



IAEA

International Atomic Energy Agency

Atoms for Peace

Technical Meeting
to
Assess the Prospects of Coupling
Non-Electric Applications to
High Temperature Nuclear Reactors

IAEA Headquarters
Vienna, Austria

19–21 November 2018

Ref. No.: EVT1701791

Information Sheet

A. Background

There has been increasing interest in high temperature reactor (HTR) technology in Member States, especially its use for non-electric applications. Prominent ongoing programmes include the already commissioned HTR-10 and the proposed HTR-PM in China, already commissioned high temperature engineering test reactor (HTTR) in Japan, the pebble bed modular reactor (PBMR) programme in South Africa, and developments in the Next Generation Nuclear Plant (NGNP) project in the United States of America. The main potential non-electric application of HTR technology is hydrogen production. Other potential applications include seawater desalination, based on the recovery of waste

heat from HTRs, high temperature process heat for industrial applications, oil sand production, steam assisted methane reforming, coal gasification, etc.

The use of nuclear reactors for low temperature process heat has already been demonstrated. Even for high temperature applications, several potential applications have been identified that have major benefits, including support for climate change mitigation through the reduction of greenhouse gas emissions, the preservation of fossil fuels for more valuable applications, support for energy security and curbing the volatility of fossil fuel prices. Yet, there are challenges to such high temperature applications, especially for hydrogen production. Some of these challenges include the overall safety of a cogeneration plant, economics related to the cost structure of nuclear projects, nuclear cogeneration plant licensing, selecting a suitable business model for management, the misalignment of planning horizons and public safety perceptions regarding co-location.

In support of its Member States, the International Atomic Energy Agency (IAEA) has developed the Hydrogen Economic Evaluation Programme (HEEP) to provide support in analysing the economic aspects of hydrogen production using nuclear energy. This meeting will discuss further steps towards the realization of nuclear hydrogen production using HTRs and summarize potential strategies to align nuclear reactors with hydrogen production plants to lower entry barriers.

B. Objectives

The purpose of this event is to: 1) exchange up-to-date information on types of foreseen potential high temperature reactors suitable for hydrogen production; 2) consider near term commercial technologies available for hydrogen production; 3) address socioeconomics and environmental considerations associated with nuclear hydrogen production; 4) assess market potential, economics and other related challenges, including potential upscaling of current research and development and other technologies involved in nuclear hydrogen production; and 5) draw a clear picture of the role of nuclear hydrogen production as a player in the future hydrogen economy.

C. Expected Output

The expected output of this event is to collect up-to-date information on the status of technologies for nuclear hydrogen production. A technical report, summarizing discussions held and results presented during the event, will identify the status of progress made in nuclear hydrogen production at currently available demonstration plants, the challenges and prospects for large scale hydrogen production and the status of promising technologies.

D. Administrative and Financial Arrangements

Designating Governments will be informed in due course of the names of the selected candidates and will at that time be given full details of the procedures to be followed with regard to administrative and financial matters.

The costs of the event are to be borne by the IAEA; no registration fee will be charged to participants. Travel and subsistence expenses of participants will not be borne by the IAEA. Limited funds are, however, available to help meet the cost of attendance of certain participants. Such assistance may be offered upon specific request to normally one participant per country provided that, in the IAEA's view, the participant on whose behalf assistance is requested will make an important contribution to

the event. The application for financial support should be made at the time of designating the participant.

The organizers of the event do not accept liability for the payment of any costs or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from or attending the meeting, and it is clearly understood that each Government, in designating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.

E. Application Procedure

Designations should be submitted using the attached Participation Form (Form A). Completed forms should be endorsed by the competent national authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) and returned through the established official channels. They must be received by the IAEA not later than **14 September 2018**. Designations received after that date or applications sent directly by individuals or by private institutions cannot be considered. Designating Governments will be informed in due course of the names of the selected candidates and at that time full details will be given of the procedures to be followed with regard to administrative and financial matters.

For Member States receiving technical cooperation assistance, applications for financial support should be made at the time of designating the participant.

F. Working Language

The working language of the event will be English with no interpretation provided. All communications, abstracts and papers must be submitted in this language.

G. Venue

The event will commence on Monday, 19 November 2018. Exact details of the venue will follow in direct correspondence between the IAEA organizers and the participants.

H. Visas

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria as soon as possible.

I. Organization

Official correspondence regarding the technical aspects of the event should be addressed to the Scientific Secretary:

Mr Ibrahim Khamis

Nuclear Power Technology Development Section
Division of Nuclear Power
Department of Nuclear Energy
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 22822

Fax: +43 1 26007

Email: I.Khamis@iaea.org

Official correspondence regarding administrative issues should be addressed to the Administrative Secretary:

Ms Mercedes Nicole Córdova Jurak

Nuclear Power Technology Development Section
Division of Nuclear Power
Department of Nuclear Energy
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 VIENNA
AUSTRIA

Tel.: +43 1 2600 22815

Fax: +43 1 26007

Email: M.Cordova-Jurak@iaea.org

Participation Form

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To be completed by the participant and sent to the competent official authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA), Vienna International Centre, PO Box 100, 1400 Vienna, Austria, either electronically by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary (I.Khamis@iaea.org) and to the Administrative Secretary (M.Cordova-Jurak@iaea.org).

Participants who are members of an invited organization can submit this form to their organization for subsequent transmission to the IAEA.

Deadline for receipt by the IAEA through official channels: 14 September 2018

Family name: (e.g. Smith)		First name(s): (e.g. John)	Mr/Ms
Institution:			
Full address:			
For urgent communications please indicate:	Tel.:		
	Fax:		
	Email:		
Nationality:	Designating Government or organization:		
Mailing address (if different from address indicated above):			
Do you intend to submit a presentation?		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Title:			

Grant Application Form

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To be completed by the applicant and sent to the competent official authority (e.g. Ministry of Foreign Affairs, Permanent Mission to the IAEA, or National Atomic Energy Authority) of his/her country for subsequent transmission to the International Atomic Energy Agency (IAEA), Vienna International Centre, PO Box 100, 1400 Vienna, Austria, either electronically by email to: Official.Mail@iaea.org or by fax to: +43 1 26007 (no hard copies needed). Please also send a copy by email to the Scientific Secretary (I.Khamis@iaea.org) and to the Administrative Secretary (M.Cordova-Jurak@iaea.org).

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Family name: (e.g. Smith)	First name(s): (e.g. John)	Mr/Ms:
Mailing address:	Tel.:	
	Fax:	
	Email:	
Date of birth (yy/mm/dd):	Nationality:	

1. Education (post-secondary):

Name and place of institution	Field of study	Diploma or Degree	Years attended	
			from	to

2. Recent employment record (Starting with your present post):

Name and place of employer/ organization	Title of your position	Type of work	Years worked	
			from	to

3. Description of work performed over the last three years:

4. Institute's/Member State's programme in field of meeting:

Date: Signature of applicant: _____

Date: Name, signature and stamp of Ministry of Foreign Affairs, Permanent Mission to the IAEA or National Atomic Energy Authority _____