Our Monthly GIF Newsletter

UPDATE

GEN IV International Forum
Expertise | Collaboration | Excellence

A new phase for the GIF Technical Secretariat


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I want to thank Gilles Rodriguez for giving me the opportunity to be the guest editor of this October 2020 issue of the GIF Newsletter.

By now, I believe most of you know that I have left the OECD Nuclear Energy Agency and I will be leading the World Nuclear Association (WNA) soon. It has been my privilege to work together with Kamide-san, Nobu and Gilles, as well as with all the members of the GIF secretariat, to coordinate the activities of GIF during a relatively short but quite unusual period of time. Despite the unprecedented challenges posed by the COVID pandemic, the GIF family has managed to continue the progress in their work with minimum disruption. Although we all look forward to returning to normality, being able to meet face to face and have in-person technical exchanges, I think that GIF has adapted quite swiftly to the new situation and has become very effective in the use of virtual meetings and electronic means to advance our work.

It is my pleasure to introduce you to Mr. Philippe Guiberteau, who will be taking over the overall coordination of the GIF Technical Secretariat and will provide the secretariat support for the SCWR system. Philippe has more than 35 years of experience as an engineer and manager in the fields of operating and decommissioning nuclear facilities, nuclear chemistry and waste treatment, and has been the Director of CEA's Marcoule nuclear research centre since 2013 until early 2020. I also want to introduce you to Ms. Kathryn Obisesan, a recent graduate of the University of Maryland, who will also join the GIF secretariat supporting the Education and Training Working Group, the Advanced Manufacturing Task Force and the Research and Development Infrastructure Task Force. Both Philippe and Kathryn joined the NEA on September 14, 2020 and they are quite eager to contribute to the work of GIF. In early November, we will also see a few more changes as we welcome Dr. Masahiro Nishimura at the OECD NEA as the newest JAEA person on loan in support of the GIF secretariat. Nishimura-san, a JAEA expert in sodium fast reactors, will take over the secretariat for all the SFR system groups from Mr. Satoshi Okajima. Satoshi has been a key member of the GIF team for the last two and a half years, and he will be sorely missed both personally and professionally. Also in early November we will say goodbye to Dr. Stephanie Cornet, who is leaving the NEA to become a project manager at CEA's Marcoule nuclear research centre. Dr. Davide Costa from NEA's Division of Nuclear Science will do his best to continue the fantastic job done by Stephanie.

Although many of you already know, I also want to inform you that unfortunately the October PG/EG meetings will take place virtually. We are quite disappointed, as we had done a lot of work to prepare a memorable 20th Anniversary celebration, but alas… it will have to wait. The draft agenda for the PG/EG meetings will be shared with everyone soon, but I think that it is important to emphasize that the Policy and Technical Directors want to dedicate plenty of time to the technical discussions and to the presentations from the six reactor systems and from all the methodology working groups and task forces.

In preparation for the 20th anniversary of GIF, the GIF leadership has been working with a consultant that is helping us refresh and relaunch the GIF brand, with a new logo, a new website and new collateral materials. We are very excited to show everyone the final product very soon…

I want to close this piece thanking everyone in the GIF secretariat for their ongoing excellent job and for all the help and support they have provided me as I was trying to fill the big shoes left by Henri Paillere at the head of the GIF Technical Secretariat. It has been my absolute pleasure to work with everyone in the GIF family, and I look forward to future opportunities to work together.

Until we meet again, take care and stay well!

Sama Bilbao y Leon

Contents

Upcoming Conferences

International Conference on Fast Reactors and Related Fuel Cycles (FR21) - 10–13 May 2021, Beijing, China.
https://www.iaea.org/events/fr21

Major events

November: Webinar Series 47: Neutrino and Gen IV Reactor Systems.
December: Webinar Series 48: Development of Multiple-Particle Positron Emission Particle Tracking for Flow Measurement.

