



**GIF International Workshops with Nuclear Industry including
SMR vendors and supply chain SMEs:**

- ***Workshop on Advanced Manufacturing***
- ***Workshop on R&D Infrastructures needs and opportunities***

18-19-20 February 2020,

OECD/NEA – Boulogne-Billancourt, France

Auditorium

Contact: secretariat@gen-4.org

GIF Workshop on Advanced Manufacturing

Tuesday 18 February 2020

- **9h00 – 9h10 Welcome and opening remarks**
 - *Lyndon Edwards*, ANSTO, Australia and *Sama Bilbao y Leon*, NEA
- **9h10 – 10h00 Session 1 – Overview of workshop**
 - Introduction on the opportunities and challenges of advanced manufacturing, overview of GIF AMME Task Force, purpose of workshop: Why we are here! *Lyndon Edwards*, ANSTO, Australia (20min)
 - The nuclear supply chain; past, present and future. *Andrew Storer*, NAMRC, UK (20mins+10 min discussion)
- **10h00 – 10h30 Coffee break**
- **10h30 – 12h30 Session 2 – Advanced Manufacturing Technologies**
 - Additive manufacturing in the nuclear supply chain, *Kurt Terrani*, ORNL, USA (20mins+10 min discussion)
 - Innovative fabrication in the nuclear supply chain, *Dave Gandy*, EPRI, USA (20mins+10 min discussion)
 - Advanced surface coatings in the nuclear supply chain, *Alfons Weisenburger*, KIT, EU (20mins+10 min discussion)
 - Panel Discussion (Presenters) led by Moderator
- **12h30 – 14h00 Lunch (self-paid)**
- **14h00 – 15h00 Session 3 – National Advanced Manufacturing Activities**
 - Advanced Manufacturing collaboration in the USA, *Isabella Van Royen/Mark Messner*, DoE (15mins+5 min discussion)
 - Advanced Manufacturing collaboration in the EU, *Lorenzo Malerba*, CIEMAT, EU (15mins+5 min discussion)
 - Advanced Manufacturing collaboration in France, *Eric Abonneau*, CEA, France, EU (15mins+5 min discussion)
- **15h00 – 15h30 Coffee break**
- **15h30 – 17h00 Session 4 – Group Activity**
 - Split into 3 or 4 groups, which undertake following activities led by Moderator / Rapporteur:
 - a. identify potential collaborative AMME activities/projects
 - b. analyse each identified area of collaboration (SWOT analyses?)
 - c. prioritization of identified areas/ideas
 - d. agree communication for Rapporteur to give to meeting (can develop presentation overnight)
- **17h00 End of Day 1**

Wednesday 19 February 2020

- **09h00 – 10h30 Session 5 – Group Reporting and Meeting Outcomes**
 - Communally undertake following activities:
 - Rapporteurs from each group presents group output
 - Overall prioritisation of potential collaborative AMME activities/projects
 - Identification of next steps and way forward
- **10h30 – 10h40 Wrap up**
- **10h40 – 11h00 Coffee break**

GIF workshop on R&D Infrastructures needs and opportunities

Wednesday 19 February 2020

- **11h00 - 11h15 Welcome**
 - Welcome by **Roger Garbil**, Euratom, DG RTD, Chair of the GIF R&D Task Force and **Sama Bilbao y Leon**, NEA
- **11h15 – 12h30 Engaging with the private sector – Round Table**

Moderator: Sama Bilbao y Leon

 - R&D challenges for Gen IV systems, **Gilles Rodriguez**, CEA and GIF Technical Director
 - GIF R&D infrastructures and large scale experimental programmes, **Roger Garbil**
 - GIF Advanced Manufacturing initiative, **Lyndon Edwards**
 - Regulatory challenges to license Gen IV systems, **Raj Iyengar**, Chief of the Component Integrity Branch, NRC's Office of Research
- **12h30 - 14h00 Lunch (self-paid)**
- **14h00 – 16h00 Identification of collaboration opportunities between private and public sectors for Gen IV systems**
 - 14h00 - 14h10 Introduction - **Roger Garbil**, Euratom, DG RTD, Chair of the GIF R&D Task Force
 - 14h10 – 14h30 Example of a LWR-based Advanced Reactor development programme

