Virtual test bed and collaboration tool

Del. 4.2

Type: Report, Title: Virtual test bed and collaboration tool

Document Summary

Deliverable Title: **Virtual test bed and collaboration tool**

Version: **1.0**

Deliverable Lead: **AGENSO**

Related Work package: **4**

Author(s): **Michail Kaminiaris and Zisis Tsiropoulos (AGENSO)**

Contributor(s): -

Communication level: **Public report**

Project Number: **101000496**

Grant Agreement Number: **101000496**

Programme: **AgroFossilFree - Strategies and technologies to achieve a European Fossil-energy-free agriculture**

Start date of Project: **1st October 2020**

Duration: **36 months**

Project coordinator: **Thanos Balafoutis - CERTH**

Abstract

AgroFossilFree project's objective is to create a framework under which critical stakeholders will cooperate to evaluate and promote currently available fossil-energy-free strategies and technologies (FEFTS) in EU agriculture to diminish in the short term and eliminate in the long run fossil fuels use in any farming process from cradle to farm gate, while maintaining yield and quality of the end-product. In the framework of WP4 of the project, an online collaboration tool was developed by AGENSO. The aim of the tool was to enable all FEFTS to be presented in a clear and attractive way, using the most relevant information. The aim of the current deliverable is to present the way that FEFTS are displayed in AgEnergy platform, depending on the different FEFTS information types, aiming to simplify knowledge diffusion.

Contents

List of Figures

1. AgEnergy platform

In the context of Task 4.1 and 4.2 of the project, a permanent networking facility has been designed and developed. This tool/platform operates as a web-based platform for boosting the networking potential of relevant communities. The platform is freely accessible in https://platform.agrofossilfree.eu/ for all interested stakeholders and end-users.

The platform's functionalities and key features, as well as its content have been described in detail in D4.1 "Networking facility" and D4.4 "Online content report". The platform is developed for the inclusive demonstration and assessment of the identified FEFTS solutions. It operates as a content aggregator and as a single point of entry for end-users. Consequently, demonstration of several data was organized to be projected in an easily understandable and user-friendly image.

As of the end of November 2021, the content of the platform has been fed with the results and outcomes of WP1 and WP2 of AgroFossilFree project, meaning that the content is provided by the project's partners. This is attributed to the fact that the platform has not been yet publicly released, thus is not yet available to third parties outside the consortium.

In the next period, and after the public release and wide share of the platform, an extra feature will be added. More specifically, an evaluation button will be added in the assessment section, in order to provide users with the ability to evaluate existing technologies and rank them according to their needs, opinion and technology's relevance, applicability and feasibility.

As already mentioned in D4.1, the platforms contains FEFTS that include scientific papers, research projects, commercial technologies, training material and financing mechanisms for the defossilization of the agricultural sector. The aforementioned FEFTS include solutions for optimum energy management in open-field agriculture, greenhouses and livestock.

2. Display of FEFTS

The display of FEFTS is structured in an efficient way, aiming to project all important information and data of each solution in one page, in distinct text tiles, so that information retrieval is facilitated. The objective to compile all necessary information is small phrases or lists allows the reduction of the text's size, which is very significant for the proper organization of data and consequently for achieving the optimum navigation experience. Thus, for all 5 different FEFTS' information types -i.e. scientific papers, research projects, commercial technologies, training material and financing mechanisms- available information is displayed in a concrete way, which is common in each distinct type. This means that data of each distinct type are placed on the same corresponding sections for the simplification, homogeneity and harmonization of the displayed content.

1.1. Scientific paper

When a scientific paper is selected for display, user is introduced with the webpage presented in **Figure 1**. More specifically, the image or image gallery is displayed on to top left side area of the webpage. Below the image section, the general description is presented, empowered by a scrolling feature with a specific height for the area covered by the text inserted.

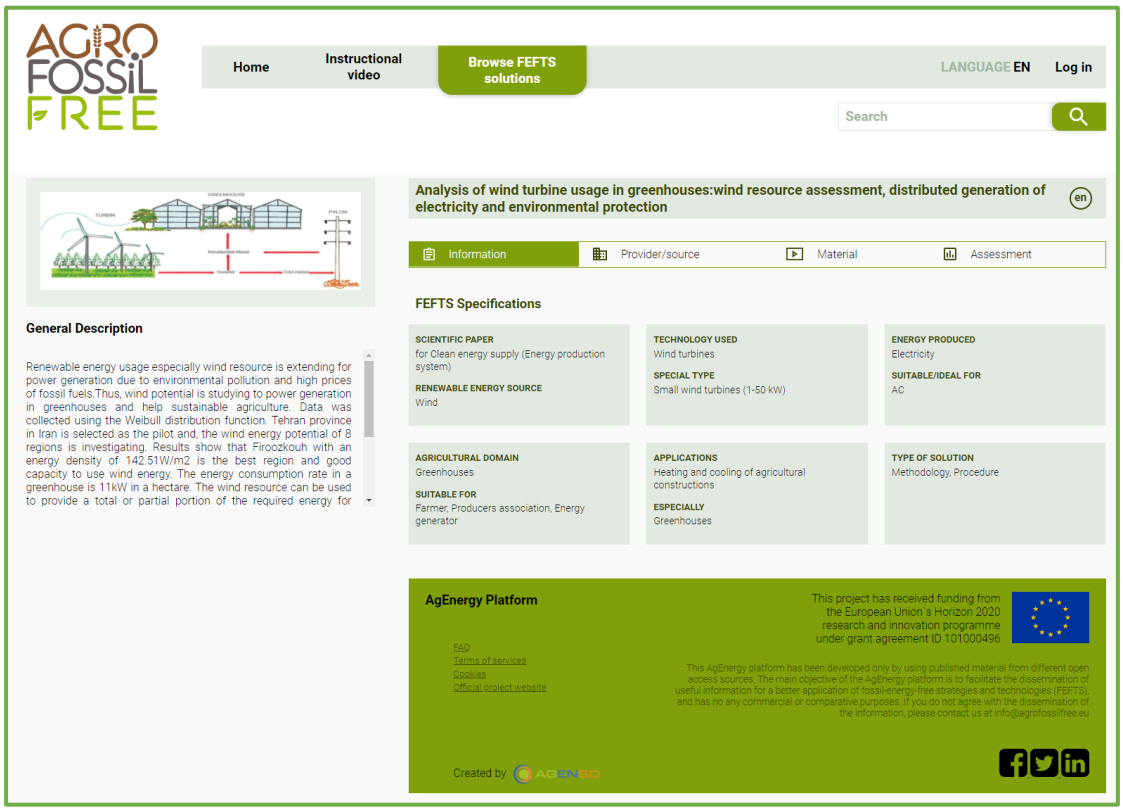

Figure 1. *Scientific paper - display overview*

On the top right side area, the title of the FEFTS is placed on a colored text box, accompanied by the native language of the provider which is encoded by using the abbreviation of the language, and placed in a circle (**Figure 2**). Below the title, all 4 tabs of the FEFTS are displayed, namely, information, provider/source, material and assessment. The first tab, i.e. information, contains all FEFTS specifications in 6 text tiles that are divided in 2 rows of 3 tiles that contain diverse information. More precisely, in the first tile of the first row, the FEFTS information type is displayed in bold, with the FEFTS type, and its subcategories if exist. In the second tile, the technology used is presented, together with its dependencies (special type) if exists. Correspondingly, in the third tab of the first row, the energy produced is displayed, together with suitable/ideal type of the current energy produced.

