



International Atomic Energy Agency

INPRO Dialogue Forum 8. Toward Nuclear Energy System Sustainability: Economics,
Resource Availability, and Institutional Arrangements

PROSPECTUS

Project Number & Title:	INT2017. Capacity building in long-range strategic nuclear energy planning for global sustainability.
Place (City, Country):	Vienna, Austria
Dates:	26 - 29 August 2014
Deadline for Nominations:	25 May 2014
Organizers:	The International Atomic Energy Agency (IAEA)
Host Country Organizer:	IAEA Dialogue Forum Director: Mr. Andriy Korinny, Nuclear Engineer, INPRO Section, Division of Nuclear Power, Department of Nuclear Energy; tel.: +43 1 2600 21392, e-mail: A.Korinny@iaea.org IAEA Programme Management Officer: Ms. Patricia Godoy-Kain, Program Management Officer, Department of Technical Cooperation; tel.: +43 1 2600 22413, e-mail: P.Godoy-Kain@iaea.org IAEA Technical Officer: Mr. Andriy Korinny, Nuclear Engineer, INPRO Section, Division of Nuclear Power, Department of Nuclear Energy; tel.: +43 1 2600 21392, e-mail: A.Korinny@iaea.org
Language:	English
Purpose:	<p>The traditional objective of the INPRO Dialogue Forum is to bring together nuclear technology users and technology holders from interested IAEA Member States to discuss issues related to sustainable nuclear energy development and deployment. This dialogue facilitates mutual understanding of the needs and potential roles of technology users and the possibilities and limitations of technology holders. To date, seven INPRO Dialogue Forums have been held since 2010. (See details in www.iaea.org/INPRO). The last forum in particular focused on sustainability assessment of nuclear energy system (NES) using the INPRO Methodology as performed by holders of evolutionary nuclear reactor technologies.</p> <p>This 8th dialogue forum will discuss nuclear energy system sustainability on three aspects for sustainable development, namely economics, resource availability and institutional arrangements. These three sustainability aspects correspond to the INPRO manual volumes on Economics, Environmental Impact by Depletion of Resources, and Infrastructure. The volumes are among those currently being revised and updated as part of INPRO five-year plan to</p>

	<p>incorporate various lessons learned from past NESAs, results of collaborative projects and technical feedbacks from Member States and in-house experts. The revised volumes will be communicated to the participants of the Dialogue Forum through presentation by IAEA experts. Participants from Member States, technology holder countries and international organizations are expected to work on the draft volumes, by reviewing or assessing criteria of choice for a NES, and discuss their findings during the meeting.</p>
Expected Output(s):	<p>Participants will gain better understanding of the role of economics, resource availability and institutional arrangements toward sustainability of nuclear energy systems.</p> <p>By discussing of the draft INPRO methodology manuals, participants can contribute to further improvement of INPRO assessment method in the areas of Economics, Environmental Impact by Depletion of Resources, and Infrastructure. The forum will confirm validity of the assessment method in three areas for different types of NES.</p> <p>The forum can address harmonization of INPRO approach with other approaches.</p>
Scope and Nature:	<p>The Dialogue Forum will comprise presentations by the IAEA to discuss the revision and updates of the INPRO manual volumes on Economics, Environmental Impact by Depletion of Resources, and Infrastructure.</p> <p>National experts are expected to present reviews and assessment findings on one of the aspects: economics, resource availability and institutional arrangements. Discussion on one or more of the revised draft INPRO manuals will be appreciated and can include:</p> <ul style="list-style-type: none"> - Economics: <i>estimation of cost of nuclear electricity, cost models, attractiveness for investment, risk of investment, construction schedule, factors influencing costs (e.g. type of contracts, discount rates, number of reactors, design options, like cooling towers or special seismic/flooding protection systems), economics to add domestic fuel cycle.</i> - Resource availability: <i>balance of demand and available resources of fissile/fertile materials (primary and secondary resources), available resources of now-renewable materials, power supply during construction/operation/decommissioning, end use of uranium non-renewable resources (net energy delivered per amount of resources consumed), amortization time for adequate net energy output.</i> - Institutional arrangement: <i>legal issues, regulatory body organization, human resources, political support, public support, public information, involvement of local industry, cost-benefit study for industrial infrastructure, cost-benefit study for governmental infrastructure, actions to minimize cost of infrastructure, arrangements for emergency preparedness, regional and international arrangements.</i> <p>The findings are to be submitted to the organizer prior to the meeting, which is a pre-requisite for provision of financial assistance for participants when applicable.</p> <p>Break out sessions focusing on each of the aspects will be held following the presentations, to recapitulate and elaborate on the findings and provide recommendations on further improvement of the INPRO assessment method.</p>
Background	<p>To assist Member States in long range and strategic planning of nuclear energy</p>

