

Reversible solid oxide Electrolyzer and Fuel cell for
optimized Local Energy miX

Communication Toolkit

Deliverable D7.1

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 779577. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and Hydrogen Europe and Hydrogen Europe Research



Grant agreement number 779577
Start: 01/01/2018 – Duration: 36 months

Document Classification

Title	Communication Toolkit
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Document Validation

Partner	Approval (Signature or e-mail reference)
WP Leader	DTU
Coordinator	CEA, 23/05/2018
Others (if applicable)	

Abstract

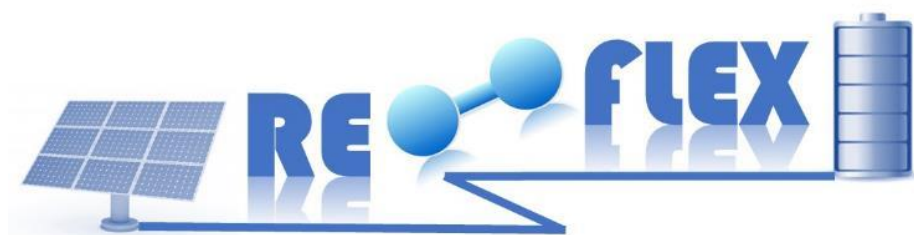
This document describes the Communication Toolkit, which includes the REFLEX project logo; templates for project deliverables, reports, meeting-minutes and presentations; the public project website; and the project leaflet.

Introduction

The main objectives of the dissemination activities of the REFLEX project are to reach the key relevant communities and ensure high impact of the project results at the European level. The Communication Toolkit is the first step towards achieving these goals. The following 4 sections present the products that comprise the Communication Toolkit.

1. Project logo

The REFLEX project logo is included on the cover page of this document and in all of the other Communication Toolkit products described below. The logo illustrates the storage of solar power (among other possible intermittent renewable energies) in the form of hydrogen (the molecule shown between “RE” and “FLEX”) in order to provide electricity (illustrated by the blue zigzag) to the end-users, where full electric load is symbolised by the battery fully loaded.



2. Templates

Standardization of reporting content and graphical design enables systematic project management and a cohesive appearance in presenting project results. To that end, templates for project deliverables, reports, meeting-minutes and presentations have been designed. The present document uses the deliverables/reports template. The meeting-minutes and Powerpoint presentation templates are shown below.

The kit of templates has been sent to the whole consortium by e-mail on 18/04/2018.

2.1 Meeting-minutes template



Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy miX

Minutes of the REFLEX (meeting)

Date

Reference: XXXXXXXX
 Due date: MX
 Submission Date: MX
 Organisation name of lead contractor for this document: XXXX
 Revision (draft, final, revised v1...): Draft
 Dissemination Level: Confidential

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The telephone conference of the REFLEX project was held on the Xth of XXX 201X. The agenda was the following:

Time	Topic	Partner
XX-XX	WP1: Administrative and Financial Management	CEA
XX-XX	WP2: Cell and stack development for flexible reversible operation	CEA
XX-XX	WP3: Power electronics	GPTECH
XX-XX	WP4: System integration and manufacturing	Sylfen
XX-XX	WP5: Installation and Field test	ENVIPARK
XX-XX	WP6: Economical & scale-up studies	ENGIE
XX-XX	WP7: Exploitation & dissemination	DTU

For each WP, the WP leader should, with the help of the task leaders present:

- The work done during the last period (since the previous meeting)
- The progress as compared to what was planned in the description of work and what was agreed at the last meeting (see minutes of the previous meeting)
- The status of deliverables (if applicable for the period)
- The activities planned for the next period (XXX-XXX)
- Any bottlenecks/issues to be discussed/solved

All the presentations given are attached to these minutes and sent to all partners.

