - YES
- Can I find who are ICT technology suppliers and what is their field of expertise?
  - YES
- Can I find which ICT technologies apply to a specific supply chain?
  - YES, as long as there is a selection in the sub-sector field
- Can I find which ICT technologies are current state of the art?
  - YES, filter for TRL?
- Can I find what is the necessary knowledge about available innovative technologies that can be used?
  - I think yes, this would be by clicking on links
- Can I find what are the outcomes and benefits of the technology used in biomass supply chain?
  - YES, by clicking on the link
- Can I find which innovative tools are available in each region?
  - YES
- Can I find which projects and developments are currently running?
  - YES, by clicking links?
- Can I find who is the contact person for a specific ICT technology?
  - YES
- Can I find when an ICT Technology that is currently in development approximately go into service?
  - Again, probably need to click on link?
Wiki
Competency questions:
Comment: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answerable according to lack of material.

- Can I find what are available training opportunities?
  - YES
- Can I find who I can contact to receive support/ more information and to discuss my supply chain?
  - YES
- Can I find what are the most recent updates on relevant projects and the news about biomass supply chains?
  - YES
- Can I find how I can implement any ICT technology into my supply chain?
  - YES
- Can I find what are the farmers/ enterprises/ biomass owners' needs?
  - NOT SURE
- Can I find how specific technologies were successfully applied to date?
  - YES, through news and publications
- Can I filter through the available content?
  - YES
- Can I leave my comment under a post/ article?
  - YES
  
  Comment: Currently not activated on the website. Using a contact mechanism is preferred

Communication tool

Competency questions:
Comment: Social networking tools are possible with plugins for wordpress. They are currently not implemented on the website.

- Can I communicate with other farmers/ biomass owners/ technology providers etc.?
- Can I find a thread/ subject which interests me by filtering?
- Can I share files with other users?
- Can I create an account to participate in conversations?
- Can I leave a message anonymously or as a one-time user?
Mobile app

Competency questions:

- Can I access all the information from the platform on my phone?
  - YES
Tester 2 (Experienced Scientist)

General features

Comment: The platform is hosted on the project website (https://ictbiochain.eu/).

- Can I navigate through different parts of the platform in a hassle-free way?
  - Yes
- Can I access other websites under hyperlinks in the platform?
  - Links in consortium all take me to their websites
- Can I navigate through the platform quicker/more efficiently when I revisit the webpage?
  - Yes

Data models

- Can I filter biomass value chains by selected criteria?
  - Yes
- Can I compare different biomass value chains between one another?
  - Cannot compare horticulture between two regions i.e. Ireland and Andalusia but not sure if that is required.
- What is the composition/ physico-chemical properties of a specific material?
  - Comment: Not implemented yet
- Can I find how much of a specific material is produced in a region I am interested in?
  - Yes however when I hover over the very left bar in the graph the text is cut off. Same for the key on the right eg Andalusia horticulture
- Can in find what the cost is of a specific material?
  - Comment: Not implemented yet
- Can in find which materials are produced in which regions?
  - Yes but only for either Andalusia or Ireland at one time not both.
- Can I access the most recent information on biomass in different region?
  - Unsure how I know how recent the data is
- Can I find what the fates and uses are of a specific material in my region?
  - Comment: Not implemented yet
- Can I find how much of the available biomass is currently not being used in my region?
  - Comment: Not implemented yet

ICT/IoT/Industry 4.0 technologies

- Can I find what ICT solutions are being used in a specific country?
  - Yes
- Can I find which ICT solutions are implemented in the region regarding biomass?
  - Using the search bar I can but this is unforgiving. When I search olives instead of olive I get no hits. When I have selected something from the dropdown
menu it is hard to change as when you click again the drop down menu only has the current option

- Can I filter ICT technologies by type of biomass?
  - Yes see above.
- Can I find what the benefits and costs are of a specific ICT technology?
  - Yes some of these pages could do with better formatting to make them easier to read e.g. https://ictbiochain.eu/platform/ict-solution-detail/
- Can I find at which level of implementation a specific ICT technology is right now?
  - Yes I had to google what TRL stood for but many people won't bother.
- Can I find who are ICT technology suppliers and what is their field of expertise?
  - I can see the supplier but not sure on their area of expertise.
- Can I find which ICT technologies apply to a specific supply chain?
  - Unsure
- Can I find which ICT technologies are current state of the art?
  - Yes through the TRL section.
- Can I find what is the necessary knowledge about available innovative technologies that can be used?
  - Yes
- Can I find what are the outcomes and benefits of the technology used in biomass supply chain?
  - Not clearly
- Can I find which innovative tools are available in each region?
  - Yes
- Can I find which projects and developments are currently running?
  - I can see the TRL but unsure what that translates into in real life.
- Can I find who is the contact person for a specific ICT technology?
  - Yes
- Can I find when an ICT Technology that is currently in development approximately go into service?
  - Again lack of understanding of TRL makes this difficult.