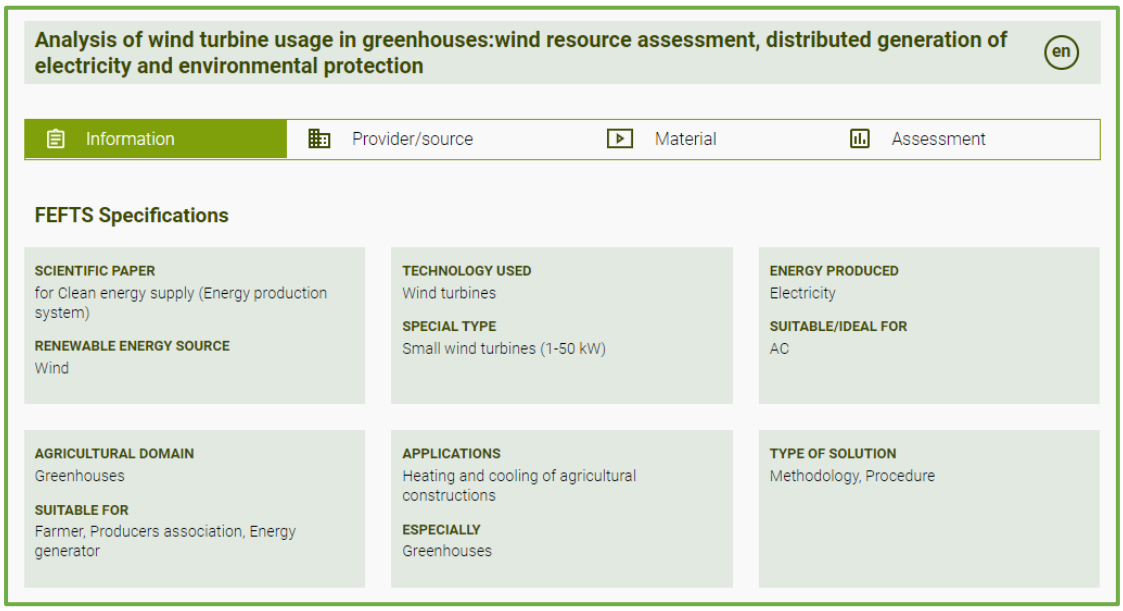

Figure 2. *Scientific paper - information tab*

In the second row of tiles, 3 tabs are also displayed. In the first one, the agricultural domain with further information is displayed. In the second tab, users can find information regarding the agricultural applications related to the FEFTS; while in the last tile, users can find the type of the solution, i.e. methodology, procedure, hardware, software etc.

In the second tab, namely provider/source, all details related to the scientific paper are included (**Figure 3**). Details contain fields such as the authors' names, the journal, the journal link, the publication date, the DOI link, the article link, the authors' locations, article funding source, and the corresponding author's contact details. Finally, the provider's official website link is accessible under this tab, by using the "Official website link" button that redirects to the provider's website.

The third tab is entitled material (**Figure 4**). Under this tab, users can access any relevant file, audiovisual material and video for the specific FEFTS. In case there is no available file, a dash is used in order to indicate that there is no available material.

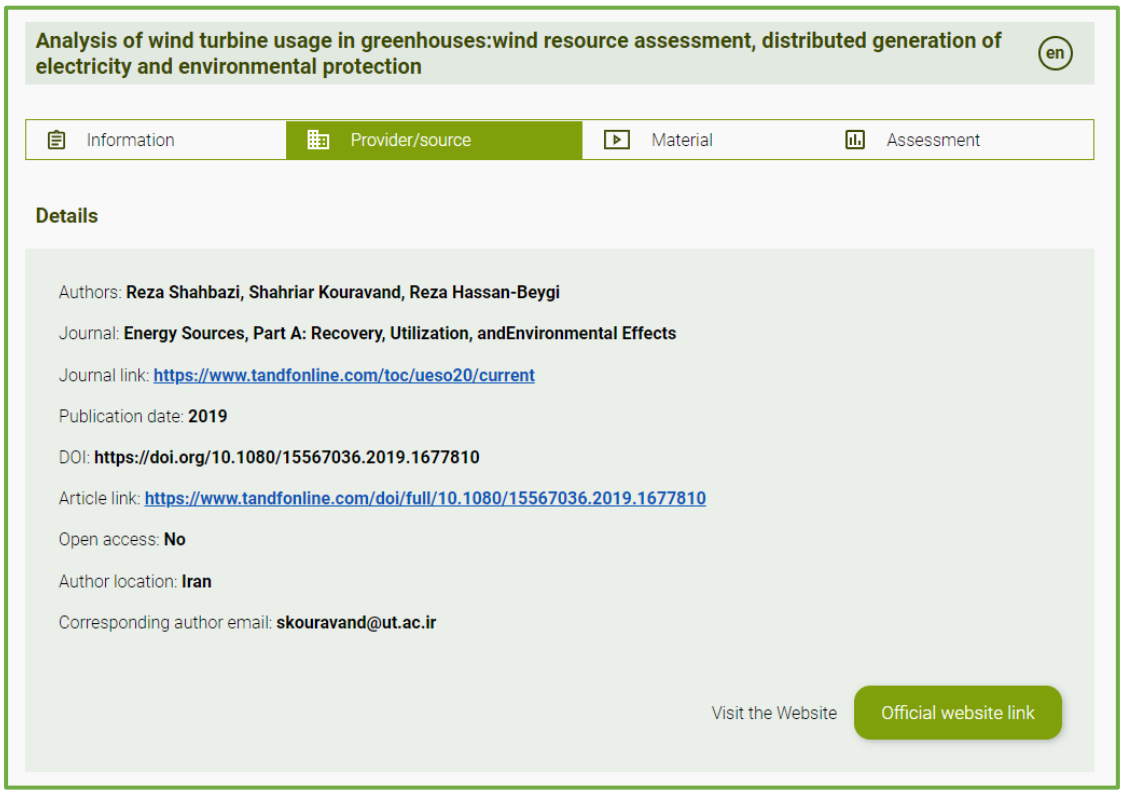

Figure 3. *Scientific paper - provider/source tab*

Figure 4. *Scientific paper - material tab*

Finally, in the last tab of the scientific papers' display, the assessment is presented (**Figure 5**). This assessment has been provided by the FEFTS owner, more precisely, the user who has registered the FEFTS. The questions of the assessment, along with the procedure of conducting the assessment have been described in detail in D4.1 "Networking facility". The presentation of the assessment includes short titles for each field, and the answer is either presented in color inside the 5 level scale, for the questions that can be answered by selecting a choice from a drop-down menu list containing the 5 levels; or presented as a list with bullets, in the case of 2 questions in the environmental assessment. The aforementioned 2 questions are developed as multiple selection fields and refer to the direct and indirect fossil energy reduction that can be achieved by the implementation, application or use of the FEFTS. However, since they both are optional for the submission of a FEFTS, it has been decided that in case they are not answered, the entire field will not

appear in the user's interface. This dynamic approach aligns with the attempt to reduce unuseful text, in order to provide users only with the essential available information.