The persons attending the meeting were:

Partner	Participant
CEA	
DTU	
VTT	
GPTECH	
ELCOGEN	
SYLFEN	
ENGIE	
ENVIPARK	
USE	



Minutes of the REFLEX (meeting), XX/XX/201X

2 / 3



1. First section

Text in first section

1.1 Subsection

More text

2. Second section

Some text



Minutes of the REFLEX (meeting), XX/XX/201X

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2.2 Presentations template



Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy miX

Event - Name

Date

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Grant Agreement n°779577
Start date: 01/01/2018
Duration: 36 months



Normal slide title



- REFLEX is a Research and Innovative Action (RIA) project, consisting of activities aiming at developing an innovative renewable energies storage solution, the "Smart Energy Hub" (SHE). The SHE is based on the reversible Solid Oxide Cell (rSOC) technology, that is to say able to operate either in electrolysis mode (SOEC) to store excess electricity to produce H₂, or in fuel cell mode (SOFC) when energy needs exceed local production, to produce electricity and heat again from H₂ or any other fuel locally available.
- Normal slide text
- More text



REFLEX, event, (use Insert > Footer)



Acknowledgements



- This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 779577.
- More text

3

REFLEX, event, (use Insert > Footer)



Logos



Main logos



Consortium



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REFLEX, event, (use Insert > Footer)



2.3 Deliverable template



Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy miX

Title of Report or Deliverable Dx.y

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Grant agreement number 779577
Start: 01/01/2018 – Duration: 36 months

Document Classification

Title	INSERT DELIVERABLE FULL TITLE
Deliverable	INSERT DELIVERABLE NUMBER: D-...-...
Reporting Period:	INSERT REPORTING PERIOD NUMBER
Date of Delivery foreseen	Project Month [INSERT PROJECT MONTH NUMBER]
Draft delivery date	INSERT DATE [INSERT PROJECT MONTH NUMBER]
Validation date	INSERT DATE [INSERT PROJECT MONTH NUMBER and DATE DD MM YYYY]
Authors	[INSERT NAME(S) OF AUTHOR(S)] [INSERT PARTNER NUMBER; PARTNER SHORT NAME]
Work package	WP [INSERT WP NUMBER TO WHICH THE DELIVERABLE IS RELATED] [INSERT WP FULL TITLE]
Dissemination	Specify among the following: PU = Public, fully open, e.g. web CO = Confidential, restricted under conditions set out in Model Grant Agreement
Nature	R: Document, report
Version	v[INSERT VERSION NUMBER]
Keywords	[FOR EXAMPLE, Interim, progress, status, report]

Document Validation

Partner	Approval (Signature or e-mail reference)
WP Leader	
Coordinator	
Others (if applicable)	



Title of Report/Deliverable, Date

2 / 3

Abstract

Abstract text

Introduction

Introduction text

1. First section

Text in first section

1.1 Subsection

More text

2. Second section

Some text



Title of Report/Deliverable, Date

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3. Website

The first public version of the website has been published at <http://reflex-energy.eu>, as shown in the following screenshots. This completes the project milestone “MS7.1: Website ready”. A “Publications” section is currently disabled until the project’s first publication of a conference proceeding, journal article, etc. The “News” section will be periodically updated. Notice, that when scrolling the mouse across the EU flag and the FCH logo, the text “This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 779577. This Joint Undertaking receives support from the European Union’s Horizon 2020 research and innovation programme and Hydrogen Europe and Hydrogen Europe Research” appears, as well as it appears at the bottom of each page of the website.



The screenshot shows the REFLEX website homepage. At the top is the REFLEX logo, which includes a stylized sun and the text 'REFLEX'. Below the logo is a navigation bar with links: PROJECT INFO, CONSORTIUM, DOWNLOADS, NEWS, and CONTACT. The main content area features a large illustration of a smart energy hub with a house, solar panels, and a fuel cell. The text reads: 'Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy mix (image from project-member Sylfen)'. Below this is a paragraph: 'The REFLEX project aims at developing an innovative renewable energies storage solution, the “Smart Energy Hub”, based on reversible Solid Oxide Cell (rSOC) technology, that is to say able to operate either in electrolysis mode (SOEC) to store excess electricity to produce H₂, or in fuel cell mode (SOFC) when energy needs exceed local production, to produce electricity and heat again from H₂ or any other fuel locally available.' To the right of the main content is a sidebar with a 'Funded by' section showing the European Commission and FCH logos, and a 'Contact' section with a photo of Julie Mougin and her contact information: Julie Mougin, Head of Hydrogen Technologies Laboratory, CEA, +33 (0)4 38 78 10 07. At the bottom of the page is a dark grey footer with the text: 'THE REFLEX PROJECT', 'Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy mix', 'visitors 1000', 'This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 779577. This Joint Undertaking receives support from the European Union’s Horizon 2020 research and innovation programme and Hydrogen Europe and Hydrogen Europe Research', and the REFLEX logo.



