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Report on COSMHYC events

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RE	Restricted to a group specified by the consortium (including the FCH2 JU Services)	
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Introduction

As set out in the Description of Work, dedicated activities were performed over the course of the project and beyond to disseminate the results generated by COSMHYC.

One of the dissemination activities consists in the presentation of project related results at events attracting not only researchers in relevant scientific fields but also potential industrial partners.

In February 2021, the COSMHYC partners organized the project's Final Event. Due to the COVID19 pandemic, the event could not take place in person on the test site but was held as a web seminar.

The purpose of this report is to summarise COSMHYC's main objectives for the Final Event and to give an overview over the promotional activities and the technical set up of the event, as well as give a description the final execution of the web seminar and the feedback received by the participants.

S2i as WP 7 leader was responsible for the organization of the Final Event. The partners contributed to the promotion and presented their work at the event. These contributions were coordinated and supported by S2i as well.

Deviations

In the GA several site visits to the prototype were planned in addition to the Final Event were planned. These were unfortunately impossible through the contact restriction due to the COVID19 pandemic and the delays and complications with the prototype long-term tests. Therefore this deliverable focuses on the COSMHYC Final Event which took place at the 24th of February 2021 as an online conference.

Disclaimer

This report was created within the COSMHYC project.

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1. Objectives of the COSMHYC Final Event

The objective of the COSMHYC Final Event is to present and disseminate the project's achievements to key stakeholders. These include researchers, component manufacturers and potential end users, as well as representatives from the H2 industry and clusters.

Besides the overall promotion of the project and its main accomplishments, another aim was to strengthen the exploitation of each partner's individual products and technologies by presenting the partners' expertise to a broad public. Above that, the COSMHYC final event wanted to provide an opportunity to improve the partner's network with relevant stakeholders or companies. Therefore, COSMHYC offered private B2B calls with consortium members the day after the event: Interested participants of the event could book a 15 minutes slot with a project collaborator to discuss in private. This format was chosen to allow both sides to potentially share details they do not want to disclose in an open context.

2. Planning of the COSMHYC Final Event

2.1 Preliminary considerations and decisions

In the Grant Agreement the Final Event is set out to take place on the test site. Unfortunately, due to the COVID19 pandemic it was not possible to organise an in-person event at the test site. Instead, the COSMHYC consortium decided an online event would provide a suitable and safe platform for presenting COSMHYC results to the public. After almost a year of contact restrictions due to the pandemic, people are accustomed with this kind of events and perceive them as adequate substitutes. It is even possible to reach more people with an online event than a classic event, as thresholds to participation are significantly lower (e.g. no time and cost for travel). During this deliberation and decision process for the new Final Event concept, the consortium investigated the possibility to organise the event in collaboration with the web seminar organiser Mission Hydrogen to maximise its reach. Unfortunately, their offer was significantly above the project's budget for the event.

At the end, the COSMHYC Final Event was decided to be organised by S2i in form of an online conference using GoToWebinar. S2i has extensive experience in organising regional and international events online and offline (e.g. Women4Energy). With the strong community the project did build on Social Media during the past four years, as well as the partners' networks, the consortium was confident to reach their targeted audience. To offer partners and participants the opportunity to network and establish contacts for the exploitation of the project's results, private B2B calls were scheduled for the day after the event, where interested participants could book 15 minutes calls with consortium members to discuss project details or opportunities without further listeners.

2.2 Set up of the COSMHYC Final Event

In accordance with the consortium's considerations and decisions, S2i organised the COSMHYC Final Event as a digital conference. The organisation team chose GoToWebinar as web seminar tool, because it offers the specific feature set needed for professional online conferences, including registration, speaker management, etc.

The agenda of the Final Event was shorter than custom for final events of EU-funded projects of this size. Instead of a one-day-event, the COSMHYC Final Event was shortened to a two-hour web seminar. This decision was taken from the experiences with other digital events, especially during the pandemic: people lose patience and attention, when online events are longer than two to three hours.

Therefore, the program of the COSMHYC Final Event was optimized to fit into the frame of two hours, whilst still giving each partner the time to present their contribution to the project and main results. The project's Project Officer Pietro Caloprisco was also invited to speak at the final event and agreed to give the opening speech on "H2 compression: what is at stake?".

Table 1 Program of the COSMHYC Final Event

Time [minutes]	Program Point	Speaker
5	Welcome	S2i GmbH, Leilah Maier
10	H2 compression: What is at stake?	FCH JU, Pietro Caloprisco
20	The hybrid COSMHYC compression principle and challenges	EIFER, David Colomar
5	COSMHYC Video	
10	Optimized mechanical compressor prototype	NEL, Mikael Sloth
15	Building up a metal hydride compressor prototype	MAHYTEC, J.-M. Tisserand MAHYTEC, Mathilde Bangoura EIFER, Rami Chahrouri
10	Q&A	
25	Testing and results	EIFER, David Colomar
10	Techno-economic assessment	LBST, Jan Zerhusen
10	Q&A	
120	<i>Total time [minutes]</i>	

The agenda is structured so the talks are interrupted by other program points approximately every 30 minutes. This way, participants have short breaks from high attention listening and the event becomes lighter in its structure. Furthermore, the Q&A session give the participants a way to interact with the speakers during the event.

