

Chapter 1. GIF membership, organization and R&D collaboration

GIF membership

The Generation IV International Forum (GIF) has 14 members, which are signatories of its founding document. Among the signatories to the charter, 12 members (Australia, Canada, France, Japan, China, Korea, Russia, South Africa, Switzerland, the United Kingdom, the United States and Euratom) have signed the Framework Agreement (FA) and its extension. Signatories of the charter are expected to maintain an appropriate level of active participation in GIF collaborative projects. They formally agree to participate in the development of one or more Generation IV systems selected by GIF for further research and development (R&D). The UK was among the first countries to join the GIF (in 2005) but did not ratify the Framework Agreement and UK R&D teams were involved in GIF projects through Euratom. In 2019, UK ratified the Framework Agreement and signed the VHTR and SFR system arrangement. Argentina and Brazil have signed the GIF Charter but have not ratified the FA. They are designated as “non-active members”.



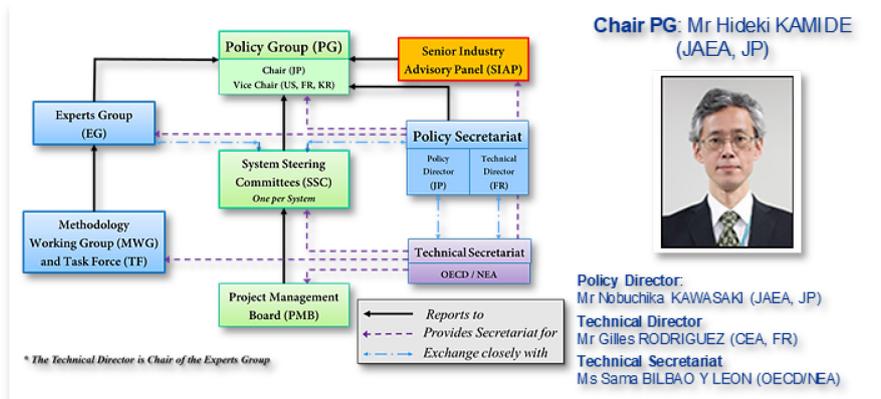
Members interested in implementing co-operative R&D on selected systems have signed corresponding System Arrangements (SA) consistent with the provisions of the FA. This is the case for the Sodium Fast Reactor (SFR), the Very-High-Temperature Reactor (VHTR), the Super Critical Water Reactor (SCWR) and the Gas Fast Reactor (GFR) systems. All four SAs were extended in 2016 for another ten years. Co-operation on the Molten Salt Reactor (MSR) and the Lead Fast Reactor (LFR) systems takes place under Memoranda of Understanding (MoU). The process of SA signature for the MSR system is ongoing.

GIF organization

The GIF Charter provides a general framework for GIF activities and outlines its organizational structure. GIF is led by the Policy Group (PG), which is responsible for the overall steering of the GIF co-operative efforts, the establishment of policies governing GIF activities, and interactions with third parties. The PG usually meets twice a year. In 2019, the PG met in **Vancouver (Canada)** in May, and in **Weihai (China)** in October.

The Experts Group (EG), which reports to the Policy Group (PG), is in charge of reviewing the progress of co-operative projects and of making recommendations to the PG on required actions. It advises the PG on R&D strategy priorities and methodology, and on the assessment of research plans prepared in the framework of Systems Arrangements. The EG meets twice a year. These meetings are held back-to-back with the PG meetings in order to facilitate exchanges and synergy between these two groups. Every GIF member nominates two representatives in the PG and two in the EG. **In 2019 the whole GIF Governance was renewed** (see Chapter 2 and Figure 1).

Figure 1. GIF Governance as of 2019



Signatories of each SA have formed a System Steering Committee (SSC) to plan the R&D required for the corresponding system. R&D activities for each GIF system are implemented through a set of Project Arrangements (PAs) signed by interested bodies. A PA addresses the R&D needs of the corresponding system in a broad technical area. The project activities are described in a multiannual Project Plan (PP).

The GFR is composed of two Project Arrangements: Conceptual Design and Safety (CD&S) and Fuel and Core Materials (FCM). The SCWR has three PAs: Materials & Chemistry (M&C), Thermo-hydraulics and Safety (TH&S), System Integration and Assessment (SIA). The SFR contains four PAs: Advanced Fuel (AF), Component Design & Balance-of-Plant (CDBOP), Safety and Operation (SO), System Integration and Assessment (SIA). And the VHTR has four PAs: Hydrogen Production (HP), Fuel and Fuel Cycle (FFC), Materials (MAT) & Computational Methods Validation and Benchmarking (CMVB). R&D carried out under an MoU (the case of LFR and MSR systems) is co-ordinated by a provisional System Steering Committee (pSSC). The GIF Charter allows the participation of organizations from public and private sectors of non-GIF members at the PAs level, with the unanimous approval of the corresponding SSC.

