EC Grant Agreement n°609788

CHEETAH

Cost-reduction through material optimisation and Higher EnErgy outpuT of solAr pHotovoltaic modules - joining Europe's Research and Development efforts in support of its PV industry

Deliverable

D4.6 – Template of the foreground sheet

(to be included in the PUDF)

WP4 – Dissemination, internal and external communication

Section 1 – Document Status

Document information

Deliverable name	CHEETAH_D4.6_template of the foreground sheet
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Document validation

Name	Organisation	Date	Visa
Karsten Bittkau – WP4 leader	JÜLICH	22/06/2015	OK
Jan Kroon - Coordinator	ECN	28/06/2015	OK

Document history

Version	Date	Modifications	Name
00	17/06/2015	Creation	E. Simonot
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04	22/06/2015	V3 review	E. Simonot

Section 2 – Table of content

Section 3 – Executive summary

Description of the deliverable content and purpose

The Cheetah "foreground sheet" is one of the key elements of the strategy for the use of KIC's tools to reinforce the project's outreach of market uptake defined in Deliverable 5.1 whose main objectives were:

1- Get the industry on board for the exploitation of Cheetah's results, guarantee of market uptake and impact.

2- Prepare Cheetah's results and partners to the requirements of KIC InnoEnergy's support mechanisms to improve the use of KIC InnoEnergy's tools and reach the market.

The "foreground sheet" is included in a wider targeted dissemination strategy to inform as effectively as possible the most relevant industrial partners identified for each type of results coming out of the projects. This dissemination strategy has to be as personalized as possible to ensure that the targeted industries receive the required amount and quality of information and that the evaluation of the developed technology is made efficient and fast.

For this targeted communication and dissemination, it is key that each concrete technology development or innovation developed within Cheetah is described according to the points presented and discussed in this deliverable, with the appropriate level of detail considering confidentiality issues.

Also, note that the information required in this template will be used to fill in the EC foreground template as it appears on the EC platform.

Brief description of the state of the art and the innovation brought

NA

Section 4 – Deliverable report

1. Detail of the fields and information to be included in the foreground sheet

In this chapter, the different fields to be included in the "foreground sheet" are presented and discussed. For each of those fields, the information presented can be considered as a "nice to have" and the details given in the final foreground sheets may not reach the level of detail asked in this document due to, for example, confidentiality reasons. The present document can be seen as a notice to help the Cheetah partners fill in the "foreground sheet template". In any case the final document should not exceed 4 pages meaning the information should be well targeted and summarized, with the possibility to make reference to external documents (reports, articles, presentations, websites, etc…).

1.1. General information

The purpose of the general information category is to give a general overview of the technology or innovation under development. For this purpose, the following fields are of interest:

- **Name of the technology development / innovation**: look for a short and attractive name
- **Confidentiality:** specify if the described foreground is confidential or not.
- **Contact point, contact details**: ideally the contact of the relevant institutions involved in the development of the technology / innovation as well as a Cheetah project contact. Include contact details: email address, phone, address, etc…
- **References**: include any reference to publicly available dissemination material: website, article, newspaper, blog, etc…
- **Basic technical description:** public data only foreground (and eventually background) – identify the main technical features and characteristics of the technology or innovation. Links to more detailed information would be valuable.
- **Impact in the value chain:** identify where the technology or innovation will impact in the PV value chain, in particular identify the possible exploitable products or measures.
- **Market addressed:** identify the types of potential direct customers of products or services derived from the technology/innovation.
- **Problem solved or customer needs answered by the technology development / innovation:** identify and briefly describe the needs or problems answered by the products or services derived from the technologies / innovations.
- **Type of exploitable foreground:** select the most suitable option by ticking the relevant box. Only one choice possible (note that this data is required to fill in the EC foreground sheet template).
- **TRL level:** the Technology Readiness Level (TRL) will help any potential partner evaluating the track record of the technology or innovation under development (see TRL scale in annex).

1.2. Quantified impact and value proposition of the project results

It is relevant to give to the industrial partners the keys to understand how the technologies under development may impact their current businesses or help them developing new ones. To answer that question, it is important to derive the technical feature and characteristics under development to concrete benefits (new capabilities, cost reduction, existing functionalities improvement, etc...).

When talking about benefits, it is important that the impacts are quantified as precisely as possible using the relevant set of indicators corresponding to the characteristics of each product and each business (productivity, efficiency, etc…).

