



# AMHYCO Horizon 2020 project launch

Officially launched on 1 October 2020, **AMHYCO is an EU-funded Horizon 2020 project that will last 4 years from 2020 to 2024.** This international project consists of **12 organisations from 6 European countries and one from Canada** and is led by the **Universidad Politécnica de Madrid (UPM)**. AMHYCO will benefit from the worldwide experts in combustion science, accident management and nuclear safety in its Advisory Board.

“The AMHYCO project is a chance to improve the way severe accidents are managed regarding combustion risk in nuclear power plants” says the project’s coordinator, Associate Professor Gonzalo Jiménez from the UPM.

**AMHYCO will target an area that has not been addressed in previous EU and OECD projects: hydrogen and carbon monoxide (H<sub>2</sub>/CO) combustion risk management in severe accidents for nuclear power plants.**

**Context:** Severe accidents in nuclear power plants are costly and potentially dangerous to both humans and the environment. To prevent and/or mitigate the consequences of these accidents, it is paramount to have adequate accident management measures in place. **During a severe accident, combustible gases can be released, leading to a potential explosion risk in the nuclear containment building.** These gases — including hydrogen and carbon monoxide — need to be managed to avoid threatening the containment integrity, which can result in the releases of radioactive material into the environment.

The Severe Accident Management Guidelines (SAMG), which guide the reactor operators on how to handle the response of the nuclear power plant against severe accidents, need to be regularly updated and include knowledge gained from international efforts, including recent and ongoing research projects. **AMHYCO will contribute to this objective by improving the understanding of H<sub>2</sub>/CO combustion and incorporating this knowledge into SAMGs.**

**Goals:** The main objective of the AMHYCO project is to propose innovative enhancements in the way combustible gases are managed in case of a severe accident in currently operating reactors. To reach this main objective, the AMHYCO project has three specific objectives:

## PROJECT DETAILS

**Project Name:** Towards An Enhanced Accident Management Of The Hydrogen/CO Combustion Risk (AMHYCO)

**Project No:** 945057

**Start Date:** 01/10/2020

**Project Duration:** 48 months

**Project partners:** Universidad Politécnica de Madrid and Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas - CIEMAT (Spain), Institut de Radioprotection et de Sûreté Nucléaire, Centre national de la recherche scientifique CNRS and LGI Consulting (France), Forschungszentrum Jülich, Framatome GmbH and Ruhr-Universität Bochum (Germany), Jožef Stefan Institute (Slovenia), Energorisk (Ukraine), Nuclear Research and Consultancy Group (Netherlands) and Canadian Nuclear Laboratories (Canada).

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1. **To improve the Severe Accident Management Guidelines for both in-vessel and ex-vessel phases with respect to combustible gases risk management, using theoretical, simulation and experimental results.**
  2. **To experimentally investigate phenomena that are difficult to predict theoretically: H<sub>2</sub>/CO combustion and PARs (Passive Autocatalytic Recombiners) behavior under realistic accidental conditions, taking into account their interaction with safety systems.**
  3. **To improve the predictability of analysis tools - Lumped Parameter (LP), 3D and Computational Fluid Dynamic (CFD) codes - used for explosion hazard evaluation inside the reactor containment and providing support to SAMGs design and development.**
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The AMHYCO project idea and program have been supported by the NUGENIA Executive Committee, receiving the NUGENIA label, awarded to projects that show a high-level of quality in their research proposal.

**How to contribute:** The AMHYCO project will set up and manage an international End-User Group to provide information on the AMHYCO achievements, seek feedback when relevant, and attract potential future users. If your organisation is interested in participating in the End Users Group, please contact the AMHYCO project coordinator: **gonzalo.jimenez@upm.es**.

**Visit the official website:** [www.amhyco.eu](http://www.amhyco.eu)

**EU CORDIS webpage:** <https://cordis.europa.eu/project/id/945057>