

Recent Activities on Nuclear Hydrogen Production

New Coordinated Research Project Assessing technical and economic aspects of nuclear hydrogen production for near-term deployment

The CRP is based on the successful completion of the previous CRP on Examining the Techno-Economics of Nuclear Hydrogen Production and Benchmark Analysis of the IAEA HEEP Software, and extensive feedback from MSS' experts participating in other IAEA technical meetings and activities on nuclear hydrogen production.

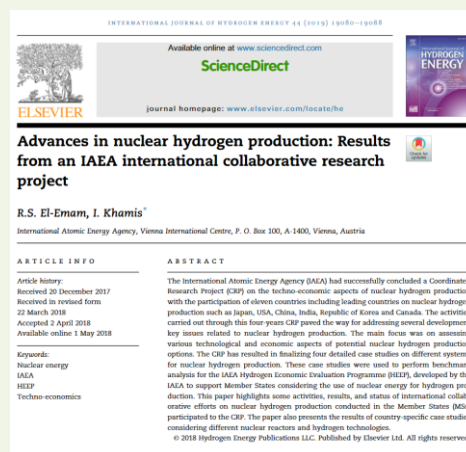
The main task that this CRP tries to tackle is to investigate the potential upscaling and opportunities for maturity of nuclear hydrogen production technologies currently under development. It also tries to analyse the techno-economics and safety considerations, as well as the associated environmental and social impacts of commercial nuclear hydrogen production on worldwide and on MSs. The CRP is conducted by the Nuclear Power Technology Development Section.

The overall objective of this CRP is to: assess gained experience from R&D on nuclear hydrogen production in MSs; and potential near-term deployment of nuclear hydrogen production. The CRP is expected to develop a roadmap for upscaling and commercialization of nuclear hydrogen production and establish milestone recommendations to MSs on nuclear hydrogen production aiming at providing a better understanding of the feasibility of nuclear hydrogen as part of the future hydrogen economy.

2019 Publication

Outreach of the Results of the Successfully Concluded Coordinated Research Project on Techno-Economics of Nuclear Hydrogen Production and Benchmark Analysis of the IAEA HEEP Software

In conjunction with the foreseen technical document reporting the findings and outcomes of the research and related activities conducted through this CRP, the IAEA published a peer review paper in the International Journal of Hydrogen Energy, highlighting the main achievements of the CRP along with the earlier paper published at the same journal in 2017.



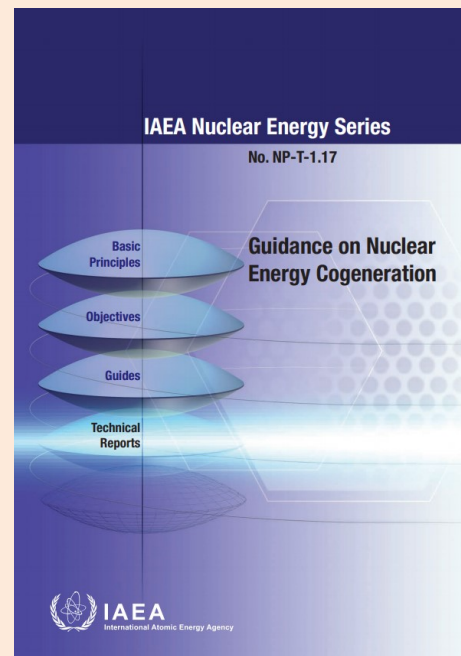
IAEA Publications

New Nuclear Energy Series Publication (2019)!

Industrial Applications of Nuclear Energy (NP-T-1.17)

Cogeneration, i.e. the production of electricity and heat, has proven to be a highly efficient and environmentally attractive option for energy conversion. Nuclear cogeneration could be considered as an option in light of actions on climate change. However, nuclear cogeneration is not widely deployed. This publication provides a quick introduction to the advantages, experience, and future planning for implementation of nuclear cogeneration. It also highlights some demonstration projects that were developed in the past in connection with industries, describing technical concepts for combined nuclear-industrial complexes. The publication is intended to be of interest to users in academia and industry as well as government agencies and public institutions requiring basic information on various aspects of using nuclear power for cogeneration.