information:

programmes, INPRO is offering support to Member States in assessing sustainability of their existing or planned nuclear energy systems (NES) using the INPRO Methodology, considering that nuclear power programmes have implications and obligations extending well beyond 100 years.

In 2001-2008 the IAEA has developed a methodology of assessment of the sustainability of nuclear energy systems under the aegis of International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO). Published in 2008 the INPRO methodology manual comprises seven areas of assessment: Economics, Infrastructure, Waste Management, Proliferation Resistance, Physical Protection, Environment and Safety. It provides an assessor with approximately 150 criteria to be fulfilled to achieve sustainable nuclear energy system. When some of those criteria are not fulfilled, follow up actions are to be defined to close gaps which is the input for strategic nuclear energy planning. There are altogether 9 volumes on Overview, Economics, Infrastructure, Waste Management, Proliferation Resistance, Physical Protection, Environment, Safety of Nuclear Reactors, and Safety of Nuclear Fuel Cycle Facilities.

As part of the INPRO five-year plan, efforts have been undertaken to revise and update the INPRO methodology manual (IAEA-TECDOC-1575 Rev.1, Volume 1-9) to incorporate various lessons learned from past NESAs by Member States and also results of INPRO Collaborative Projects, e.g. GAINS, ENV, PRADA, PROSA. A preparatory meeting was held in November 2012 to identify relevant experts, create a task group and set up priority for the technical update based on the collected proposals as well as identify milestones and contributions. A second set of proposals that will require additional time and resources beyond the current means was likewise pinpointed, to be elaborated. During the 7th INPRO Dialogue Forum in November 2013, another set of important feedbacks were received from vendors of evolutionary water-cooled reactors mainly applicable in the area of safety of nuclear reactors, and also from participants of the meeting.

The update INPRO manual will comprise a total of 10 volumes, i.e. one volume (Environment) has been split in two separate volumes (Environmental Impact of Stressors, Environmental Impact by Depletion of Resources) in line with the recommendations from Member States.

To obtain high quality assessments based on the update INPRO manual, the INPRO Section recognizes the importance of support to be provided by the IAEA to Member States. NESAs Support Package which was developed between 2008 and 2013 will be expanded and elaborated based on discussions between national and international experts during the Dialog Forums. A Dialogue Forum is considered as a proper venue for such purpose, engaging Member States, technology holders and international organizations to further confirm the revision, and also to verify the applicability of the assessment for different types of NES. Participation of international organizations is expected to understand harmonization of the methodology with other approaches.

Preparatory meetings will be held accordingly upon the request from invited speakers for better planning and ensuring appropriate materials from external participants can be delivered in the Dialogue Forum. The activity will be implemented with active participation of related experts in the IAEA: Division of Nuclear Fuel Cycle and Waste Technology, Division of Nuclear Power, Division of Nuclear Installation Safety, Planning and Economic Studies Section.