Moderator: Sang Ji Kim

 - **Fredrik Vitabäck**, GE-Hitachi, BWRX300
 - **Richard Wain**, UK SMR, Rolls Royce
 - **Jean-Michel Ruggieri**, Program Manager, SMRs, CEA, NUWARD Project
 - **Sang Ji Kim**, SMART Technology Development Division, KAERI, GIF EG member
 - **Marketa Krykova**, Project Manager, CVR, SSC SCWR co-Chair

- 14h30 – 15h00 Molten Salt Reactors (MSR)

Moderator: **Stéphane Bourg**

- **David Leblanc**, President and CTO, Terrestrial Energy
- **Stéphane Bourg**, CEA, GIF SSC Chair
- **Lou Martinez Sancho**, CIO Kairos Power FHR (KP-FHR)
- **Victor Ignatiev**, IPPE, MOSART project and related infrastructures
- **Jan Uhlir** Update on Pu/Pr cooperation in CZ

- 15h00 – 15h15 Coffee break

- 15h15 - 15h45 Liquid Metal Reactors (SFR and LFR)

Moderator: **Alessandro Alemberti**

- **Fausto Franceschini**, Westinghouse LFR,
- **Alessandro Alemberti**, ANSALDO Nucleare, LFR SSC Chair,
- **Jean-Marie Hamy**, Framatome, SFR
- **Ilya Pakhomov**, Head of Laboratory, Russian Federation, Institute for Physics and Power Engineering (IPPE)

- 15h45 – 16h15 Gas-cooled High Temperature Reactors (HTR)

Moderator: **Lyndon Edwards**

- **Jean-Marie Hamy**, Framatome, US SC-HTGR program
- **Dominique Hittner**, USNC
- **Karl-Fredrik Nilsson**, EU/Euratom JRC, Chair HTR SSC

- 16h15 – 16h45 Cross-cutting topics, non-electric applications

Moderator: **Taiju SHIBATA**

- **John Jackson**, INL, National Reactor Innovation Center,
- **François LE Naour**, CEA
- **Taiju Shibata**, JAEA
- **Abderrahim Al Mazouzi**, EDF

- 16h45 – 17h30 Wrap-up and lessons learnt (Tech Director + Moderators)

- All the moderators – Need to 2 bullet points + ½ page reporting

- **17h30 Networking Cocktail – GIF and Industry**

- Making connections and fostering exchanges among GEN-IV systems and cross-cutting topics between: Public / Private sectors, R&D Organisms / Industry, R&D platforms.

Thursday 20 February:

- **9h00 – 11h00 Examples of collaboration between Governmental organisations and industry**
 - Welcome by GIF Vice Chair on R&D Collaboration, **Jong-Hyuk Baek**, KAERI
 - Panel discussion - *Moderator: **Gilles Rodriguez***

Will involve representative of governmental research labs reporting on collaboration with the private sector, as well as international organisations.

 - **Gilles Rodriguez**, (on behalf of the CEA's Sodium School Director)
 - **John H. Jackson**, Acting Director, Gateway for Accelerated Innovation in Nuclear (GAIN)
 - **Tatiana Ivanova**, FIDES projects to address post-Halden situation / OECD
 - **Stefano Monti**, IAEA
 - **Raj Iyengar**, Chief of the Component Integrity Branch, NRC's Office of Research
 - **Stephen Bushby**, Atomic Energy of Canada Limited
 - **Luliia Kusina**, Director, Institute for Physics and Power Engineering (IPPE)

- 11h00 – 11h30 Coffee break

- **11h30 – 12h30 Views from the Private Sector, an Outlook for SMRs**

*Moderator: **Stefano Monti***

 - **Fausto Franceschini**, Westinghouse LFR,
 - **Lou Martinez Sancho**, CIO Kairos Power FHR (KP-FHR),
 - **David Leblanc**, President and CTO, Terrestrial Energy,
 - **Robin Manley**, VP SMR Technology, Ontario Power Generation,
 - **Raj Iyengar**, Chief Component Integrity Branch, NRC's Office of Research,
 - **Dominique Hittner**, USNC,
 - **Richard Wain**, UK SMR, Rolls Royce
 - **Fredrik Vitabäck**, GE-Hitachi, BWRX300,
 - **Arkady Karneev**, Rosatom Western Europe

- **12h30 – 13h00 Workshop conclusions**

GIF Policy Group Chair **Hideki Kamide**, representative of industry, representative of regulator, representative of OECD/NEA

- **13h00 Closing of the Workshop**