Wiki

Comment: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answerable according to lack of material.

- Can I find what are available training opportunities?
  - I can find the e learning
- Can I find who I can contact to receive support/ more information and to discuss my supply chain?
  - Yes
- Can I find what are the most recent updates on relevant projects and the news about biomass supply chains?
o Yes however news page is not very user friendly. Can you make it small news headlines that you can click for the whole story. People will only scroll so far so when they are this big they will only see the top 2 headlines. If you can make it boxes in rows they will scan much more. Same for the publications area.

- Can I find how I can implement any ICT technology into my supply chain?
  o Yes I believe I can see the steps to implement it under each specific technology

- Can I find what are the farmers/ enterprises/ biomass owners' needs?
  o No

- Can I find how specific technologies were successfully applied to date?
  o No

- Can I filter through the available content?
  o Unsure what is meant by this

- Can I leave my comment under a post/ article?
  o Comment: Currently not activated on the website. Using a contact mechanism is preferred

**Communication tool**

Competency questions:

Comment: Social networking tools are possible with plugins for wordpress. They are currently not implemented on the website.

- Can I communicate with other farmers/ biomass owners/ technology providers etc.?
- Can I find a thread/ subject which interests me by filtering?
- Can I share files with other users?
- Can I create an account to participate in conversations?
- Can I leave a message anonymously or as a one-time user?

**Mobile app**

Competency questions:

- Can I access all the information from the platform on my phone?
  o Yes very easily and it has all the functionality of the main site.
Tester 3 (Non-technical/administrative staff)

General features

- Can I navigate through different parts of the platform in a hassle-free way?
  - Yes

- Can I access other websites under hyperlinks in the platform?
  - Yes, the email address on the Contact page isn’t hyperlinked like the email address at the top of the webpage. But that may be on purpose.
  - The video for the e-learning video Module 1 – Webinar: Opportunities for ICT in the Biomass sector starts quite abruptly on youtube (no intro) but I assume it’s because the first part wasn’t recorded?
  - In the Platform dropdown, in ICT solutions, there are a few webpages that show ‘page not found’
    - in ‘WinforstPro’
    - In Signumat
    - In Holz V6
      - http://www.haugensteiner.at/index.html
      - https://www.haugensteiner.at/kontakt/kontaktformular/
    - In Precision Wine
      - http://precision.wine/
    - In Olivacoin
      - http://olivacoin.com/
    - Freshbox – link is broken

  - Can I navigate through the platform quicker/more efficiently when I revisit the webpage?
    - Yes

Data models

Competency questions:

- Can I filter biomass value chains by selected criteria?
  - Is this the ICT Solutions section with the filters? If it si then yes.
- Can I compare different biomass value chains between one another?
ICT/IoT/Industry 4.0 technologies

Competency questions:

- Can I find what ICT solutions are being used in a specific country?
  - Yes
- Can I find which ICT solutions are implemented in the region regarding biomass?
  - Yes if you search by the word biomass
- Can I filter ICT technologies by type of biomass?
  - Yes
- Can I find what the benefits and costs are of a specific ICT technology?
  - I do not know
- Can I find at which level of implementation a specific ICT technology is right now?
  - Yes using the TRL?
- Can I find who are ICT technology suppliers and what is their field of expertise?
  - Yes using the search function?
- Can I find which ICT technologies apply to a specific supply chain?
  - I'm not sure
- Can I find which ICT technologies are current state of the art?
  - I'm not sure
- Can I find what is the necessary knowledge about available innovative technologies that can be used?
  - I do not know
- Can I find what are the outcomes and benefits of the technology used in biomass supply chain?
  - I do not know
Can I find which innovative tools are available in each region?
  - Yes through the search?

Can I find which projects and developments are currently running?
  - Yes through the search?
  - Maybe this should be more obvious?

Can I find who is the contact person for a specific ICT technology?
  - Yes there is a contact link for most ICT solutions

Can I find when an ICT Technology that is currently in development approximately go into service?
  - I do not know

Wiki

Competency questions:

Comment: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answerable according to lack of material.