For further details, go to
www.gen-4.org

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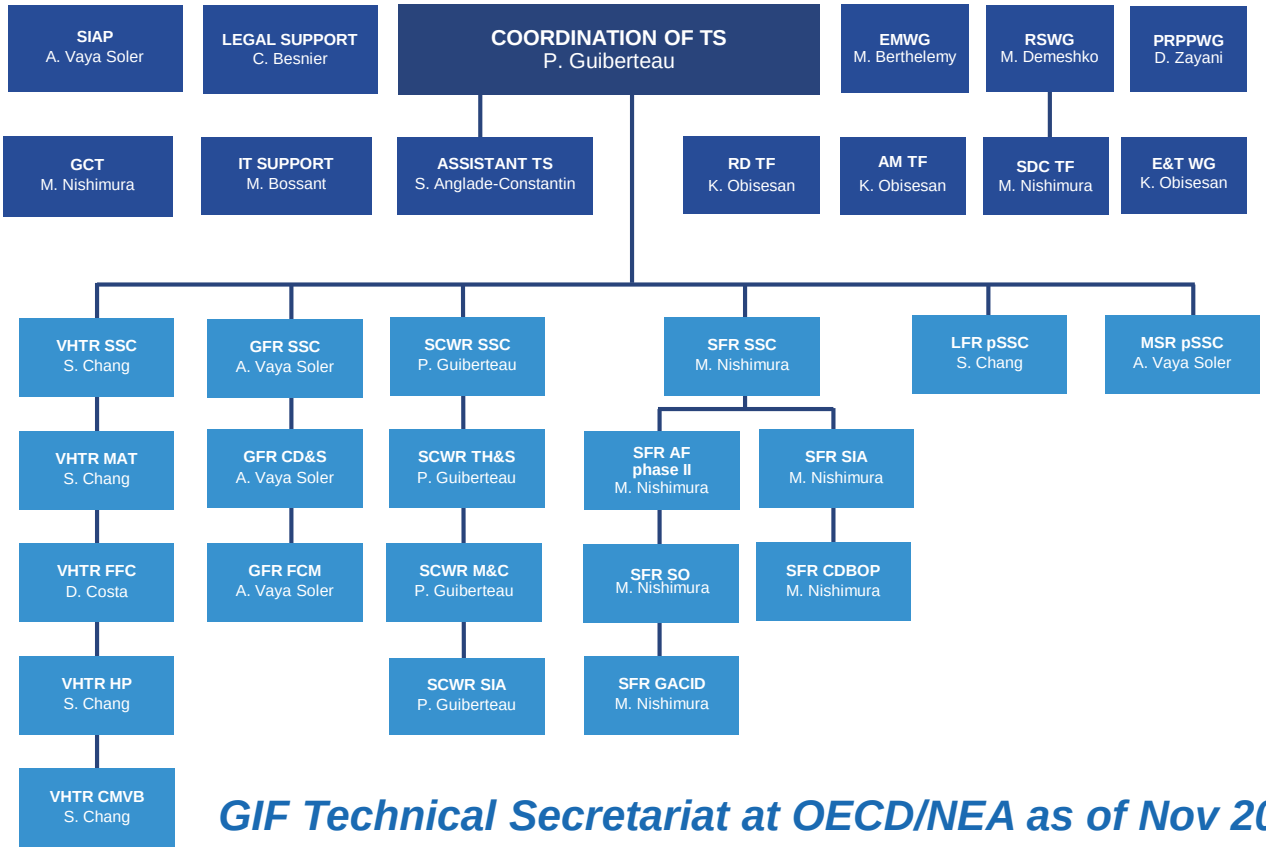

GIF Technical Secretariat at OECD/NEA as of Nov 2020

Exciting new studies under preparation by the EMWG


By Fiona Reilly and David E. Shropshire, co-chairs of the Economic Modelling Working Group (EMWG)

The EMWG is progressing on two papers over the next year:

1. Advanced Nuclear Technology Cost Reduction Strategies and Systematic Economic Review: The EMWG will evaluate nuclear cost reduction strategies based on past/current lessons-learned, along with assessment of readiness levels of technologies and potential for cost reduction. Key areas for nuclear cost reduction and enabling technologies will be researched under design, construction/production, and project management.

EMWG members will research specific strategies and technologies (e.g., functional containment, advanced concrete, machine learning, etc.) to assess the cost reduction potential, applicability to Gen IV technologies, technology readiness, and identify further RD&D needed to advance the strategy. This activity will develop a GIF systematic economic review process, where cost reduction strategies will be shared within the GIF (via ETWG) and used for training and publication purposes. Results and developed methodology can inform the design and selection of future cost reduction demonstration projects. Information and updates on cost reduction strategies and the study outcomes will be posted in an online repository ("Nukipedia").