The moderation of the event (welcoming the participants and leading over from one program point to the next) was the role of Leilah Maier from S2i, whilst Marie-Eve Reinert from S2i was the moderator of the chat and Q&A sessions. She handled immediate requests and collected the questions for the Q&A which she then asked to the according consortium member during the two Q&A sessions.

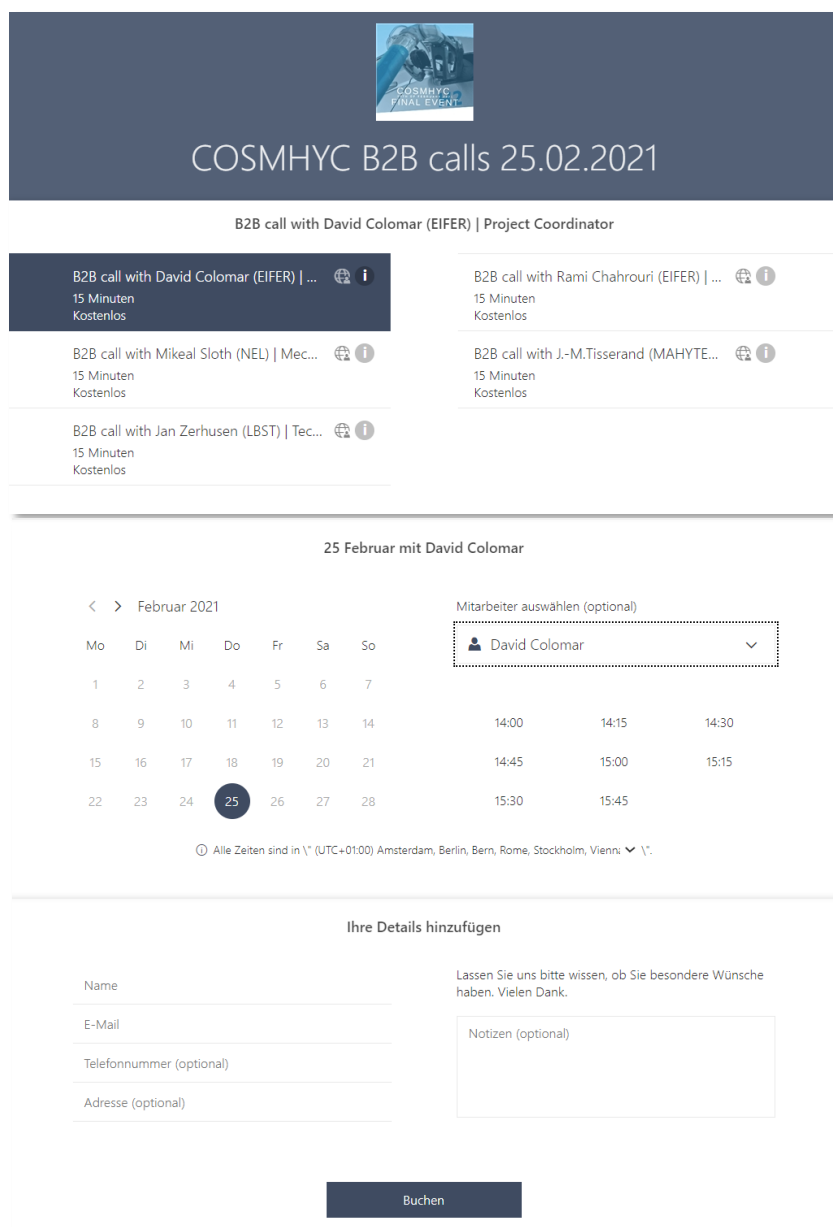
Because the Final Event did not take place in person at the test site, pictures of the prototype were shown, as well as the COSMHYC video to give the participants a visual impression of the project.

2.3 Set up of the B2B calls

When registering for the event, participants had the possibility to schedule private B2B calls with partners for the day after the event. This gave partners and participants the opportunity to network and to discuss specific points without further listeners. The link for scheduling B2B calls was also shared via the chat during the event.

As contact persons from the consortium we chose the speakers of the event. On the one hand, they were highly involved in the project's activities, thus fit to talk about project details. On the other hand, participants might have questions directly addressing the talks, thus the speakers were the best contact persons.

The B2B calls could be booked on a website specifically created for this purpose with Microsoft Bookings.