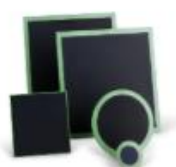
PROJECT INFO

CONSORTIUM

DOWNLOADS

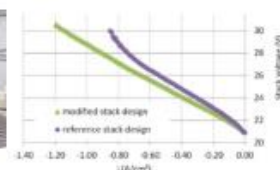
NEWS

CONTACT



The REFLEX project aims at developing an innovative renewable energies storage solution, the "Smart Energy Hub", based on reversible Solid Oxide Cell (rSOC) technology, that is to say able to operate either in electrolysis mode (SOEC) to store excess electricity to produce H₂, or in fuel cell mode (SOFC) when energy needs exceed local production, to produce electricity and heat again from H₂ or any other fuel locally available.

The challenging issue of achieving concomitantly high efficiency, high flexibility in operation and cost optimum is duly addressed through improvements of rSOC components (cells, stacks, power electronics, heat exchangers) and system, and the definition of advanced operation strategies.



The specifications, detailed system design and the advanced operation strategies are supported by modelling tasks.

An in-field demonstration will be performed in a technological park, where the Smart Energy Hub will be coupled to local solar and mini-hydro renewable sources and will provide electricity and heat to the headquarters of the park.

It will demonstrate, in a real environment, the high power-to-power round-trip efficiency of this technology and its flexibility in dynamic operation, thus moving the technology from Technology Readiness Level (TRL) 3 to 6.



The Smart Energy Hub being modular, made of multistacks/multimodules arrangements, scale up studies will be performed to evaluate the techno-economic performance of the technology to address different scales of products for different markets.

To reach these objectives, REFLEX is a cross multidisciplinary consortium gathering 9 organisations from 6 member states (France, Italy, Denmark, Estonia, Spain, Finland).

The partnership covers all competences necessary: cells and stacks development and testing (ELCOGEN, CEA, DTU), power electronics (USE, GPTech), system design and manufacturing (SYLFEN), system modelling (VTT), field test (Envipark), techno-economical and market analysis (ENGIE).

THE REFLEX PROJECT

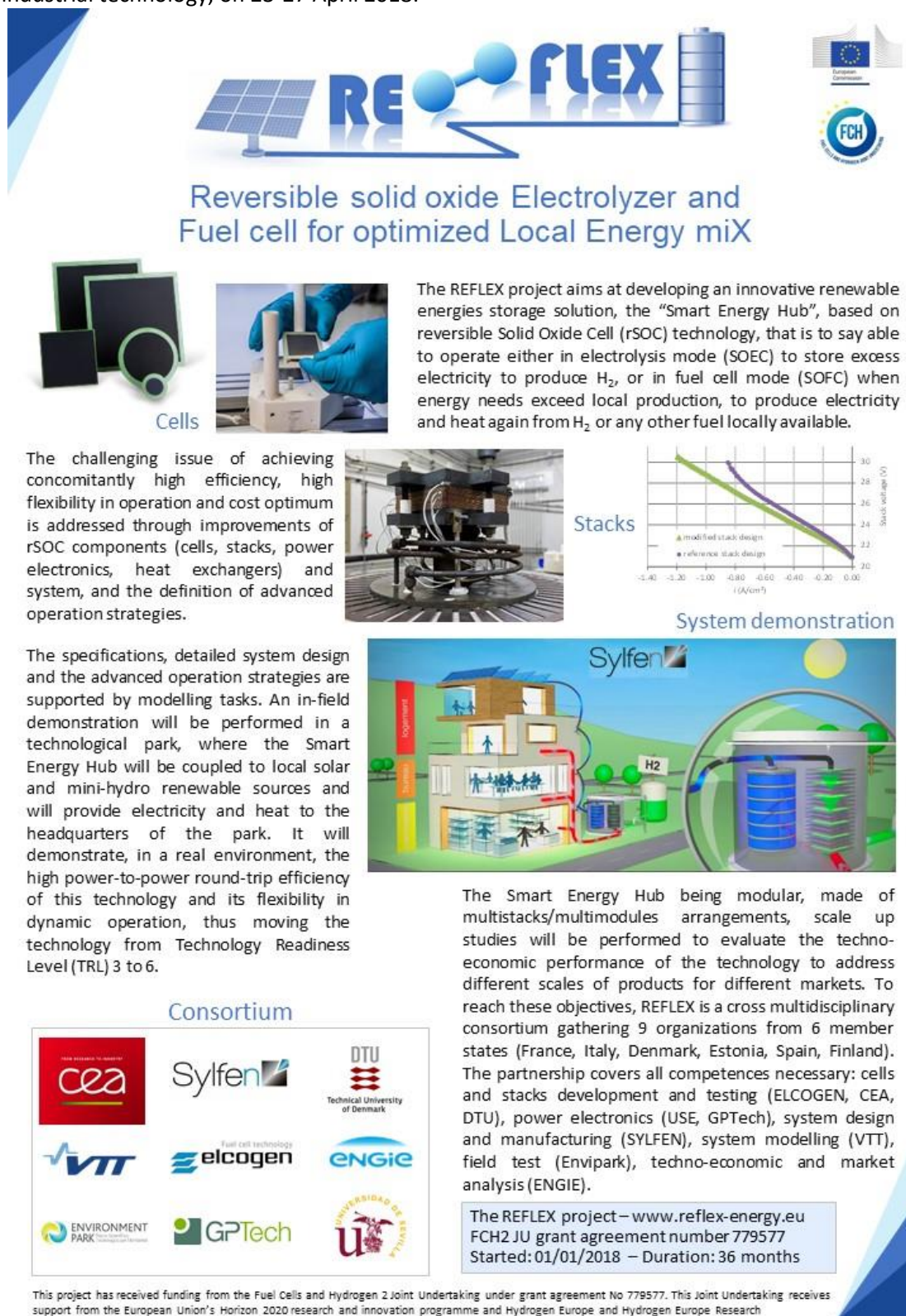
Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy mix
visitors