The paper will outline a systematic economic review process to:

- identify opportunities/conditions for cost reduction under the categorizes of design, construction/production, and project management, emphasizing cost reductions for the balance of the plant;
- provide a methodology to review progress in designs towards reducing costs; and
- inform and provide training on the cost reduction strategies for reactor designers and other stakeholders.

2. Advanced Nuclear Technology Private Financing: The EMWG is bringing together a working group of financing experts to identify the changes that need to be made to international, low carbon, sustainability principles to enable the private sector financing of nuclear power, particularly Generation IV technologies.

The paper will consider:

- current financing methodologies for nuclear (adapted from existing materials);
- the enablers required to facilitate private financing of nuclear projects;
- the risks associated with nuclear projects, how such risks are mitigated and how these may vary (if at all) with Gen IV technologies (adapted from existing materials);
- an assessment of the international regimes on sustainable financing, including:
  - why nuclear projects are sustainable developments;
  - the Environmental Social and Governance ("ESG") policies (which are used by investors to assess companies and projects to determine whether an institution should be investing) including the London Stock Exchange and the UNEPFI guidance; and what needs to change, if anything, for nuclear to be included;
  - the EU Taxonomy and how nuclear meets the do no harm principles; and
  - the Green Bond Principles and what is required to make green bonds available for nuclear projects.

FAQ on EMWG

Capitalizing on my NEA and GIF experience…

Marc Deffrennes – former NEA Senior Analyst and Secretary of GIF SIAP

I joined the NEA Secretariat in October 2014, following my career as a nuclear engineer, first for Westinghouse and then as an official of the European Commission (Euratom).

At the NEA, I was mainly in charge of the Nuclear Innovation 2050 (NI2050) Initiative, aiming at building a multilateral cooperative framework to boost innovation in the nuclear sector. One of the main outcomes of NI2050, was the recognition of the need to have early engagement of all the stakeholders of the innovation process, starting with the researchers, industry both as technology holder and user, but also the regulators and their technical support organisations, and, last but not least, policy makers. The links with GIF were evident and I was also charged, for five years, with the secretariat of the GIF SIAP (Senior Industry Advisory Panel).

In a nutshell, the main output SIAP had over these years was twofold. The first was addressing the "technical community" (research, industry, regulators). 15 to 20 years after the launch of GIF, SIAP insisted on the need to have concrete steps towards demonstration projects, building on the results of the GIF research, to demonstrate the technical, industrial and licensing feasibility of technologies, and assemble elements of their economics, allowing further progress towards the next stage of selecting and building FOAKs (First of a Kind installations). The timeline proposed by SIAP was to have first demonstration projects up and running before 2030, leading to the commissioning of FOAKs towards 2040. SIAP indeed considered that it was critical to have Gen IV plants commercially available well before 2050 – a timeline frequently used for fulfilling actions to fight Climate Change.

The second was addressing more the "policy makers" (eg Governments via the GIF Policy Group). SIAP offered a refreshed perspective of the sustainability of nuclear energy, much in line with the original concept of Brundtland: sustainable means beneficial for the society of today and not penalizing for the society of tomorrow. Therefore, sustainability cannot be restricted to environment protection only. Energy policy must be built on three pillars: environment protection for sure, but also economics and affordability, and security and reliability of supply. Pro and cons of each form of energy must be analysed using these three pillars. The mix must then be properly balanced, using a system approach, to be sustainable for society.

This perspective of societal sustainability of energy, is very much at the center of what I am presently doing, after my career in industry and international organisations, which ended in 2019. With a few former colleagues, I have, among other things, created an Alliance of NGOs to promote, at European Union level, a pro-climate very low carbon energy mix for a sustainable European society… with nuclear fully part of that mix. The main goal is to interact with people within the EU Institutions to foster the use of the triangle of three pillars and a full system approach to support energy policy making at EU level. Each Member State is free to choose its own energy mix, but it is clear that the targets and guidelines set at EU level have a major influence.

The Alliance is named ***weCARE***: "we care for a Clean Affordable Reliable Energy (C A R E) mix for a sustainable society"… there is a lot of work ahead…

https://www.wecareeu.org

WeCARE