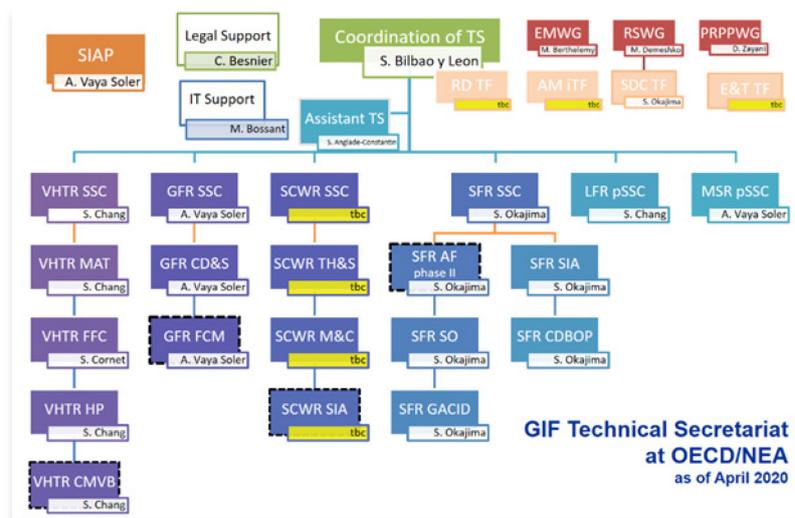
Three Methodology Working Groups (MWGs): the Economic Modelling Working Group (EMWG), the Proliferation Resistance & Physical Protection Working Group (PR&PP WG), and the Risk and Safety Working Group (RSWG), are responsible for developing and implementing methods for the assessment of Generation IV systems against GIF goals in the fields of economics, PR&PP, and risk and safety. The Methodology Working Groups report to the Expert Group that provides guidance and periodically reviews their work plans and progress. The specific reports of each Working Groups are in Chapter 5.

Figure 2. GIF Policy Group at the 2018 GIF Symposium in Paris, France



From left to right: Jong-Hyuk Baek, Henri Paillère, Yun Jung, Steve Napier, John Kelly, Linhao Chen, Thomas Fanghänel, Diane Cameron, Jinlei Jia, Lyndon Edwards, Alice Caponiti, William Magwood, Didier Gavillet, Suibel Schuppner, Kyoshi Ono, Konstantin Kornienko, Hideki Kamide, Nobuchika Kawasaki, Daniel Brady, Sylvestre Pivet, Gilles Rodriguez, Bessie Mokgopa, and Victor Ignatiev

Figure 3. Structure of the GIF Technical Secretariat



In addition, the PG creates dedicated Task Force groups (TFs) to address specific goals or to produce specific deliverables within a given time frame. In 2019, three Task Forces arrived to completion: Advanced Manufacturing and Materials Engineering (AMME), R&D Infrastructure (RDITF) and Safety Design Criteria/Safety Design Guidelines (SDC/SDG) Task Forces. Their respective 2019 results are described in Chapter 6. In 2020, the Policy Group will discuss the opportunity to continue to pursue these items into new Task Force groups.

Due to its important and key role in the continuous dissemination of GEN-IV scientific knowledge, the Education and Training Task Force (ETTF) was transformed at the end of 2019 into the **Education & Training Working Group** (see the corresponding Report in Section 6.1).

A Senior Industry Advisory Panel (SIAP) comprised of executives from the nuclear industries of GIF members was established in 2003 to advise the Policy Group on long-term strategic issues, including regulatory, commercial and technical aspects. The SIAP contributes to strategic reviews and guidance of the GIF R&D activities in order to ensure that technical issues influencing future potential introduction of commercial Generation IV systems are taken into account (see Chapter 7).

The GIF Secretariat ensures the day-to-day co-ordination of GIF activities and its communication. It includes two groups: the Policy Secretariat and the Technical Secretariat. The Policy Secretariat assists the Policy Group and Experts Group in the fulfilment of their responsibilities. The Policy Director specifically assists the PG on policy matters. The Technical Director serves as Chair of the Expert Group and assists the PG on its technical strategy and vision. The Technical Secretariat team (NEA) assists all the GIF technical boards (the six Systems, Working Groups, Task Force, SIAP), maintains the public and protected GIF websites, and organizes the GIF main initiatives: conferences, symposium, workshops and communication events. The NEA is entirely resourced for this purpose through contributions financial from all GIF members.

**Sama Bilbao y León**

Head of the
Generation IV
Technical Secretary