

INPRO Dialogue Forum 8  
Toward Nuclear Energy System Sustainability: Economics, Resources Availability, and  
Institutional Arrangements  
Vienna, 26-29 August, 2014

# Group Summary Institutional Arrangements

M. Iqbal – Chair  
J.R. Phillips – Tech Secretary  
Breakout Session



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International Atomic Energy Agency

# Overview

- Breakout Session included 19 Member State presentations on status of infrastructure development, energy plans and... a few assessments of status using INPRO methodology.
- Presentations were given by: Malaysia, Bulgaria, Indonesia, Romania, Israel, Bangladesh, IAEA (2), Ukraine, Kenya, Morocco, Georgia, Albania, Cambodia, Viet Nam, Argentina, Nigeria, Ghana, and Uganda.

# Highlights of Presentations

- Circumstances vary broadly from initial steps toward legal and institutional frameworks to very developed situations concerning infrastructures involving several operating reactors.
- Some Member States have considerable pressure to develop new generation to supply rapidly growing demand. Others have mature markets with slow growth. There are energy deficit situations and a few where a conventional NPP is large compared to identified demand.
- Geography varies tremendously from islands to mountainous terrain to arid situations. Seismicity, population and other critical siting issues vary. There are cross border connected grids, have isolated national grids.



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# Highlights of Discussions

- Considerable interest in development and maturity of regulations and industrial/regulatory codes and standards.
- Questions about how to “harmonize” with vendor State regulatory structures. What if there are products from different supplier States with significant differences? Ultimately, national regulations must come first. Then the issue of how supplier codes and standards fit can be considered. When crafting national regulation, how they will interact should be considered.
- Questions about how small countries can move into nuclear – regional cooperation or SMR? Regional cooperation can face challenges of grid compatibility, differences of institutional structures. SMR faces challenges of product availability.

# Highlights of Discussions

- Small countries face difficulties of HR because of education infrastructure. Issues of timing between education of work force and career opportunities are linked to build of NPP. If these are mismatched there is brain drain, etc.
- Questions of risk associated with level of involvement (or lack thereof) of government. This can have a profound effect on economic viability through impact on financing rates, etc.
- The issue of “models” for nuclear development in small countries. Which model is used determines how harmonization should be considered.
- The question of role of R&D – what, how much and how to implement? Romania case on developments to support CANDU technology – CANDU Owner’s Group.



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# Issues and Findings

- Making the choice on technology. Technology shapes the whole nuclear program – particularly how to develop a TSO position to support technology in regulation.
- How to move from INPRO assessment “gaps” to “action plans”. How to decide on what specific actions.
- How should small countries handle the difficult problem of HR across the dimensions of education through career? How to optimize through collaboration?
- Importance of international collaboration. What can be outsourced and what cannot – what are the critical core competencies countries must develop?

# Feedbacks on Sustainability Assessment of NES using INPRO Methodology

7

- Link IAEA criteria to new models for NPP development.
- How to move from gap to action?
- How and when do particular INPRO manuals make good sense to use?



# Conclusions and Recommendations

- Session was too short for number of presentations. 15 minutes is a minimal time and more time was needed for dialogue at the end.
- Possibly a DF could be organized in the future to address issues specifically identified in this session in greater detail?
  - HR difficulties of small countries
  - Regional cooperation vs. SMR
  - Models of cooperation
  - Approaches to harmonize regulatory basis with multiple vendors
  - Developing TSO core competencies



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