COSMHYC B2B calls 25.02.2021

B2B call with David Colomar (EIFER) | Project Coordinator

B2B call with David Colomar (EIFER) | ... 15 Minuten Kostenlos

B2B call with Rami Chahroui (EIFER) | ... 15 Minuten Kostenlos

B2B call with Mikeal Sloth (NEL) | Mec... 15 Minuten Kostenlos

B2B call with J.-M.Tisserand (MAHYTE... 15 Minuten Kostenlos

B2B call with Jan Zerhusen (LBST) | Tec... 15 Minuten Kostenlos

25 Februar mit David Colomar

< > Februar 2021

Mo	Di	Mi	Do	Fr	Sa	So
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Mitarbeiter auswählen (optional)

David Colomar

Alle Zeiten sind in * (UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna: *.

Ihre Details hinzufügen

Name

E-Mail

Telefonnummer (optional)

Adresse (optional)

Lassen Sie uns bitte wissen, ob Sie besondere Wünsche haben. Vielen Dank.

Notizen (optional)

Buchen

Figure 1 Interface to book COSMHYC B2B calls

The application Microsoft Bookings is specifically designed to book appointments. In the upper part, participants could choose with whom they wanted to speak. In the section below, date, time and employee can be chosen. As the B2B calls were only to taking place at the 25th of February 2021 from 14:00 to 16:00, all other dates were disabled and only slots in this timeframe were shown. In the bottom section the participant gave their contact details and could send a note along with their appointment.

When a B2B call was booked, the platform directly scheduled a MS Teams meeting into which both partners could log-in via their browsers.

3. Promotion of the COSMHYC Final Event

The COSMHYC Final Event was promoted via different communication channels. The existing communication tools, such as the project website and Social Media channels have been of

great use to share information about the event and promote it within COSMHYC's network. Additionally, project partners' channels and networks were used to reach the targeted groups. During the promotion activities the information required through the obligatory registration was key to evaluate if the targeted audience was reached by the COSMHYC event or if adjustments in the promotion were necessary. Participants were asked for their names, e-mail address, as well as their company and position. Knowing the audience's composition beforehand, also allowed the speakers to set their talks' focus accordingly.

COSMHYC Final Event

Wed, Feb 24, 2021 2:00 PM - 4:00 PM CET
[Show in My Time Zone](#)

The COSMHYC team developed and is currently testing an innovative hybrid compression solution, improving performances and lowering costs of hydrogen compression. In this web seminar project partners present their results of the COSMHYC compression solution. The event will be introduced by a short presentation from Pietro Caloprisco, project officer at FCH JU.

- H2 compression: What is at stake? (FCH JU, Pietro Caloprisco)
- The hybrid COSMHYC compression solution and project results (EIFER, David Colomar, Coordinator)
- Optimized mechanical compressor prototype (NEL, Mikael Sloth)
- Building up a metal hydride compressor prototype (MAHYTEC, J.-K. Tisserand and Mathilde Bangoura & EIFER, Ramzi Chahrouh)
- Techno-economic assessment (LBST, Jan Zerhusen)

Additionally, there will be plenty of time to get your questions answered in our Q&A sessions. We are looking forward to welcoming you at the COSMHYC Final Event!

**** B2B Meetings, 25th of February 2021 ****
If you are interested in meeting the project partners to discuss technical or economical details of the COSMHYC solution, please reserve your private meeting via <https://cutt.ly/COSMHYC>!
In case there are any difficulties, please contact cosmhyc@steinbeis-europa.de

Already curious about COSMHYC? More information on the project can be found on the project Website: www.cosmhyc.eu

*Required field

First Name*	Last Name*
<input type="text" value="Lailah"/>	<input type="text" value="Maier"/>
Email Address*	Organization*
<input type="text" value="lailah.maier@steinbeis-europa.de"/>	<input type="text" value="Steinbeis ZI GmbH"/>
Job Title	
<input type="text" value="Project Consultant"/>	

☐ Information on data processing and on photo and video recordings can be found here: https://cosmhyc.eu/fileadmin/user_upload/PrivacyPolicy_FinalEvent.pdf I have taken note of the information on data processing and on photo and video recordings.

[Register](#)

Figure 2 Registration to the COSMHYC Final Event

3.1 Project website

The project website is the central information hub in the COSMHYC communication strategy: all information needs to be found on it. Therefore, information about the Final Event was first published on the website before being further distributed.



Figure 3 Landing page of the project website featuring the COSMHYC Final Event

COSMHYC NEWS: JOIN US FOR THE COSMHYC FINAL EVENT!

03 - 02 - 2021

COSMHYC project is reaching its conclusion. Therefore, we invite you to join us for the final event at **Wednesday 24th of February 2021, 14:00-16:00 (CET)**.

David Colomar (European Institute For Energy Research in Karlsruhe, Germany), the coordinator of the project, will present the new COSMHYC compression solution and project's results. Project partners NEL Hydrogen, MAHYTEC and LBST will provide more details on the compressor prototypes and their techno-economic features. Additionally, Pietro Caloprisco, project officer at FCH JU, will give an overview of the challenges related to H2 compression at the beginning of the event.