Ideally the description of those benefits should be complemented by an analysis of how the technology or innovation will modify the value creation and capture, not only for the direct users or customers, but also along the whole value chain.

1.3. IP related information:

Regarding IP, good preliminary information should include:

- Existing protection of the technology / innovation by the developer within Cheetah.
- Basic state of the art and freedom to operate analysis, as a complement to the full overview of the technology and its potential as a future product or service.
- Envisaged IP protection strategy (this point is very critical because of the confidential reasons), including the description of the owner and all other beneficiary involved.
- Specification of existing or foreseen embargo dates for the use of the foreground.

1.4. Envisaged exploitation route

For the research institutions participating in Cheetah, the exploitation routes can be driven either by internal factors, linked to internal exploitation policies or experiences (technology push), or by external ones, like the existence of a customer (market pull).

Taking into account this context and the information available from the market at the time this foreground sheet is prepared, the most probable exploitation routes should be mentioned and briefly commented, e.g. licensing, further development in partnerships, spin-off, etc…

The description of the envisaged exploitation route should include a timetable describing, for the foreground elements, the dates of the beginning of their exploitation (commercial or any other use).

1.5. Cost and Levelised Cost of Energy (LCoE) analysis

The information on cost is, together with the modification of the value proposition, one of the key data for the industrial partner to evaluate the opportunities of the technology / innovation and to complement the information from purely technical to more business oriented scope. This specific information is needed to ease a quick decision making process of an industrial partner when at some points decision makers might be disconnected from very specific technical issues.

1.6. Business model

Optionally, and as a summary grouping together the data gathered on value proposition, IP, exploitation routes and costs, it is recommended to prepare a business model linked to the technology / innovation that demonstrate the feasibility of the concept.

2. Template of foreground sheet

Cheetah technology / innovation foreground sheet		
Notes: - *Fill in the template – max length: 4 pages.* - *Please refer to Cheetah Deliverable D4.6 for further indications.*		
General information		
Technology / innovation name:		
Confidentiality:	YES ☐	NO ☐
Contact point	Cheetah contact:	
	Technology / innovation developer contact:	
References (fill in the space below):		
Basic technical description (fill in the space below):		
Impact in value chain - exploitable products/measures (fill in the space below):		
Market addressed (fill in the space below):		
Problem solved or customer needs answered (fill in the space below):		
Type of exploitable foreground	General advancement of knowledge	☐

(choose only one):	Commercial exploitation of R&D results	☐
	Exploitation of R&D results via standards	☐
	Exploitation of results through EU policies	☐
	Exploitation of results through (social) innovation.	☐

TRL level:	

Quantified impact and value proposition of the project results (fill in the space below)**:**

IP related information:	
Existing IP protection:	
State of the art, FTO:	
Envisaged IP protection - owners and other beneficiaries:	
Existing/foreseen embargo dates:	

Envisaged exploitation route and timetable (fill in the space below)**:**

Cost and LCOE analysis (fill in the space below)**:**

Business model (fill in the space below)**:**

ANNEX

TRL	Description
1. Fundamental research	Lowest level of technology readiness. Scientific research is carried out in order to understand and prove physical /chemical /biological/material properties or behavior. Potential applications are foreseeable, but these are not researched yet.
2. Applied research	Invention begins. Practical applications are invented based upon observed principles. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies. In this level, technology concept and/or applications are formulated.
3. Research to prove feasibility	Analytical and experimental critical function and/or characteristic proof of concept. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.
4. Laboratory Demonstration	Basic technological components are integrated to establish that they will work together. This is relatively “low fidelity” compared to the eventual system. Examples include integration of “ad hoc” hardware in the laboratory.
5. Technology Development	The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment. Examples include “high-fidelity” laboratory integration of components.
6. Field demonstration of whole system	Representative model or prototype system, is tested in a relevant environment. Represents a major step up in a technology’s demonstrated readiness. Examples include testing a prototype in a “high-fidelity” laboratory environment or in a simulated operational environment.
7. Industrial Prototype	Prototype using industrial components near, or at, planned operational system. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in real operational environment.
8. Product Industrialization	Actual system completed and qualified through test and demonstration. Technology has been proven to work in its final form and under expected conditions. Means for commercial production of components and assembly of system are developed and used. Pre-series resulting from intended final manufacturing and assembly process are tested under real operational environment.
9. Market Certification and Sales Authorization	Actual application of the technology in its final form. Product and manufacturing processes are approved or certified. The technology fulfills all safety/quality/performance requirements established by applicable standards, law, customers, investors or insurance companies.