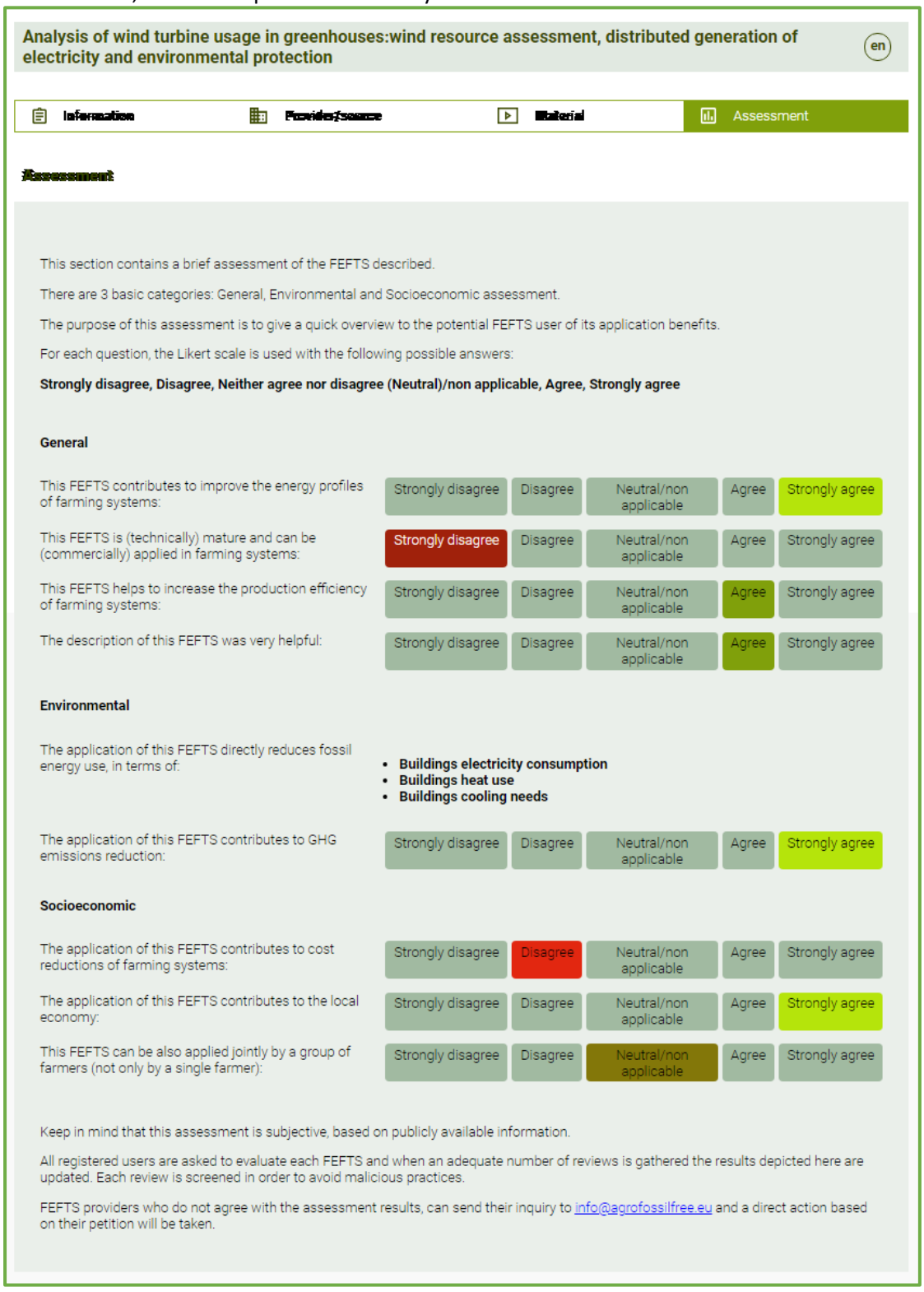

Figure 5. *Scientific paper - assessment tab*

An additional feature of the assessment's structure deployment is that in small monitors, mobile phones and tablets, the possible answers of the 5 level scale hide, and only the given

answer remains displayed (**Figure 6**). This functionality allows a user-friendly experience in all different types of screens.

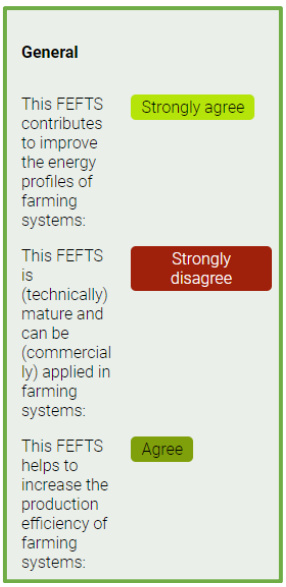

Figure 6. *Assessment tab in smartphone screen size*

It is worth mentioning that the platform is considered to be an alive tool. Thus, constant improvement are going to be applied for the amelioration of User's Experience (UX). Since the platform may undergo minor amendments for the refinement of both its content and its Graphical User Interface (GUI), changes may occur aiming to present the most useful information and provide a realistic overview of the FEFTS solutions in the best way for increasing the intuitiveness in terms of software developing.

Additionally before the official public release of the platform, a button will be added in the assessment tab, in order to enable user to evaluate the FEFTS, according to his/her opinion. Results will not be directly published, aiming to ensure the integrity of the platforms content with due care and attention. However, the project's consortium will have access to the submitted evaluation forms through the administration panel of the platform (private interface for inside use by the project's partners). This essential aspect is seriously taken into consideration with reasonable care and diligence by AgroFossilFree consortium, for the maintenance of impartiality in the process of knowledge diffusion and transfer.

1.2. Research project

When a research project is selected for display, user is introduced with the webpage presented in **Figure 7**. The interface is the same as previously mentioned in the case of scientific papers, while is also the same for the rest of the different FEFTS information types.

Figure 7. *Research project - display overview*

The same 4 tabs are again displayed with the first tab containing the same information (**Figure 8**), but the second tab referring to provider/source contains different information that are related to the research project (**Figure 9**).

Data displayed in the provider/source tab refer to the project's acronym, to the project's funding type and source, to the project coordinator name, location and contact details, to the status of the project and its budget, as well as to further available related websites. The official website link button is also available.

