



# Toward Efficient Electrochemical Green Ammonia Cycle

## Project deliverable D 7.1 Project Website

<b>Dissemination level:</b>	Public
<b>Lead beneficiary:</b>	CNR
<b>Contracted date of submission:</b>	30 Apr 2021
<b>Actual date of submission:</b>	30 Apr 2021
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## **EXECUTIVE SUMMARY**

With the aim of increasing the project visibility to stakeholders and of facilitating the public awareness of the project activities and results, a public project website has been established ([www.telegram-project.eu](http://www.telegram-project.eu)) in March 2021.

The TELEGRAM project has been also announced in the CNR website and in the website of the Institute for Microelectronics and Microsystems (IMM-CNR). Links to the project presentation have been posted on social media.

The website provides information about the project and the consortium, recent news and activities, meetings and publications. In addition, a restricted Share Point Portal will be set up. The portal will be accessible by the partners for secure data exchange and archiving of the documents generated during the project.



## Table of Contents

<b>1</b>	<b>Introduction</b> .....	<b>4</b>
<b>2</b>	<b>Deliverable objectives and Related Task</b> .....	<b>4</b>
2.1	Description of the related Task: T7.5 Communication (M1-M42).....	5
<b>3</b>	<b>Description of the achieved results</b> .....	<b>5</b>
3.1	Logo .....	5
3.2	Public Website.....	5
3.3	SharePoint for Internal Communication.....	8
<b>4</b>	<b>Deviations and Corrective Actions</b> .....	<b>8</b>
<b>5</b>	<b>Conclusions and Next Steps</b> .....	<b>9</b>



# 1 Introduction

Work package 7 is devoted to Dissemination, Exploitation and Communication of the results produced within the TELEGRAM project.

The general objectives of this workpackage are: the definition and execution of a plan for the dissemination of the project results to the scientific and industrial community, and to the general public; the definition and execution of the project results exploitation strategy; the effective communication of the project results to external stakeholders; the contribution, upon invitation by the INEA, to common and dissemination activities to increase the visibility and synergies between H2020 supported actions.

The related tasks are listed in Table 1, together with start and end dates, as well as status.

**Table 1.** Tasks of WP 7.

N.	Task Description	Start	End	Status
T 7.1	Project Dissemination Strategy (CNR)	Nov 2020	Apr 2024	
T 7.2	Workshop Organization (FZJ)	Apr 2023	Nov 2023	
T 7.3	Special Issue on a Scientific Journal (CNR)	Apr 2023	Feb 2024	
T 7.4	Exploitation Strategy (CNR)	Nov 2020	Apr 2024	
T 7.5	Communication (CNR)	Nov 2020	Apr 2024	

 On schedule/completed     Issues may affect schedule     Deadline/schedule has not/can not be met

## 2 Deliverable objectives and Related Task

The Deliverable 7.1: Project website, is related to Task 7.5: Communication.

The TELEGRAM website has been launched with the main objective to improve the visibility and the awareness to the general public, of the project activity and results.



## 2.1 Description of the related Task: T7.5 Communication (M1-M42)

The task 7.5 aims to increase the project visibility to stakeholders and make the public aware of project activities and results. Activities in this task include:

- Design logo and identity
- Launch and maintain a public website and a social media presence, through dedicated profiles in social networks.
- Create and distribute brochure, newsletters and small videos for the social networks/portal.
- Host visits
- Present key accomplishments to the public media as press release
- Present the project in public events

## 3 Description of the achieved results

### 3.1 Logo

A graphical logo has been created, as shown in Fig. 1. This has been used for the website and for all the TELEGRAM presentations.




*Fig. 1: TELEGRAM Logo*

Moreover, in order to accomplish a project identity, templates for the project deliverables and presentations have been prepared and distributed to all the partners.

