



What's new ?

Happy New Year 2022


The FLEXnCONFU consortium made important progress in 2021, looking forward to exciting challenges in 2022!

 Partners from Work Package 1 (WP) 'Scenario Analysis and requirements definition' obtained first results in 2021:


- Identification of preliminary FLEXnCONFU layouts;
- Evaluation of CC performance;
- Preliminary thermo-economic models of the proposed FLEXnCONFU layouts;
- Analysis of EU electrical markets: a public deliverable will be publicly released in March 2022.

 In the last months, WP2 'Combustion system compatibility with non-conventional fuels' partners proposed:

- Guidelines on the **operation of the demo site with hydrogen injection** and design of the gas turbine combustion chamber for higher H₂ contents.
- Guidelines on the **redesign of gas turbine T100 combustion chamber and turbomachinery operation for ammonia combustion**.
- First **modelling evaluation of the impact of H₂ and NH₃ combustion processes**.

 WP3 partners 'Integrated plant: balance of plant innovations, control and dynamics' deal with the modelling of both P2Ha and P2A system to evaluate their transient behaviour and identifying suitable control strategies. Notable progress have been made:

- **Several optimisation studies have been performed**, seeking an optimum reactor diameter for obtaining as much ammonia as possible at outlet;
- Different **thermal behaviours of reactor walls have been modelled** to understand the best possible configuration for the reaction to take place;
- A **model for a PEM electrolyser** has been developed;
- Both **control narratives for power-to-hydrogen and power-to-ammonia** have been developed.

 WP4 partners 'Advanced solutions for Power to Ammonia' showed interesting results as well:

- A **highly flexible ammonia reactor** operating at 300°C and 80 bars with a commercial catalyst has been outlined;
- The **layout of the P2A integrated system has been defined** and piping and instrumentation diagram/drawing (P&ID) has been developed;
- Preliminary works have been carried out defining an **action list and the data**



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requirement for the machine modification.

👉 From WP 5 ‘Integration and demonstration’, demo site partner EDPP delivered **the implementation and demonstration plan for the Power-2-Hydrogen-2-Power (P2H2P) concept in Ribatejo power plant**. In relation, another **report on health and safety measures** for the project’s demonstration and replication was released.

FLEXnCONFU consortium had its first Review Meeting with the European Commission last December and had the opportunity to present its preliminary results for the first 18 months of the project.

As the project will soon end its second year in March 2022, many deliverables are expected in the coming months to assess and evaluate technical requirements and commercial opportunities of the FLEXnCONFU concepts. The first stakeholder vision report will be issued publicly in March 2022.

The second part of 2021 was also a great success from a communication and dissemination perspective. The consortium performed in major policy, industrial and technical conferences and fairs:

- The **EU Sustainable Energy Week (EUSEW)** in a Workshop Session “[Energy Storage Systems: Key Players for the European Energy Transition](#)”.
- The **International Gas Turbine Conference (IGTC)** held by ETN Global by presenting a [Technical Paper on “Ammonia Blended Fuels”](#) and a virtual booth.
- Presentations of 3 Technical Papers at the **International Conference on Applied Energy (ICAE)**.
- A [virtual exhibition](#) at the 15th SET Plan Conference held by the Presidency of the European Council and the European Commission.
- A [virtual presentation](#) at the latest ENLIT Europe conference.
- A [presentation at the Ammonia Energy Association Conference 2021](#).
- Participation at the ‘[Hydrogen and Beyond](#)’ [webinar](#) held by SolarFuelsNOW.

The consortium has been very active on social medias and increased awareness and understanding of the project as well.

Follow us on social medias 



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FLEXNCONFU NEWSLETTER N.3

Discover FLEXnCONFU!

Interview with Edigio Pucci – Baker Hughes



One of the objectives of the FLEXnCONFU project is to increase gas turbine fuel flexibility through the design and development, as well as test a gas turbine combustion system able to burn hydrogen and/or ammonia. To learn more about the challenges of developing and scaling up gas turbine combustion systems able to burn ammonia, we met with Egidio Pucci, Combustion Technology Leader at Baker Hughes.

Have the full interview!



[HERE](#)



Interview with Hannes Laget – ENGIE Laborelec



Increasing the fuel flexibility to carbon-neutral fuels and energy storage could be sustainable solutions as resilience against future energy crunches. ETN caught up with Hannes Laget, Project Manager, Green Thermal Lab at ENGIE Laborelec, with whom we discussed ENGIE's involvement in the FLEXnCONFU project.

Have the full interview!



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