

8.9 Technical Secretariat GIF

- Update since Oct 2018 –

**Division of Nuclear Technology Development and
Development**

10-11 July 2019

**71st Meeting of the Committee for Technical and Economic Studies on
Nuclear Energy Development and the Fuel Cycle (NDC),**

New governance

Who's Who



Hideki Kamide was elected Chair of the GIF Policy Group for the period 2019-2021, succeeding Francois Gauché in this role. He was previously Vice Chair of the Policy Group. He is the Deputy Director General of the Sector for Fast Reactor and Advanced Reactor Research and Development at the Japan Atomic Energy Agency.

New PG Chair, Mr Kamide (JAEA, Japan)



Jong-Hyuk Baek serves as Vice Chair of the GIF Policy Group, supporting the Chair in particular in the area of Research Collaborations. He is the Senior Vice President and CTO (Chief Technology Officer) for Innovative Nuclear Reactor Systems at Korea Atomic Energy Research Institute.

New PG Vice Chair, Mr Baek (KAERI, Korea)



Alice Caponiti serves as Vice Chair of the GIF Policy Group, supporting the Chair in the area of regulatory issues. She is currently Director for Nuclear Energy Technologies in the Office of Nuclear Energy at the U.S. Department of Energy. Prior to this, she served as a United States representative on the Policy Group since 2017.

New PG Vice Chair, Ms Caponiti (DOE, US)



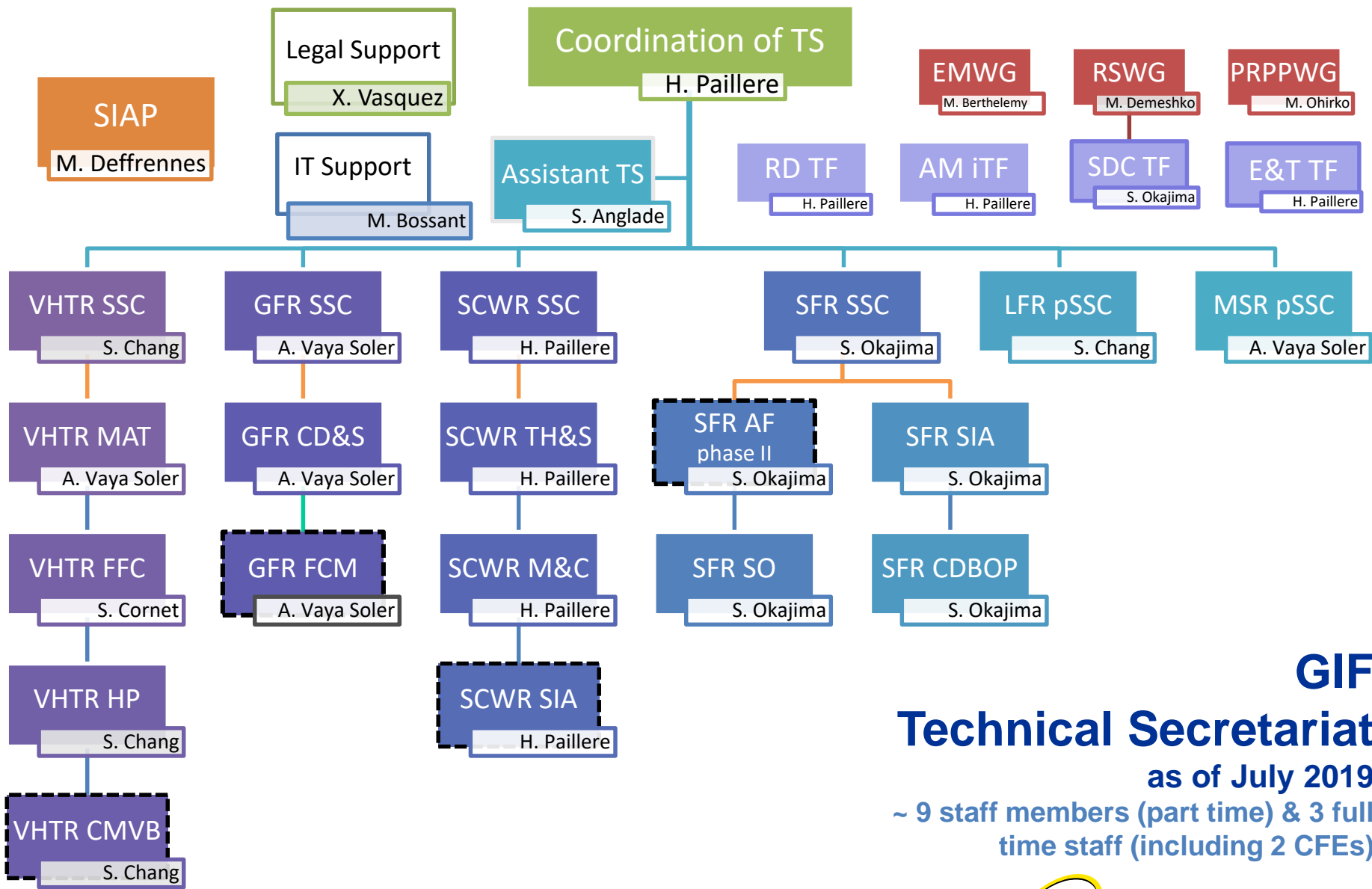
Nobuchika Kawasaki became the GIF Policy Director on 1 January 2019, succeeding François Storrer. He is the Assistant Principle Researcher for Foreign Affairs at the Japan Atomic Energy Agency. He has strong experience in fast reactor technology and is very knowledgeable on GIF activities after having served on the OECD/NEA Technical Secretariat Team between July 2016 - July 2018.