The event will be held online. The participation is free but requires **registration**:
<https://register.gotowebinar.com/register/3009213104714825230>

Private B2B meetings, Thursday, 25th of February 2021, 14:00-16:00 (CET)

Registering for the COSMHYC final event, participants can book 15 minutes slots with individual project partners. These one-on-one calls will provide the opportunity to discuss technical or economical details of the COSMHYC solution.

The official invitation for the COSMHYC Final Event can be found [here](#).


[Back to list](#)

Figure 4 Article announcing the COSMHYC Final Event on the project website

To provide interested persons quickly with all necessary information about the final event an article in the news section was written, summing up the purpose, date and time, and topics of the event as well as the registration link. More detailed information was given in the official invitation. The official invitation was mainly created and used for direct mailing to the project's and partners' networks, but it was also integrated in the Downloads & Links section on the project website and linked to the article.



COSMHYC FCH JU project Online Final Event

Wednesday, 24th of February 2021, 14:00-16:00 (CET)

Compression of Hydrogen at Refuelling Stations is a key technical & economic challenge for the deployment of Hydrogen Mobility. Within the COSMHYC project, funded by FCH JU, an innovative hybrid compression solution improving performances and lowering costs of hydrogen compression is developed and tested. The partners EIFER (Germany), NEL Hydrogen (Denmark), MAHYTEC (France), LBST (Germany) and Steinbeis 21 GmbH (Germany) joined their efforts to combine mechanical compression and metal hydride compression, leveraging the advantages of both technologies. Currently the prototype is tested under real conditions in a comprehensive way.

Program of the COSMHYC Online Final Event

The event will be introduced by Pietro Caloprisco, project officer at FCH JU, who will give an overview of the challenges related to H2 compression. David Colomar (European Institute For Energy Research in Karlsruhe, Germany), the coordinator of the project, will present the new COSMHYC compression solution and project's results. Project partners NEL Hydrogen, MAHYTEC and LBST will provide more details on the compressor prototypes and their techno-economic features.

FCH JU, Pietro Caloprisco	H2 compression: What is at stake?
EIFER, David Colomar	COSMHYC compression solution and project results
NEL, Mikael Sloth	Optimized mechanical compressor prototype
MAHYTEC, Jean-Michel Tisserand MAHYTEC, Mathilde Bangoura	Building up a metal hydride compressor prototype
EIFER, Rami Chahrouh LBST, Jan Zerhusen	Techno-economic assessment

The participation is free but requires **registration**:
<https://register.gotowebinar.com/register/3009213104714825230>

Private B2B meetings, Thursday, 25th of February 2021, 14:00-16:00 (CET)

Registering for the COSMHYC final event, participants can book 15 minutes slots with individual project partners. These one-on-one calls will provide the opportunity to discuss technical or economical details of the COSMHYC solution.

For more information on the project, visit www.cosmhy.eu



COSMHYC project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement No 736122. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation program and Hydrogen Europe and NERGHY.

Figure 5 Official Invitation to the COSMHYC Final Event which was distributed as pdf

3.2 Project's Social Media channels and network

With 1,137 followers on Twitter and 950 contacts on LinkedIn, COSMHYC has built up a strong Social Media community mainly consisting of H2 professionals, researchers, cluster organisations, public bodies and other research/innovation projects. For the promotion of the COSMHYC Final Event, these networks have played a crucial role.

Communication activities on Social Media related to COSMHYC Final Event started three weeks before the event with posts announcing the event.



Figure 6 Social Media post on Twitter announcing the COSMHYC Final Event was seen 1,015 times

The objective of Social Media messages was to inform about the COSMHYC Final Event and encourage people to register. Project partners and the FCH JU were mentioned in several posts to increase their reach. Also, the hashtags #h2compression, #h2compressor and #HRS were used to tag the posts. The posts on the project's Social Media channels on Twitter and LinkedIn were seen 4,365 times in total.

Table 2 Social Media posts promoting the COSMHYC Final Event

Posts (Here are the Twitter posts. The text was only slightly adapted for LinkedIn)	Views on Twitter	Views on LinkedIn	Sum
23.02.2021 Interested in #innovative #h2compression ? Then join us for the final event of the @fch_ju funded project COSMHYC tomorrow, 2-4pm! We will present the project's achievements + learnings, whilst you may ask your questions to the consortium. More details http://ow.ly/dYqh50DHljw	232	214	446
18.02.2021 Have you saved your seat for the COSMHYC Final Event yet? Register now and join us next Wednesday! http://ow.ly/LXXn50DDrI6	305	172	477
16.02.2021 COSMHYC project developed an #innovative #h2compressor which improves energy #efficiency + reduces #costs of #HRS . Do you want to know how? Join us for the COSMHYC FINAL EVENT, 24th of February, 2-4pm! https://register.gotowebinar.com/register/30092	395	170	565