Figure 8. *Research project - information tab*

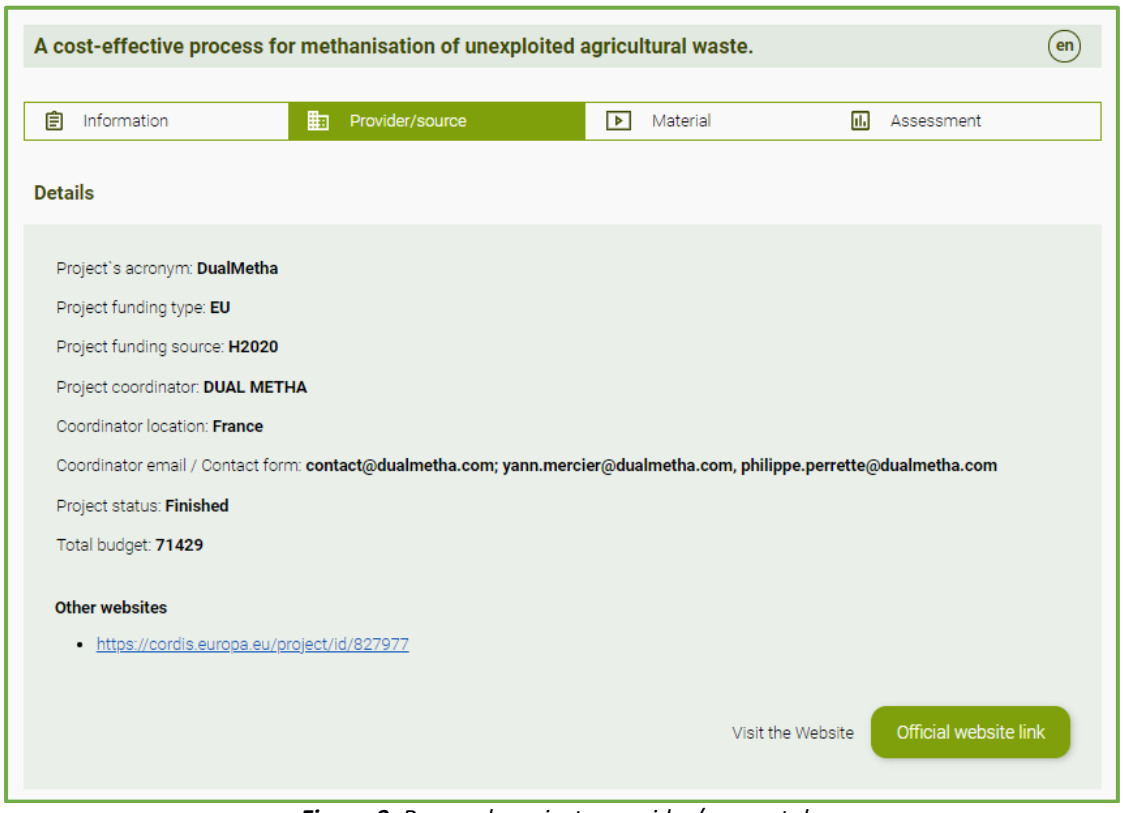

Figure 9. *Research project - provider/source tab*

The material (**Figure 10**) and assessment (**Figure 11**) tabs follow the structure that is previously described for scientific papers with no further deviation.

Figure 10. *Research project - material tab*

Figure 11. *Research project - assessment tab*

1.3. Commercial technology

When a commercial technology is selected for display, user is introduced with the webpage presented in **Figure 12**. The interface is the same as previously mentioned in the case of scientific papers and research projects, and is also the same for the rest of the different FEFTS information types.

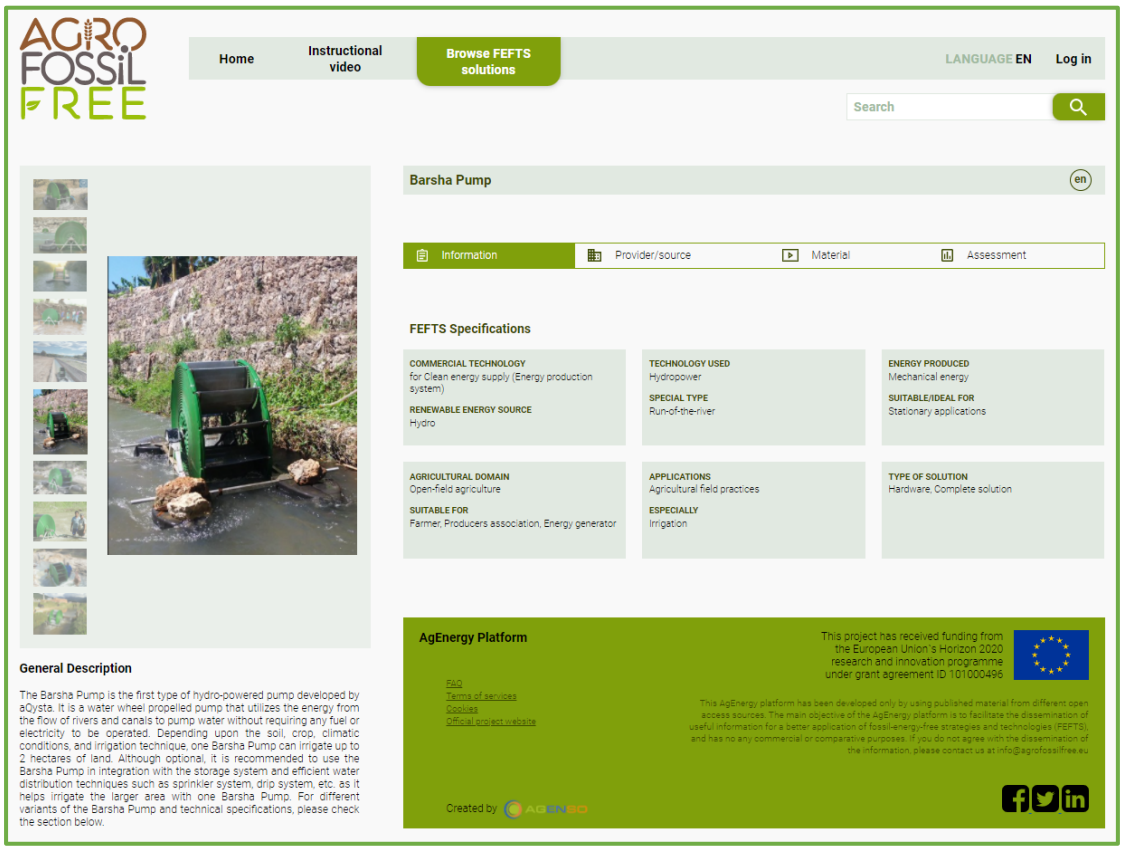

Figure 12. *Commercial technology - display overview*

The same 4 tabs are displayed again with the first tab containing the same information (**Figure 13**), but the second tab referring to provider/source contains different information that are related to the research project (**Figure 14**).

Data displayed in the provider/source tab refer to the company name, the official company name, the address of the company, the company size based on the number of employees, as well as to further available related websites. The official website link button is also available.