### 3.2 Public Website


The web domain [www.telegram-project.eu](http://www.telegram-project.eu) was obtained and a project website was built. The website is hosted by IMM-CNR. The site went live on 15th March 2021. The website includes many sections accessible from the main menu: Project, Consortium, Dissemination, News and Events, Contacts. Figure 2 shows the screenshot of the Homepage.





## TOWARD EFFICIENT ELECTROCHEMICAL GREEN AMMONIA CYCLE

Home
Project
Consortium
Dissemination
News and Events
Contacts

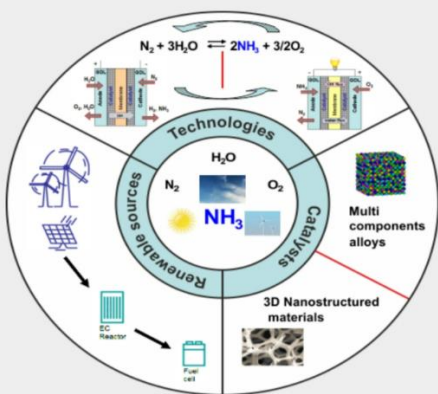


### Project in short

Ammonia is one of the most important basic industrial chemicals in today's society since it does not only serve as a building block for nitrogen-rich fertilizer, but it also offers a carbon-free energy carrier, being easily condensed into liquid for transportation. It therefore represents a fuel, which may enable a complete cycle of synthesis, and consumption that does not result in net emission of greenhouse gases.

The main objective of TELEGRAM project is to demonstrate at the laboratory scale level a complete green ammonia carbon-neutral cycle.

Compared to the Haber –Bosch process, the big advantage of the proposed approach is that it can be performed at atmospheric pressure and low temperature (below 100°C), therefore requiring simplified plants and compact infrastructures, and enabling the production of ammonia regardless of location. Moreover, compared to hydrogen, ammonia can be more easily stored and the TELEGRAM approach of directly using ammonia in a fuel cell to generate electricity, allows the elimination of the additional process of H<sub>2</sub> generation (and purification) from ammonia.




This target will be achieved through the development of two critical technologies, now at the level of the proof of concept (TRL3): the synthesis of NH<sub>3</sub> and its use as fuel. These issues will be tackled by applying a unified approach based on electrochemistry: the electrochemical synthesis of ammonia powered by renewable energy sources, and NH<sub>3</sub> powered fuel cells for electricity generation. Both these two technological steps will be investigated, and the challenges related to intermittent renewable energy sources will be addressed.


A strong effort will be dedicated to the development of novel catalysts and devices for both reactions. Novel high entropy multicomponent alloys, such as high entropy oxide, and nitrides, as well as N-doped oxides will be produced and evaluated. Nanostructured materials will be also investigated and specific solutions will be developed in order to minimize the amount of noble metals, presently the best choice for direct ammonia fuel cells. Test facilities to test the catalysts in operation and monitor products and side-reactions by *in operando* analytical methods will be developed. The more promising materials will be tested in the whole system, with the implementation of laboratory scale demonstrators for the ammonia synthesis and for the direct ammonia fuel cell.


#### DETAILS


- Topic: Developing the next generation of renewable energy technologies (LC-SC3-RES-1-2019-2020)
- Application Area: Carbon free production of ammonia from renewable sources
- Grant agreement n°: 101006941
- Start date: 01/11/2020
- End date: 30/04/2024
- Duration: 42 months
- Total budget: ~ 3,468 M€




This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No 101006941.  
The project started on the 1st of November 2020 with a duration of 42 months.