11.02.2021 The COSMHYC consortium developed an #innovative hybrid #compression solution, combining metal hydride + mechanical #compression . Want to know more? Scheduel private #B2B calls with project partners EIFER, @MaHyTec_SARL , @nelhydrogen & LBST! https://register.gotowebinar.com/register/30092	433	1,027	1,460
03.02.2021 🔊 We want to invite you all to the COSMHYC Final Event! The consortium will present the new COSMHYC hybrid compression solution and project's results. Join us! 📅 / 🕒 Wed. 24th Feb 2021, 14-16 CET http://ow.ly/TDQY50DpSvJ #ShowH2works #H2020 @fch_ju #FCEV #HRS	1,015	402	1,417
Total	2,380	1,985	4,365

Besides the project's Social Media channels, other channels were used to distribute information about the COSMHYC Final Event. Because of the FCH JU's excellent network in the H2 community, the consortium reached out for support promoting the event. The FCH JU communication team has been very helpful, sharing the event on their website and announcing it in their FCH News Report at the 18th of February 2021.

Additionally, the partners' networks and websites were key to transport the message about the event to the target groups. Therefore, partners were encouraged to distribute the project's official event invitation, share the Social Media posts and to announce the event on their companies' websites. Especially through direct personal mailings by partners many participants registered for the event.

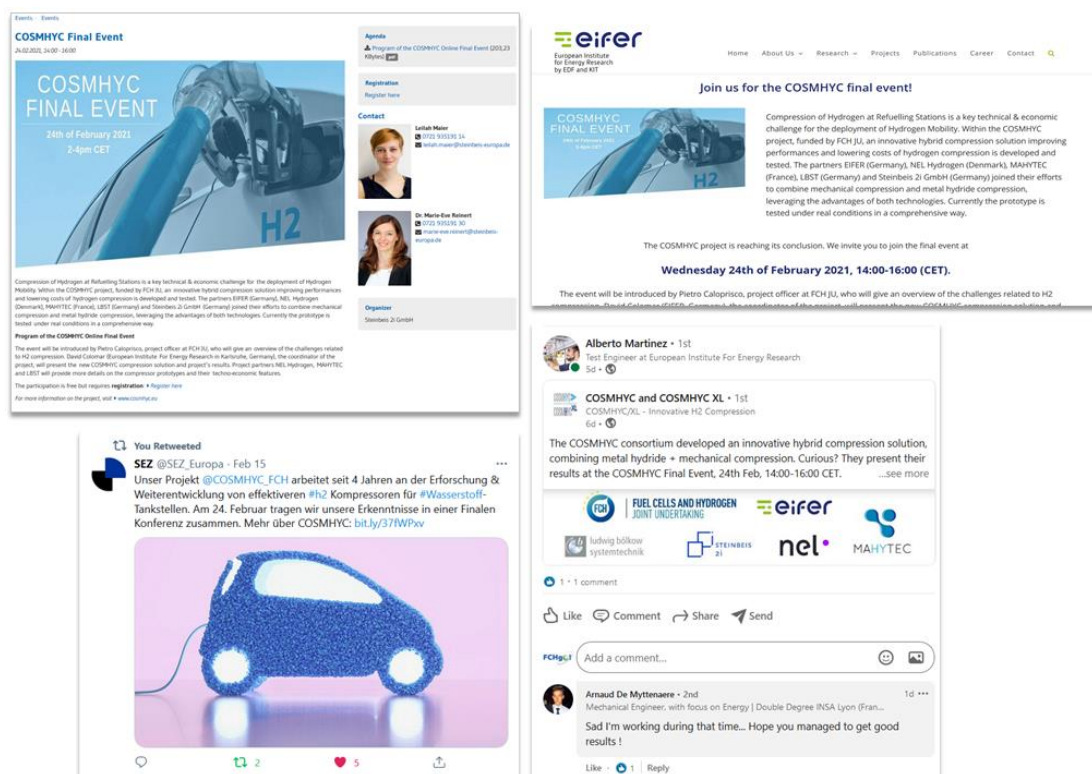


Figure 7 Examples of promotion for the COSMHYC Final Event on partners' websites and Social Media channels (left: S2i/SEZ website and twitter post; right: EIFER website and LinkedIn post by Alberto Martinez from EIFER)

To use synergies within the COSMHYC project series, the official invitation was sent to the advisory committees of COSMHYC XL and COSMHYC DEMO. Both boards received the invitation with much interest and several members registered for the event.

4. Execution of the COSMHYC Final Event

The COSMHYC Final Event took place as planned on Wednesday afternoon, 24th of February 2021. The web seminar started on time at 14:00 CET and ended with a slight delay of 15 minutes at 16:15 CET. No technical difficulties or similar occurred. Instead the event had a lively participation of its audience in the Q&A section and consistently high numbers of participants.