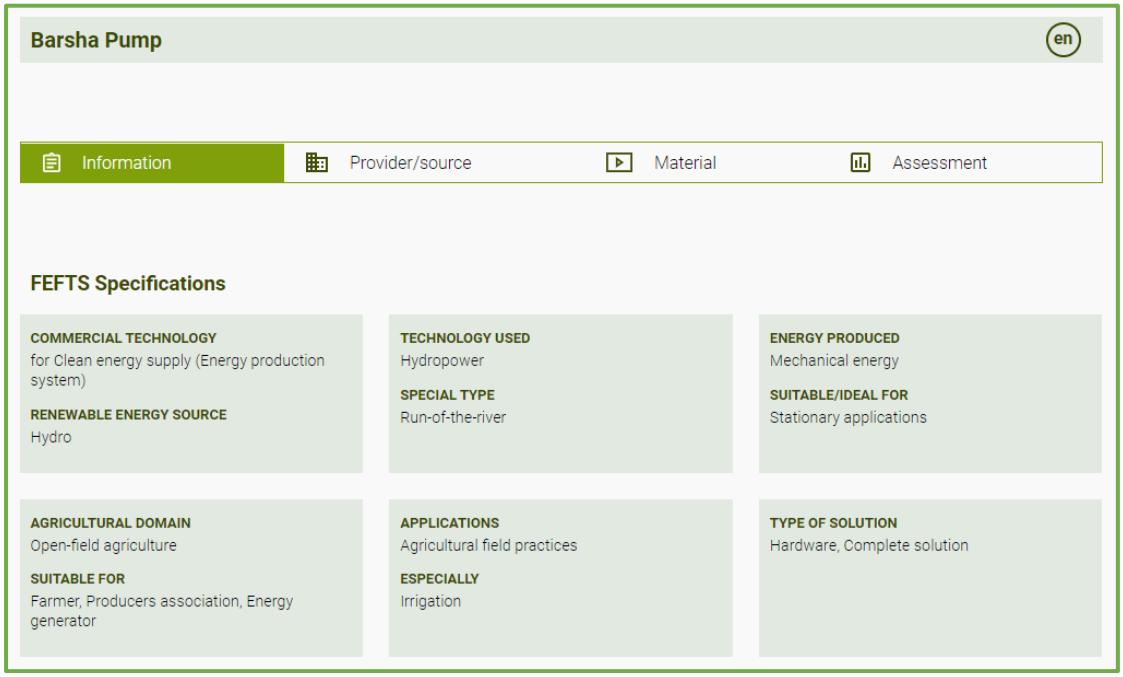

Figure 13. *Commercial technology - information tab*

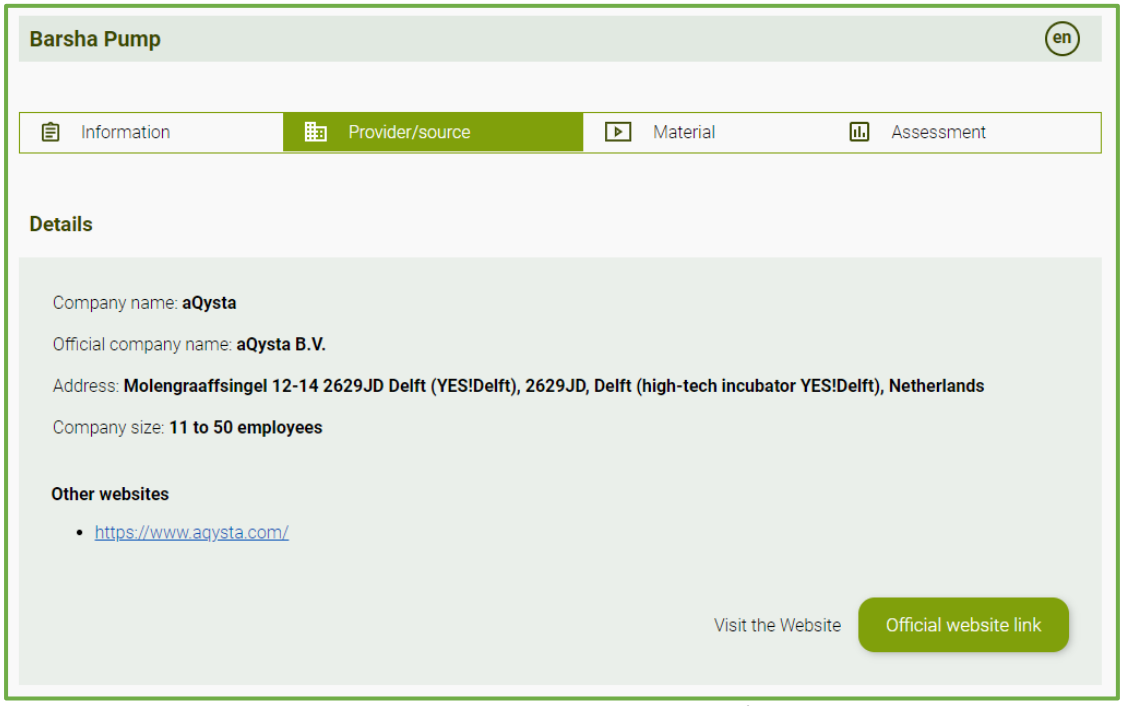

Figure 14. *Commercial technology - provider/source tab*

Regarding material (**Figure 15**) and assessment (**Figure 16**) tabs, no further differences exist in comparison to the previously described content of the specific tabs.

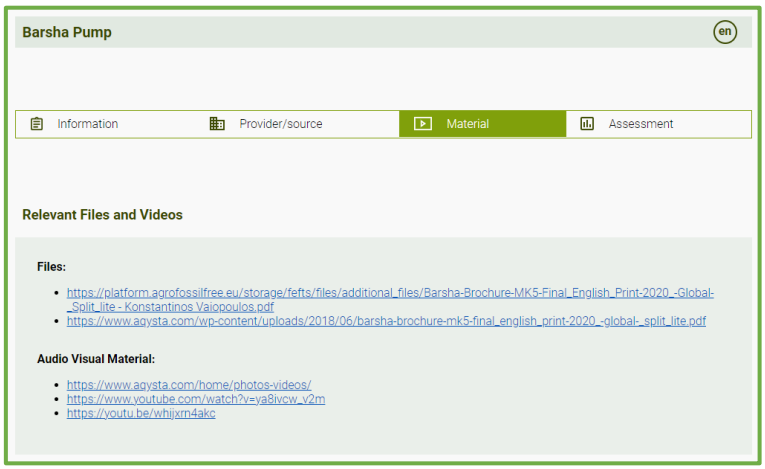

Figure 15. *Commercial technology - material tab*

Figure 16. *Commercial technology - assessment tab*

1.4. Training material

When a training material is selected for display, user is introduced with the webpage presented in **Figure 17**. The interface is the same as previously mentioned in the case of scientific papers, research projects and commercial technologies, while is also the same for the rest of the different FEFTS information types.

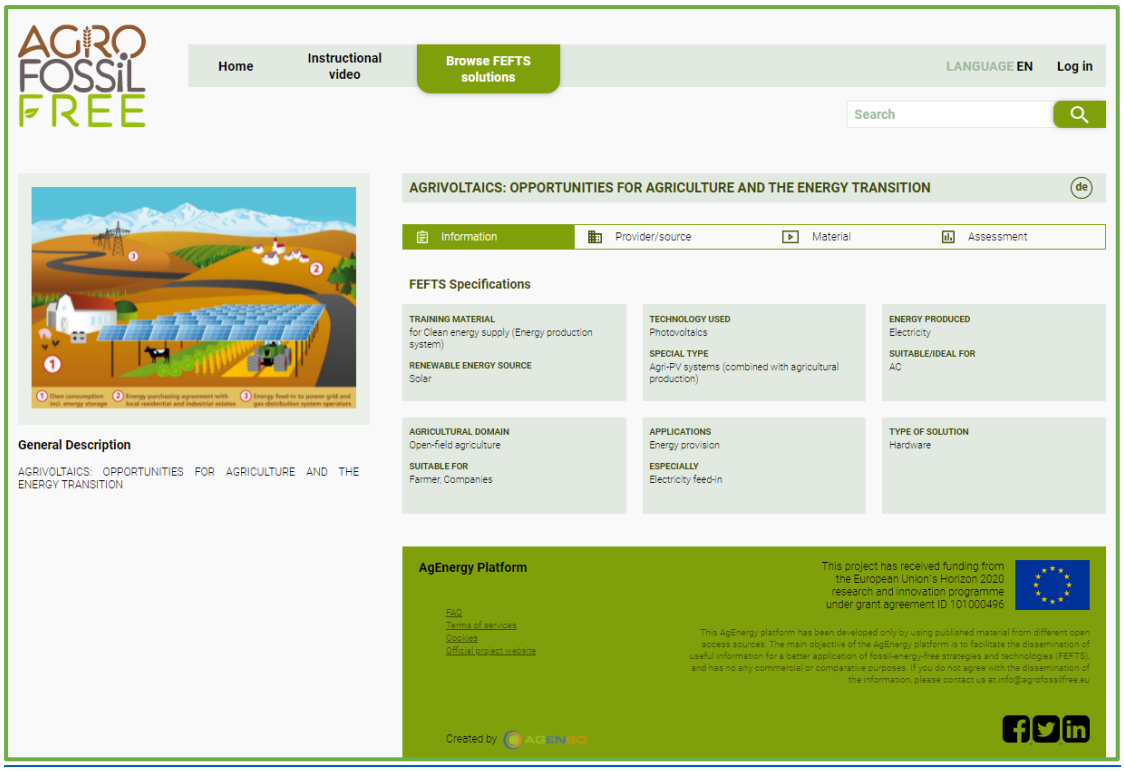

Figure 17. *Training material - display overview*

The same 4 tabs are displayed again with the first tab containing the same information (**Figure 18*Figure 13***), but the second tab referring to provider/source contains different information that are related to training material (**Figure 19**).