- Can I find what are available training opportunities?
  - Yes in the News section

- Can I find who I can contact to receive support/ more information and to discuss my supply chain?
  - Yes there is a Contact section

- Can I find what are the most recent updates on relevant projects and the news about biomass supply chains?
  - Yes in the news section and in the publications page.

- Can I find how I can implement any ICT technology into my supply chain?
- Can I find what are the farmers/ enterprises/ biomass owners' needs?
- Can I find how specific technologies were successfully applied to date?
- Can I filter through the available content?
- Can I leave my comment under a post/ article?
  - Comment: Currently not activated on the website. Using a contact mechanism is preferred

Communication tool

Comment: Social networking tools are possible with plugins for wordpress. They are currently not implemented on the website.

- Can I communicate with other farmers/ biomass owners/ technology providers etc.?
- Can I find a thread/ subject which interests me by filtering?
- Can I share files with other users?
- Can I create an account to participate in conversations?
- Can I leave a message anonymously or as a one-time user?
Mobile app

- Can I access all the information from the platform on my phone?
Tester 4 (Entry level Scientist)

General features

Competency questions:

Comment: The platform is hosted on the project website (https://ictbiochain.eu/).

- Can I navigate through different parts of the platform in a hassle-free way?
  - Yes
- Can I access other websites under hyperlinks in the platform?
  - Yes
- Can I navigate through the platform quicker/more efficiently when I revisit the webpage?
  - Yes

Data models

Competency questions:

- Can I filter biomass value chains by selected criteria?
  - Yes
- Can I compare different biomass value chains between one another?
  - Yes
- What is the composition/physico-chemical properties of a specific material?
  - Comment: Not implemented yet
- Can I find how much of a specific material is produced in a region I am interested in?
  - Yes – took me a minute to find the hover over feature for specific material data but I like this feature. Perhaps adding a note about it would make it clearer?
- Can I find what the cost is of a specific material?
  - Comment: Not implemented yet
- Can I find which materials are produced in which regions?
  - Yes
- Can I access the most recent information on biomass in different region?
  - No – I cannot see any date reference for the data.
- Can I find what the fates and uses are of a specific material in my region?
  - Comment: Not implemented yet
- Can I find how much of the available biomass is currently not being used in my region?
  - Comment: Not implemented yet
ICT/IoT/Industry 4.0 technologies

Competency questions:

- Can I find what ICT solutions are being used in a specific country?
  - Yes — although I notice on my screen the country dropdown menu is off screen slightly making it difficult to read.

- Can I find which ICT solutions are implemented in the region regarding biomass?
  - Yes — although I noticed if I entered an item into the search bar and then a filter for country, the country filter didn’t work, for example the second result was for country: Ireland when I entered a filter for Spain.

- Can I filter ICT technologies by type of biomass?
  - Yes

- Can I find what the benefits and costs are of a specific ICT technology?
  - Yes

- Can I find at which level of implementation a specific ICT technology is right now?
  - Yes

- Can I find who are ICT technology suppliers and what is their field of expertise?
  - Yes

- Can I find which ICT technologies apply to a specific supply chain?
  - No

- Can I find which ICT technologies are current state of the art?
  - No

- Can I find what is the necessary knowledge about available innovative technologies that can be used?
  - Yes

- Can I find what are the outcomes and benefits of the technology used in biomass supply chain?
  - Yes

- Can I find which innovative tools are available in each region?
  - Yes

- Can I find which projects and developments are currently running?
  - No — maybe add a filter for this

- Can I find who is the contact person for a specific ICT technology?
  - Yes

- Can I find when an ICT Technology that is currently in development approximately go into service?
  - No
Wiki

Competency questions:

Comment: The platform prototype is hosted on the project website. The project results are presented on the website. Not every question is answerable according to lack of material.

- Can I find what are available training opportunities?
  - Yes
- Can I find who I can contact to receive support/ more information and to discuss my supply chain?
  - Yes
- Can I find what are the most recent updates on relevant projects and the news about biomass supply chains?
  - Yes – although news story dates could be clearer
- Can I find how I can implement any ICT technology into my supply chain?
  - Yes
- Can I find what are the farmers/ enterprises/ biomass owners' needs?
  - No
- Can I find how specific technologies were successfully applied to date?
  - No – from what I can see, most of the technologies relate to potential applications and there isn’t a clear filter for this
- Can I filter through the available content?
  - No – the only filter appears to be on the ICT solutions page
- Can I leave my comment under a post/ article?
  - Comment: Currently not activated on the website. Using a contact mechanism is preferred

Communication tool

Competency questions:

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Mobile app

- Can I access all the information from the platform on my phone?
  - Yes – looks good on the phone.