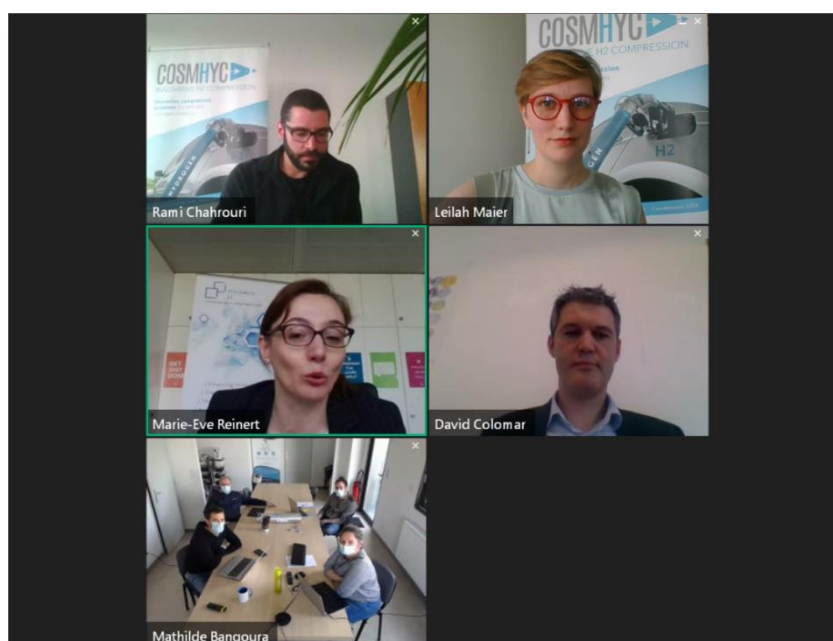


Figure 8 Screenshot of the first Q&A session during the COSMHYC Final Event

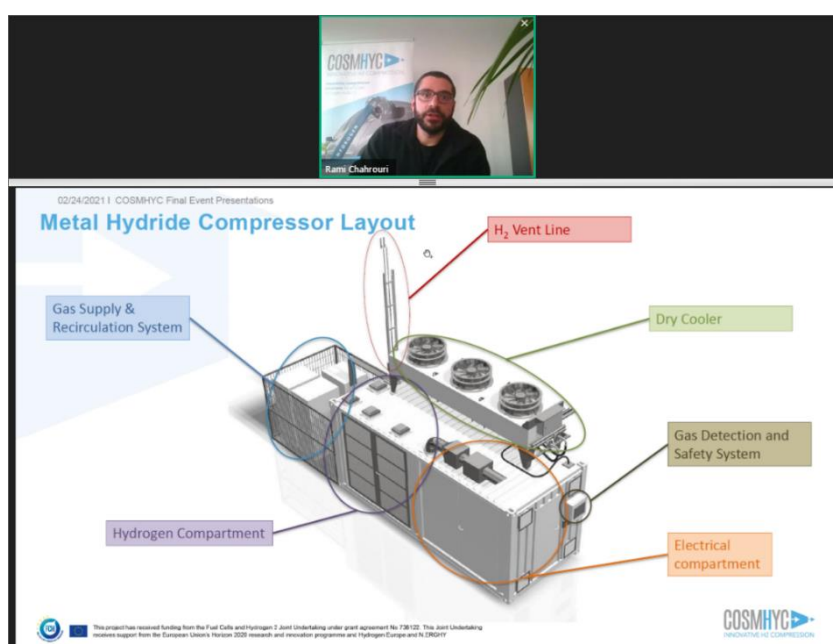


Figure 9 Screenshot of Rami Chahroui (EIFER) explaining the design of the COSMHYC prototype

4.1 Participation to the event

145 people registered for the COSMHYC Final Event and 104 attended the event. Thereby the “no-show-rate” is roughly a third, which is normal for online events. Very positive is the low termination rate during the event: Often many people join for the first few minutes or talks and then decide to leave again. In the COSMHYC Final Event, the participant numbers form a quite stable plateau slightly above 90 for the first hour and then slowly drop. At 16:00, the planned end time of the event, more than 80 people were still attending the event. This low termination rate speaks for the quality of the event as it shows participants were captured by it.

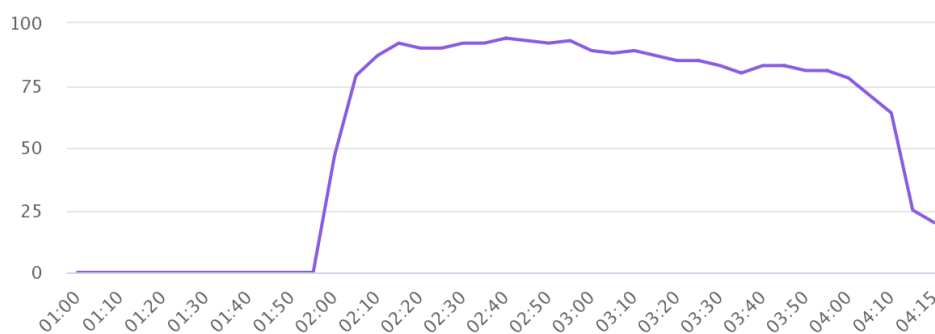


Figure 10 Participants to the COSMHYC Final Event over time

The COSMHYC Final Event reached its targeted audience and attracted key players of its field. The organisations and companies from which representatives were present in the audience can be broken down in the following groups:

Table 3 Composition of the audience of the COSMHYC Final Event

Targeted audience group	% of the audience
Manufacturers of HRS and H2 compressors	6,5
Supplier for H2 compression manufacturers	5
H2 industry / technology companies	10
Energy companies interested in H2	5
Vehicle manufacturer /supplier	6,5
H2 Cluster Organisations	6,5
Consulting	5
Research Organisations	24
Potential investors	1,5
Potential partners	3
Potential end-users	3
Others	24
Sum	100

The biggest group, constituting almost a quarter of the audience, were research organisations, including the German Aerospace Centre (DLR), several Fraunhofer Institutes and European Universities. Summing up the H2 technology sector (the first three rows of table 3), they were the second biggest group attending the COSMHYC Final Event. Following with some distance H2 cluster organisation (e.g. Hydrogen Europe and H2 Bayern) and vehicle manufacturers and suppliers (e.g. Daimler, Hyundai, and Toyota Europe) formed the next biggest groups.

Especially amongst the group of HRS and H2 compressor manufacturers, there were several competitors showing interest in the COSMHYC compression solution (e.g. Mehrer Compressions GmbH). This interest was also noticeable in the committed questions.

During the event more than 25 questions concerning different aspects of the hybrid COSMHYC compression solution (see Annex A1), which shows a vivid interest in the presented topic. In the Q&A sessions most of the questions were answered, but several addressed confidential IP matters and could thus not be answered.

The participants were almost all from Europe. The majority came from Germany and France, most likely because the partners are well connected in these countries. There were also participants from Belgium, Switzerland, Denmark, and England.

4.2 Participation to the B2B calls

The interest in the B2B calls was lower than expected. Only 7 calls were booked: 3 with David Colomar (EIFER), 2 with Mikael Sloth (NEL) and 2 with Jean-Michel Tisserand (MAHYTEC). Even though the option to book these private meetings was prominently featured in the official invitation, on the project website, and on the registration site and promoted through the project's Social Media channels, there were no bookings until the B2B calls were mentioned during the Final Event. The communication team's interpretation of this phenomenon is, that people did not want to commit to such a call before they knew what they could expect from the calls/project partners.

Taking this as a learning for the next time, the COSMYHC communication team considers the B2B calls still as successful. After mentioning the B2B calls during the Final Event, the bookings came in quickly and the resulting calls were rated as interesting by the partners.

4.3 Feedback to the event

Collecting feedback from the audience is crucial for good communication. Therefore, a feedback questionnaire was prepared and sent to the participants the day after the event. Already during the event several participants shared their impressions, all of them were positive:

- *"very interesting, thank you"*
- *"fine slides visible"*
- *"thanks and congrats to the organizers and speakers..."*
- *"Thank you for organizing this online meeting"*
- *"Interesting project!"*
- *"Well done! Thanks for the event ;-)"*
- *"Wonderful, thank you so much for the explanations."*
- *"Thanks, great job! :-)"*
- *"Thank you for all the very interesting information and good luck for COSMHYC XL"*

The day after the event, the participants were contacted via e-mail and invited to submit anonymous feedback. The questionnaire was implemented in google forms, what allowed easy distribution, anonymity of the participants and uncomplicated analysis.

The feedback questionnaire asked to rate several aspects of the event on a scale from 1 (bad) to 4 (great). Additionally, three open answer questions allowed for differentiated feedback.

Until Friday, 16th of February, 20 participants answered the questionnaire and their feedback was very positive. Some participants would have liked some more details about the COSMHYC

compression solution but understood and acknowledged, that the consortium did not share these details due to IP concerns.

Table 4 Results of the feedback questionnaire

Question	Number of answers	Average rating (maximum 4)
1.) How satisfied were you with the conference over all?	20	3,65
2.) Did the event meet your expectations?	19	3,53
3.) Was the event able to provide you with useful information?	19	3,63
4.) How was the technical set-up of the event?	20	3,8

5.) What about the event did you find particularly interesting or enjoyable?

- Overview over the chosen hybrid technology
- Well presented, with speakers well prepared and with good grasp on their subject
- Very fluent presentations. Good introduction. No technical failures whatsoever. The content was very good.
- The technical content of the presentations
- Understandable for non specialized persons
- Very clear presentations delivering practical and interesting content
- To hear about the different players of the project. The concrete results obtained, not only the good ones but also the improvement possibilities.
- Interesting to know the approach set by the Hydrogen enthusiasts.
- Q&A sessions, smooth running of the event, interesting insights into the project and its results
- The compressor set up of the prototype system.
- Technical content techno-economical review
- Good level of technical details without entering in too much fine details
- Metal hydride compression
- Nice and interesting presentations
- The results until now
- One of the best webinars I ever participated

6.) What could have been better regarding the event?