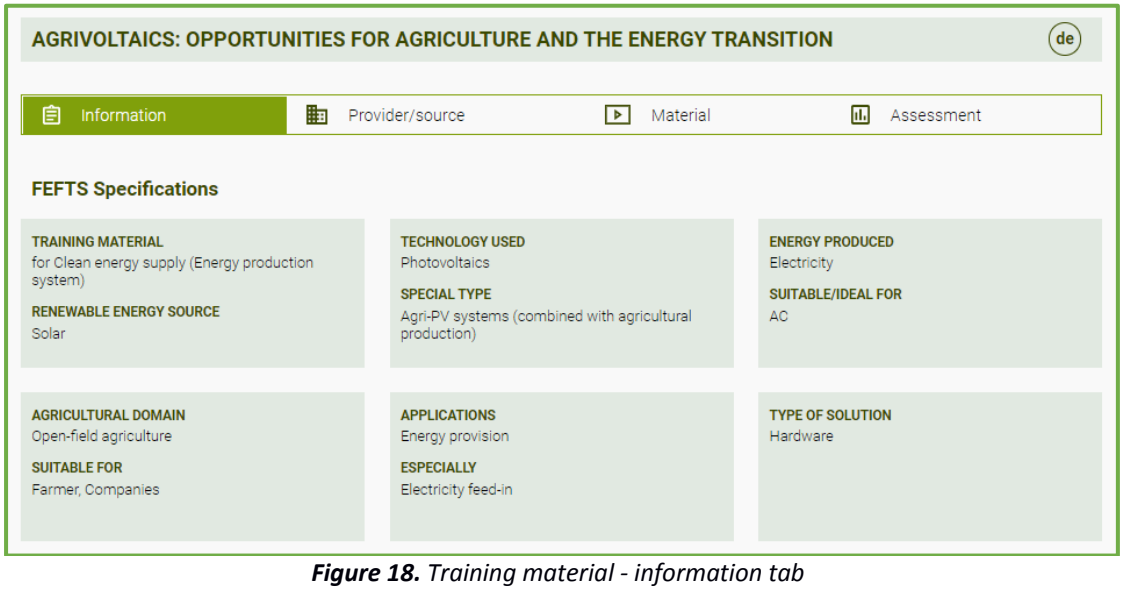

Figure 18. *Training material - information tab*

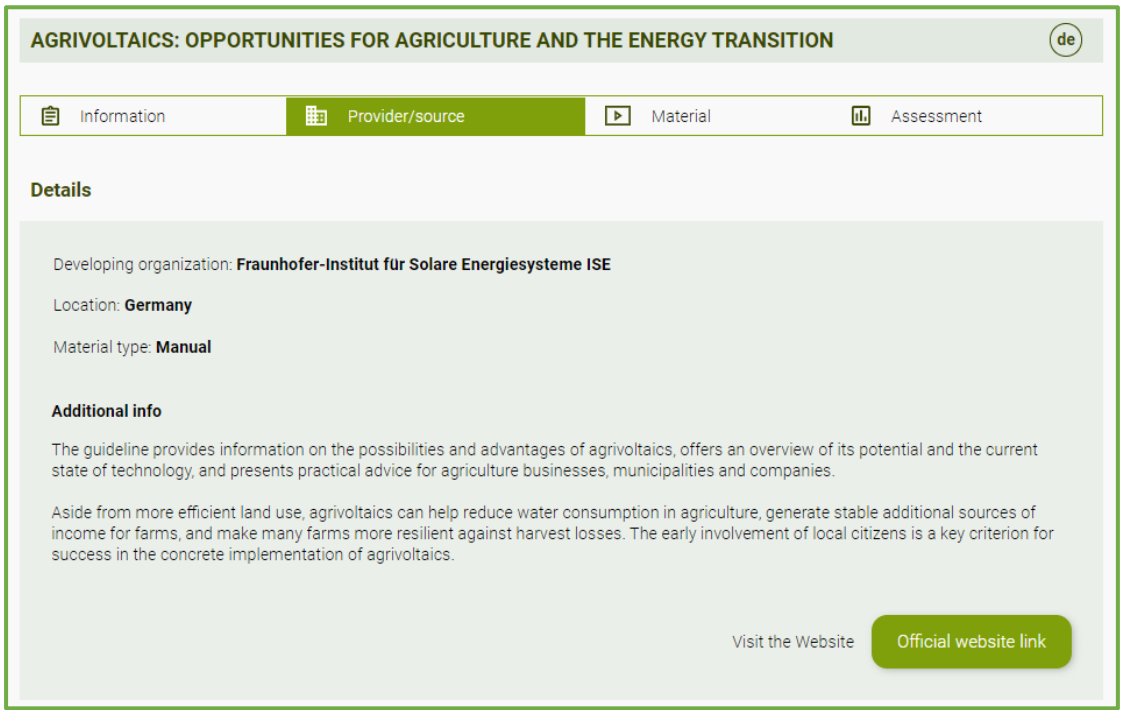

Figure 19. *Training material - provider/source tab*

More specifically, data displayed in the provider/source tab refer to the name of the developing organization, its location, the type of the material, and any possible additional information available. The official website link button is also available.
Regarding material (**Figure 20**) and assessment (**Figure 21**) tabs, no further differences exist in comparison to the previously described content of the specific tabs.

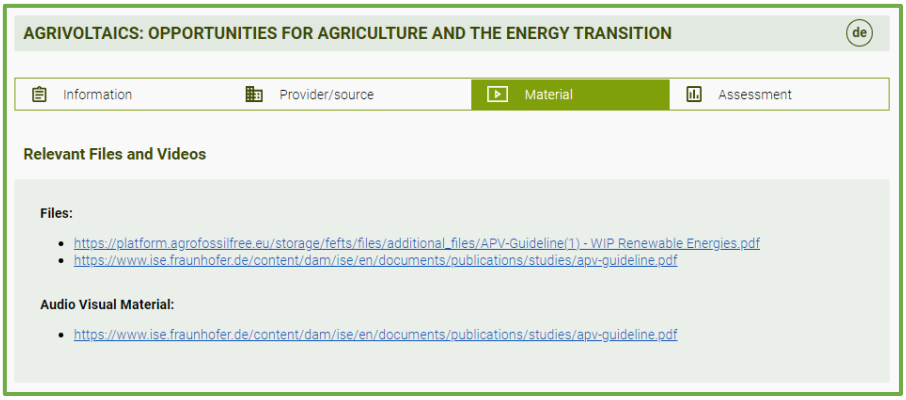

Figure 20. *Training material - material tab*

Figure 21. *Training material - assessment tab*

1.5. Financing mechanism

When a financing mechanism is selected for display, user is introduced with the webpage presented in **Figure 22**. The interface is the same as previously mentioned in the cases of the rest FEFTS information types.