<p>Participation:</p>	<p>Member States are invited to nominate more than one participant for this meeting.</p> <p>The meeting is open to 50 or more participants from Albania, Algeria, Argentina, Armenia, Bangladesh, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Egypt, Estonia, Finland, France, Germany, Ghana, Hungary, India, Indonesia, Israel, Italy, Japan, Jordan, Kazakhstan, Kenya, Republic of Korea, Kuwait, Libya, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Niger, Nigeria, Norway, Pakistan, Poland, Romania, Russian Federation, Saudi Arabia, Slovakia, Slovenia, South Africa, Spain, Sudan, Sweden, Switzerland, Syria, Thailand, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uruguay, Vietnam, Yemen, and the European Commission.</p> <p>Participants include representatives from national authorities, utilities, technical support organizations (TSOs), and nuclear energy programme implementing organizations (NEPIOs).</p> <p>The participants from developed countries and from the countries which are not recipients of the IAEA Technical Cooperation (TC) assistance are kindly requested to attend the meeting on cost-free basis to the IAEA.</p>
<p>Participants' Qualifications</p>	<p>The dialogue forum targets senior experts and technical experts from national authorities, design organisations, utilities, technical support organizations (TSOs), other nuclear energy programme implementing organizations in both developing and developed countries, engaged or interested in the development, deployment of nuclear energy systems. The participants are expected to prepare review or perform sample assessment of selected INPRO criteria using the revised INPRO Methodology manual in the area of Economics, Environmental Impact by Depletion of Resources, and Infrastructure.</p> <p>The participants are expected to actively involve in the discussion, including presenting any evidence to support a point of view. They will also be expected to complete a questionnaire materials prior to the meeting.</p> <p>Participant on whose behalf assistance is requested will make an important contribution to the meeting in the form of presentation on economics, resource availability or institutional arrangement aspects related to the sustainability assessment as described in the INPRO manuals</p> <p>The “Description of work” part of the nomination form should contain the justification of the role of the nominated participant in the country’s strategic nuclear energy planning in one of the areas: Economics, Environmental Impact by Depletion of Resources, and Infrastructure.</p>
<p>Nomination Procedure:</p>	<p>Candidates intending to sign on for this meeting should access the communication platform InTouch (http://intouch.iaea.org). There they can register and complete and update their professional profile online, and also track their participation in the IAEA Technical Cooperation Programme.</p> <p>In order to apply as a candidate for a meeting, please proceed as follows:</p> <ol style="list-style-type: none"> 1. “Register”: Register to receive your user ID and password (help is available at: http://intouch.iaea.org/Portals/0/Help/How_to_sign_up.pdf) 2. “Profile”: Complete your profile on InTouch (help is available at: http://intouch.iaea.org/Portals/0/Help/Profile_Help.pdf) 3. “Apply”: Apply as a candidate for a meeting (help is available

	<p>at:http://intouch.iaea.org/Portals/0/Help/InTouch%20Help%20-%20Meeting%20Course%20Nomination.pdf).</p> <p>Help for each step can be found under the “Help” tab at the top of the web page.</p> <p>Requests received after the deadline of (25 May 2014) will not be considered. Only applications submitted through the National Liaison Officer of your country and/or ARCAL National Coordinators will be accepted. Please indicate clearly the following reference C1-INT2017-9003-01.</p>
<p>Administrative and Financial Arrangements:</p>	<p>Nominating Governments will be informed in due course of the names of the candidates who have been selected and will, at that time, be given full details of the procedures to be followed with regard to administrative and financial matters.</p> <p>Selected participants from countries eligible to receive technical assistance will be provided with a round trip economy class air ticket from their home countries to Vienna, Austria and a Daily Subsistence Allowance (DSA) at the prevailing UN Rate. Shipment of accumulated meeting materials to the participants' home countries is not the responsibility of the IAEA.</p> <p>The organizers of the meeting do not accept liability for the payment of any cost 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 nominating participants, undertakes responsibility for such coverage. Governments would be well advised to take out insurance against these risks.</p>