(download or order hard copies [here](#))



New Publication on Nuclear Hydrogen Production (2018)

Examining the Technoeconomics of Nuclear Hydrogen Production and Benchmark Analysis of the IAEA HEEP Software (TECDOC 1859)

This publication documents the results achieved by participants of an IAEA coordinated research project (CRP) related to hydrogen production using nuclear energy. The CRP participants performed a generic benchmark analysis for various scenarios of hydrogen production and against other codes built on different platforms and models. The research report highlights various aspects of nuclear hydrogen production based not only on national but also international trends. It considers important technical aspects of coupling nuclear reactors to hydrogen plants and the challenges for nuclear hydrogen production compared to using steam or solar energy.

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IAEA Publications

**Two related Nuclear Energy Series documents
were published in 2017:**

Industrial Applications of Nuclear Energy (NP-T-4.3)

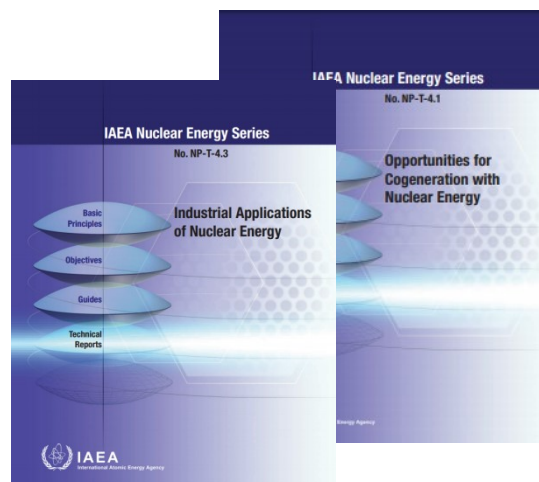
This publication provides a detailed overview of the potential use of nuclear energy for industrial systems and/or processes which have a strong demand for process heat/steam and power, and on the mapping of nuclear power reactors proposed for various industrial applications. It describes the technical concepts for combined nuclear-industrial complexes that are being pursued in various Member States, and presents the concepts that were developed in the past to be applied in connection with some major industries. It also provides an analysis of the energy demand in various industries and outlines the potential that nuclear energy may have in major industrial applications such as process steam for oil recovery and refineries, hydrogen generation, and steel and aluminium production. The audience for this publication includes academia, industry, and government agencies.

(download or order hard copies [here](#))

Opportunities for Cogeneration with Nuclear Energy (NP-T-4.1)

This publication presents a comprehensive overview of various aspects relating to the application of cogeneration with nuclear energy, which may offer advantages such as increased efficiency, better cost effectiveness, and reduced environmental impact. The publication provides details on experiences, best practices and expectations for the foreseeable future of cogeneration with nuclear power technology and serves as a guide that supports newcomer countries. It includes information on systems and applications in various sectors, feasibility aspects, technical and economic details, and case studies.

(download or order hard copies [here](#))



Meetings on Nuclear Hydrogen Production 2019 – 2020

Technical Meeting on the Role of Nuclear Hydrogen Production in a Low Carbon Economy	08 – 10 April 2019	Vienna Austria
Technical Meeting on Specific Considerations for the Deployment of Nuclear Cogeneration Projects	22 – 24 July 2019	Vienna Austria
Technical Meeting on Assessing the Deployment of Small and Medium Sized or Modular Reactors and High Temperature Reactors for Cogeneration Applications	02 – 04 Sept 2019	Vienna, Austria
Second Research Coordination Meeting on Assessing Technical and Economic Aspects of Nuclear Hydrogen Production for Near Term Deployment	01 – 03 April 2020	Vienna, Austria
Technical Meeting on Assessing Technologies that Enable Nuclear Power to Produce Hydrogen	22 – 24 June 2020	Vienna, Austria
Technical Meeting on Potential Schemes for Licensing Nuclear Cogeneration Plants	01 – 03 Sept 2020	Vienna, Austria