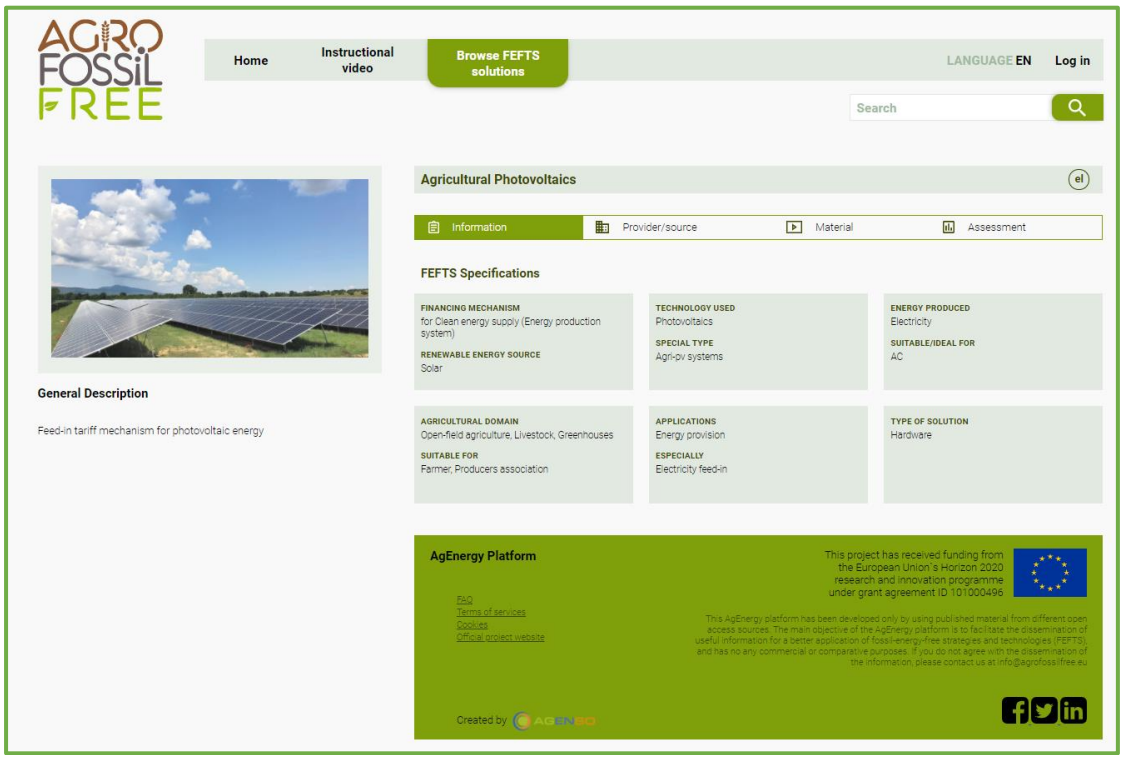

Figure 22. *Financing mechanism - display overview*

The same 4 tabs are displayed again with the first tab containing the same information (**Figure 23*Figure 13***), but the second tab referring to provider/source contains different information that are related to financing mechanisms (**Figure 24**).