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Reflex

4. Leaflet

A single-page leaflet has been completed, as shown below. Print-outs were already given out at one public dissemination event, the Hannover Fair / Hannover Messe, one of the world's largest trade fairs for industrial technology, on 23-27 April 2018.



Reversible solid oxide Electrolyzer and Fuel cell for optimized Local Energy miX

Cells

The REFLEX project aims at developing an innovative renewable energies storage solution, the "Smart Energy Hub", based on reversible Solid Oxide Cell (rSOC) technology, that is to say able to operate either in electrolysis mode (SOEC) to store excess electricity to produce H_2 , or in fuel cell mode (SOFC) when energy needs exceed local production, to produce electricity and heat again from H_2 or any other fuel locally available.

The challenging issue of achieving concomitantly high efficiency, high flexibility in operation and cost optimum is addressed through improvements of rSOC components (cells, stacks, power electronics, heat exchangers) and system, and the definition of advanced operation strategies.

Stacks

The specifications, detailed system design and the advanced operation strategies are supported by modelling tasks. An in-field demonstration will be performed in a technological park, where the Smart Energy Hub will be coupled to local solar and mini-hydro renewable sources and will provide electricity and heat to the headquarters of the park. It will demonstrate, in a real environment, the high power-to-power round-trip efficiency of this technology and its flexibility in dynamic operation, thus moving the technology from Technology Readiness Level (TRL) 3 to 6.

System demonstration

The Smart Energy Hub being modular, made of multistacks/multimodules arrangements, scale up studies will be performed to evaluate the techno-economic performance of the technology to address different scales of products for different markets. To reach these objectives, REFLEX is a cross multidisciplinary consortium gathering 9 organizations from 6 member states (France, Italy, Denmark, Estonia, Spain, Finland). The partnership covers all competences necessary: cells and stacks development and testing (ELCOGEN, CEA, DTU), power electronics (USE, GPTech), system design and manufacturing (SYLFEN), system modelling (VTT), field test (Envipark), techno-economic and market analysis (ENGIE).

Consortium

The REFLEX project – www.reflex-energy.eu
 FCH2 JU grant agreement number 779577
 Started: 01/01/2018 – Duration: 36 months

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Outlook

The Communication Toolkit has been completed and will be used throughout the project for dissemination activities. A first newsletter to stakeholders will be sent out in June, using the Communication Toolkit.