- I am researcher about materials, what I very liked was the initial explanation on thermodynamic and the process to obtain the metal alloys to build the compressor. Although, I was left wanting to know which metals were used. I could image which they are to get those results, but I had liked knowing a little bit more.
- "No remarks" | "no issues" | "nothing"
- More time for Q/A
- As this COSMHYC is considered part of the whole picture (H2 Market) would be interesting to include part of overall H2 industry along as brief info over progress of infrastructure made on rest of H2 partners
- Some figures was a bit too small to look at them correctly
- visit of the pilot but not possible due to COVID
- Shorter intro / context
- Some video/illustration of the live tests of the compressors
- Obviously more information, but I understand that it cannot be to avoid plagiarism and possible patents.
- The presentations could have gone more into detail.

The last feedback question addressed the participants impression of the COSMHYC project in general. Even there, the participants gave a very good evaluation.

7.) Do you have any Feedback for the COSMYHC project over all?

- Looking forward for further updates
- I can just say that I think it is a good project with very good professionals and of course good results
- Interesting R&D
- Nice project, good initiative! I want to be a high-pressure hydrogen partner in the future!
- Good job, interested in following the follower-projects and their results
- Not yet, still studying
- Congratulation for your work!
- Very interesting. Thank you
- very interesting developments, I am interesting to know where everything goes
- Looking forward for further updates

Main conclusion

The COSMHYC Final Event was a well-attended event and the achievements of COSMHYC have been presented to a large number of stakeholders and with considerable interest from the community. The final conference raised awareness for the COSMHYC compression solution among the hydrogen professionals, especially from the compression sector. Moreover, it provided the partners with an opportunity to improve their network for future projects and forge relationships for future commercial activities through the B2B calls.

The participants gave very good feedback on the event itself, but also about their impression of the COSMHYC project overall. Through the event and the raised awareness for the COSMHYC compression solution, interest in the follow-up projects COSMHYC XL and COSMHYC DEMO was generated, as statements from the participants showed. The vivid participation of the audience in the Q&A section indicates a high interest in the presented compression solution and the low rate of people leaving during the event shows that the audience was captured by the talks.

In the B2B calls after the event, the partners were approached by participants interested in the project results. Some of them showed interest in engaging in future research or even business cooperation.

In conclusion, the COSMHYC Final Event was a major success. It disseminated the project's achievements amongst the targeted audience and contributed to the positive image for the project, consortium and COSMHYC compression solution.

ANNEX

A1. Q&A questions of the COSMHYC Final Event

- What about the recycling capacity of metal hydrides?
- What does it mean to have a CAPEX of €/kg/day?
- What share of the CAPEX of the MH compressor has the metal hydride itself?
- is this "intoxication" of powder reversible?
- how does it compare as purity with the H₂ usually used and seen in fuel cell?
- did you use some special H₂ blowers for the hydrogen recirculation please?
- What material inside the H₂ could/pollute spoil the hydride?
- What kind of oil is used for cooling the hydride?
- Question for Mikael, cost of 105/Kg/day. Are the costs for cooling included?
- Have you considered the option that liquid H₂ may be used as transportation fuel?
- How have you integrated heat of hybrid compressors? What is the total energy consumption of the prototype?
- Time frame for commercial availability of the NEL Mechanical compressor?
- ideas about availability (days/ year)?
- How about the influence towards hydrogen quality using this new technology? Are there any new possible contaminants that can enter the hydrogen which were not foreseen in the ISO 14687 or EN 17124 standards?
- Have you compared your new compression technique with electrochemical compression?
- and finally, the present TRL is?
- kg/day capacity of the unit shown?
- If I understand correctly, the hydride compression process is a batch process. You have to fill a hydrides tank with h₂, heat it up and then allow the H₂ to exit, achieving the pressure rise. Is this the case?
- To achieve a continuous process, you have to put two systems working in parallel. Adsorption / desorption stages... I would like to get confirmation of this process of operation of the system. The prototype shown by Rami, for which H₂ flow is it designed? What inlet and outlet pressure?
- What is the expected durability of these hydride-based compression systems?
- Could Mahytec or David give an idea/number of the ratio of compressed gas inside the reactor to actually delivered gas from the reactor at 450 bar?
- Which Metal hydrides did you use?
- rare earth element are clearly to be avoid for the mentioned reasons, but for the same reasons, there are other element - non rare earth - to be avoided i.e. other critical elements. S NA d finally do you success to find the good alloy without those elements?
- Question how OPEX costs are reduced by large scale production?
- Can you give more details on how you selected the alloy? Was it from literature survey or you optimised the composition experimentally or using some other tools?
- Which elements you selected for the alloys (A1-A2-A3)?

- David, can you update and/or advise at what stage are the overall projects of Production and shipment of green H₂ from Portugal and shipping it into NL & Germany Hubs-ports, are all progressing simultaneously (production side and receiving terminals)?
- sensitivity to H₂O?