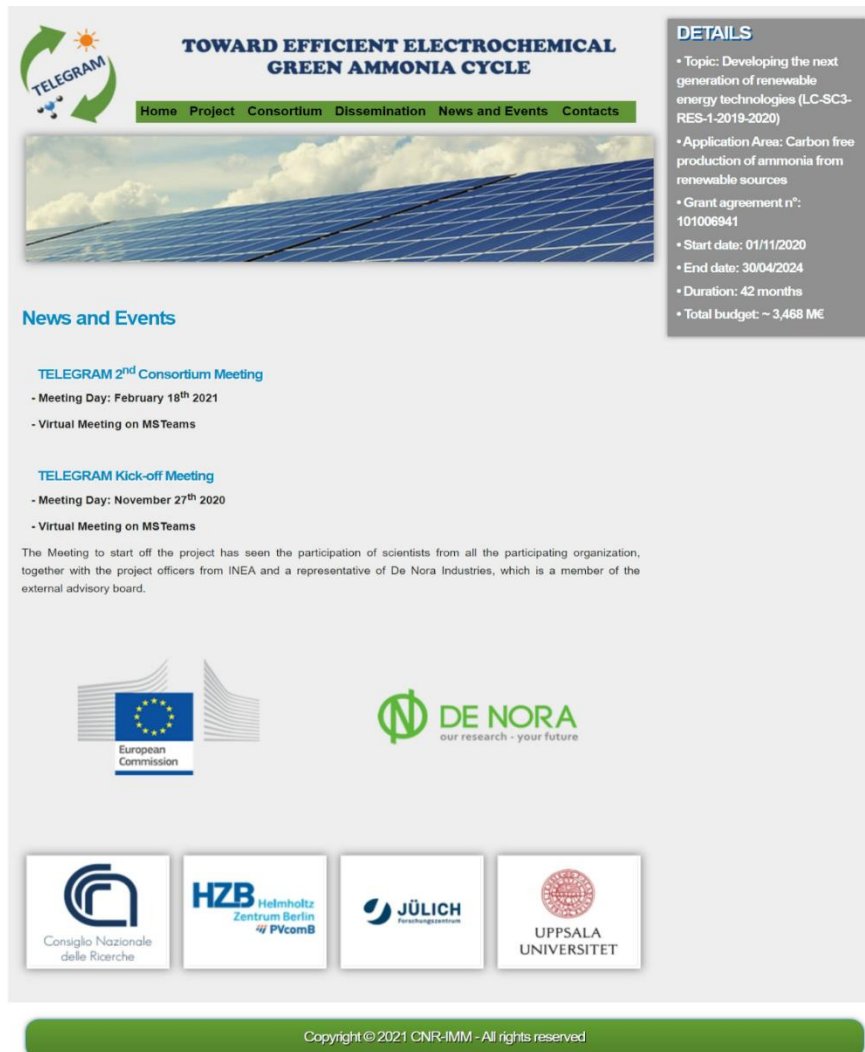
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**Fig. 2:** Screenshot of the Homepage of the TELEGRAM website: [www.telegram-project.eu](http://www.telegram-project.eu)

TELEGRAM is a Collaborative Project under the call H2020-LC-SC3-2020-RES-RIA, Topic LC-SC3-RES-1-2019-2020 Developing the next generation of renewable energy technologies GA n°: 101006941. Start date: November 1<sup>st</sup>, 2020. Duration: 42 months



Among the pages, the website includes the project abstract, the description of the Consortium and a section dedicated to News and Events. In this section, the consortium meeting are also listed. Figure 3 shows, as an example, the News and Events page.



**Fig.3:** Screenshot of the News and Events section of the TELEGRAM website

Moreover, the project has been presented with dedicated articles in the “News” section of the:

- CNR website (<https://www.cnr.it/it/news/10033/ammoniaca-verde-sintesi-elettrochimica-e-celle-a-combustibile#:~:text=L'ammoniaca%20%C3%A8%20un%20composto,emissioni%20globali%20di%20CO2.>)

The project presentation is also available in the website of the Institute for Microelectronics and Microsystems (IMM-CNR) (<https://www.imm.cnr.it/projects/toward-efficient-electrochemical-green-ammonia-cycle>)

TELEGRAM is a Collaborative Project under the call H2020-LC-SC3-2020-RES-RIA, Topic LC-SC3-RES-1-2019-2020 Developing the next generation of renewable energy technologies GA n°: 101006941. Start date: November 1<sup>st</sup>, 2020. Duration: 42 months