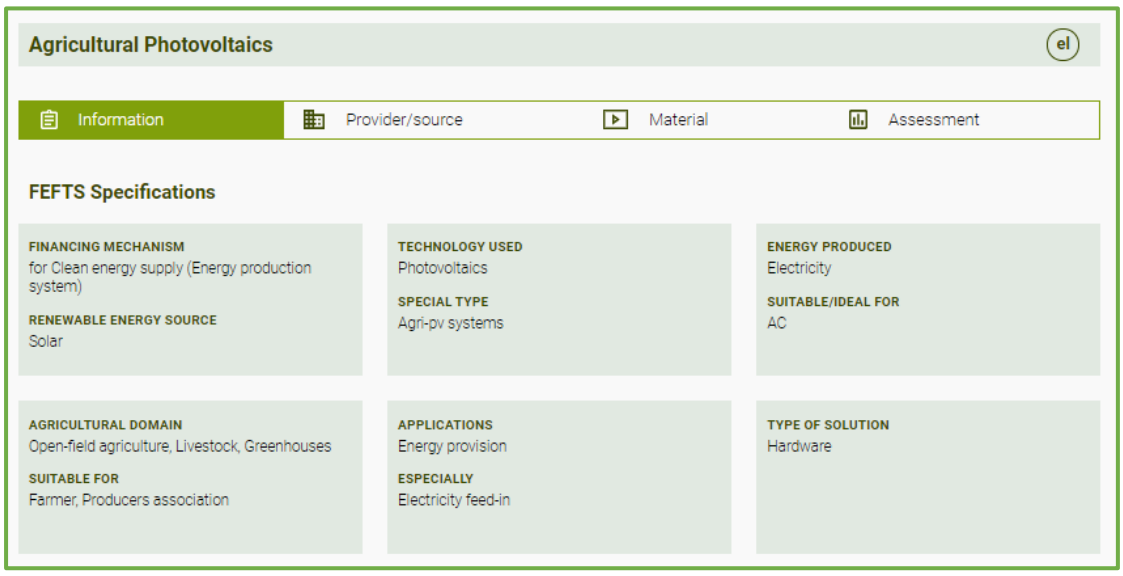

Figure 23. *Financing mechanism - information tab*

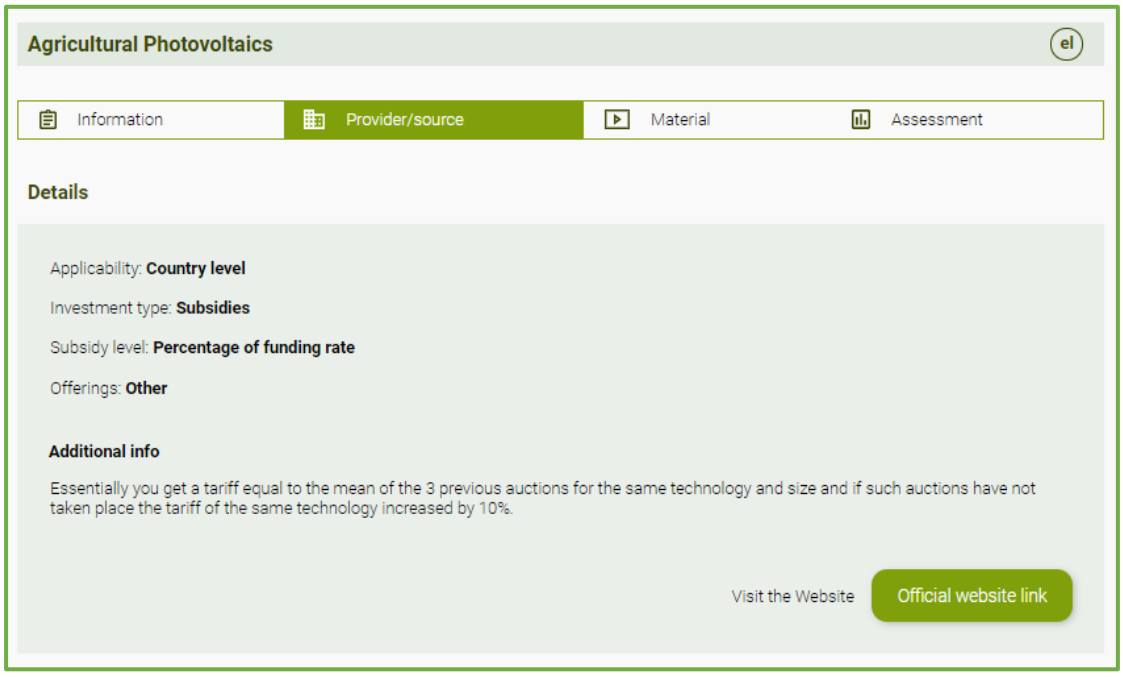

Figure 24. *Financing mechanism - provider/source tab*

More specifically, data displayed in the provider/source tab refer to the applicability region of the mechanism, to the investment type, to the subsidy level, to the offerings of the mechanism, and any available additional information. The official website link button is also available.

Regarding material (**Figure 25**) and assessment (**Figure 26**) tabs, no further differences exist in comparison to the previously described content of the specific tabs.

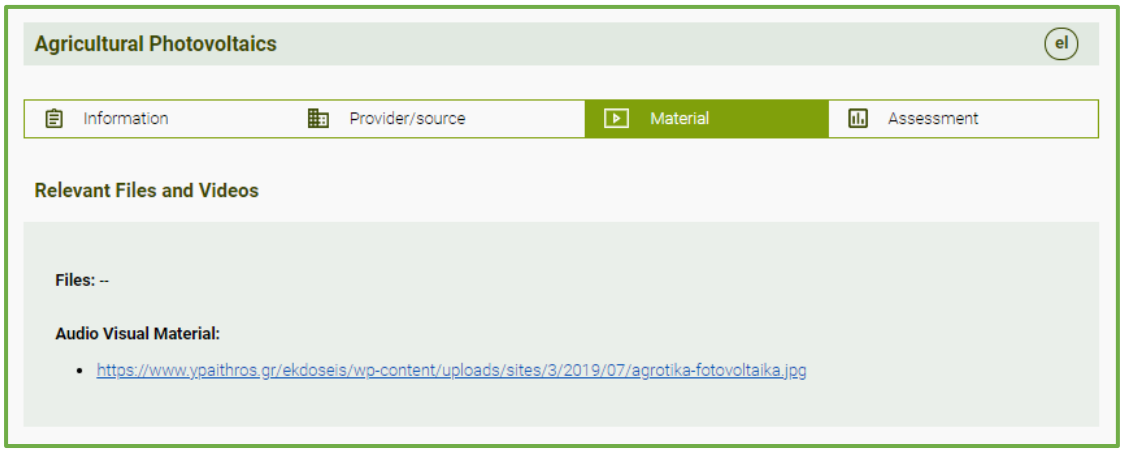

Figure 25. *Financing mechanism - material tab*

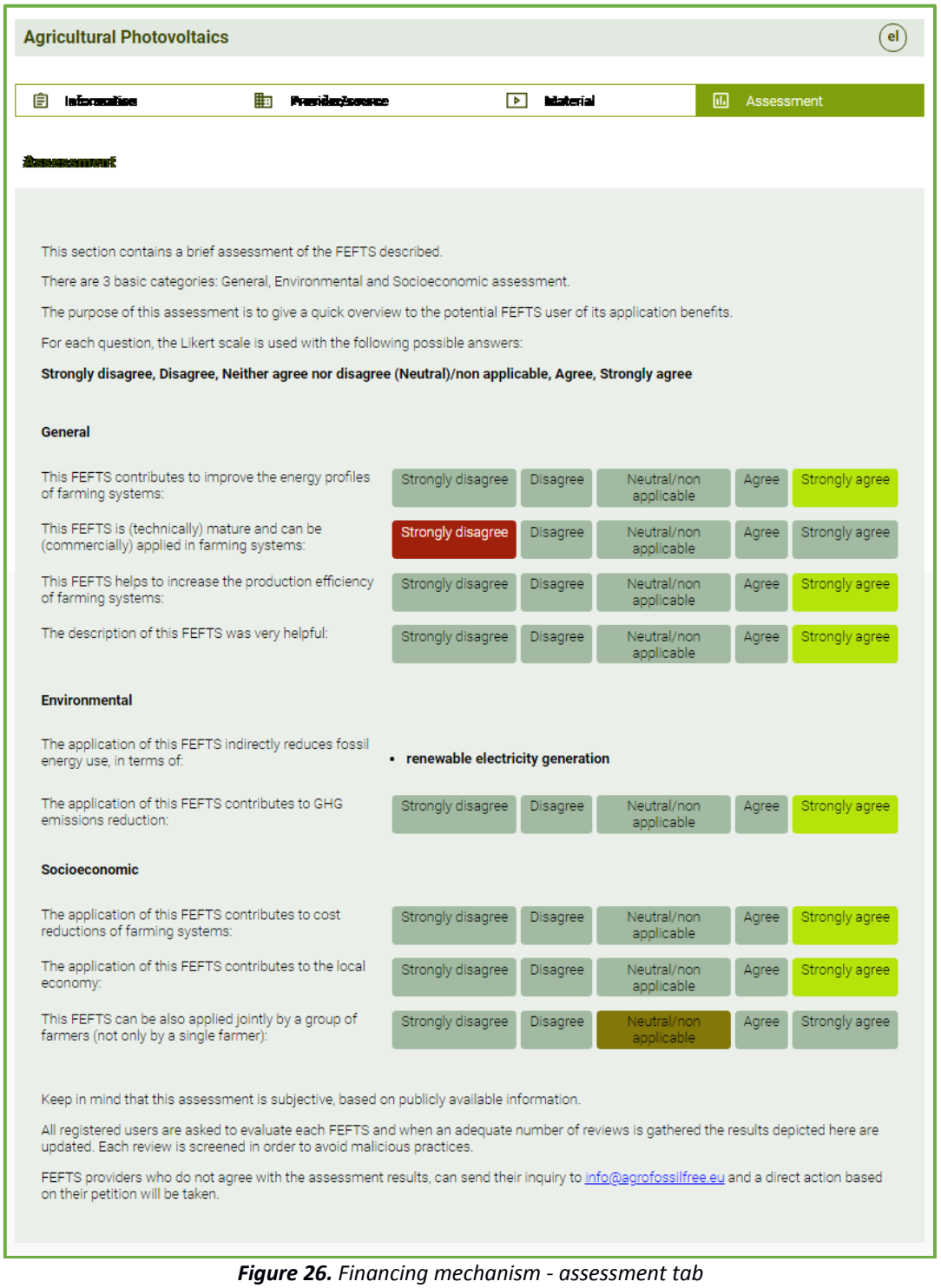

Figure 26. *Financing mechanism - assessment tab*

2. Conclusions

In the current deliverable, an overview of the FEFTS display has been provided, aiming explain the structure and deployment of the final display step in a query procedure in the AgEnergy platform. Display of all 5 different FEFTS information types has been described, allowing the understanding between the differences amongst display of the distinct information types. Display functionalities have carefully been selected and applied, aiming to

provide the best possible user experience to the platforms visitors and enhance knowledge transfer.