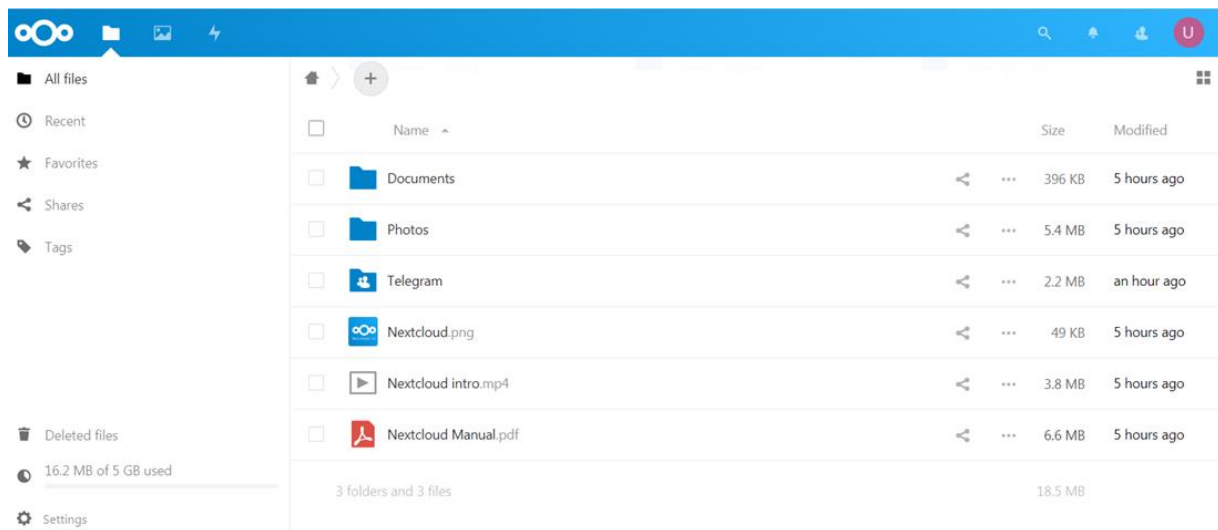
The project has been also announced by linking to several social media:

Linkedin- <https://www.linkedin.com/feed/update/urn:li:activity:6769626055822118914/>

Twitter - <https://twitter.com/TelegramProject>

### 3.3 SharePoint for Internal Communication

The TELEGRAM Project share point, compliant with the EU General Data Protection Regulation requirements, is being realized by CNR-IMM, using a cloud service by Aruba S.p.A. Data will be stored in Europe and will not be transferred outside of the selected region, unless specifically requested or in accordance with applicable regulations. Access to the share point will be strictly personal, available through username and password. It is currently under construction and we foresee that it will be ready and on-line in May 2021. The share point will be administrated by CNR-IMM, and it will be rendered accessible only to selected members of the TELEGRAM Consortium. It will be designed to allow exchange data and documents as meeting presentations and minutes, deliverable drafts, common presentations for conferences, etc. A screenshot showing a preview of the Sharepoint aspect is given in Figure 4.



*Fig.4: Screenshot of the TELEGRAM SharePoint*

## 4 Deviations and Corrective Actions

The Share Point is not yet available, due to some delays related to the cloud provider. It is expected to be ready next month. Nevertheless, a continuous dialogue and knowledge sharing within the consortium has been established, with regular meetings organization and exchange of documents by email.





## 5 Conclusions and Next Steps

The TELEGRAM website [www.telegram-project.eu](http://www.telegram-project.eu) is operational from March 2021 and it will be continuously updated with current news and publications from the project.

The TELEGRAM project has been announced and presented in the CNR website and in the IMM-CNR website. Links to the project presentation have been posted on social media such as LinkedIn and Twitter.

The TELEGRAM Project share point, compliant with the EU General Data Protection Regulation, is currently under construction and we foresee that it will be ready and on-line in May 2021.