New Policy Director, Mr Kawasaki (JAEA, Japan)



Gilles Rodriguez serves as the interim GIF Technical Director. He is a Senior Expert Engineer at the French Alternative Energies and Atomic Energy Commission and has been the Deputy Head of the ASTRID Project Team since 2016. He has broad experience in Generation IV Research and Development, which encompasses fast reactors, liquid metal coolants, safety, hydrogen production and advanced power conversion cycles.

New Technical Director, Mr Rodriguez (CEA, FR)



GIF
Technical Secretariat
 as of July 2019
 ~ 9 staff members (part time) & 3 full
 time staff (including 2 CFEs)

UK – “active” GIF member

- The UK was among the first countries to join the GIF
- Signatory of the GIF Charter and the GIF Framework Agreement (in 2005) – but had not ratified the FA.
- UK R&D teams involved in GIF projects through Euratom (until now)
- The UK deposited its Instrument of Ratification of the FA on 17 October 2019
- The FA entered into force for the UK on 16 January 2019, with BEIS as Implementing Agent
- It consequently signed:
 - The VHTR System Arrangement
 - The SFR System Arrangement







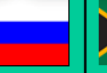







Turkey's bid to join GIF



- Turkey presented its bid to join the GIF at the PG meeting (Oct 2018)
- GIF Policy Group agreed to review the bid:
 - » Discussions (phone conferences) between GIF and Turkish experts on areas of common interest (mainly MSR, materials, advanced power conversion systems – Brayton cycles)
 - MSR chemistry & reactor design (already organised)
 - Power conversation & structural materials (to be organised June 2019)
 - » GIF delegation Technical visit to TUBITAK in Turkey, week 5-9 August 2019, and report to PG
 - » Decision on Turkey's bid at the PG meeting in China (17-18 Oct 2019)

GIF members' involvement in Gen IV systems R&D

												
SFR			●	●	●	●	●			●	●	●
VHTR	●	●	●	●	●	●			●	●	●	●
LFR					●	●	●			●		●
SCWR		●	●		●		●					●
GFR				●	●							●
MSR	●	●		●			●		●	●		●

● : signatory of System Arrangement

● : signatory of Project Arrangement

● : signatory of MoU

GEN IV meetings in Vancouver, May 2019

Included:

- **GEN IV workshop on flexibility of Gen IV Systems** [*link to NDC ARFEM project*]
 - Questionnaire on flexibility attributes (manoeuvrability, electricity/non-elec products (eg. H2), siting, deployment, ...)
 - Presentations from DOE, EPRI, MIT, EMWG, SIAP + 6 systems
- GEN IV/NEA booth in the « **Innovation Showcase** » exhibition
- **GEN IV Chair participation in CEM-NICE Future (Nuclear Innovation Clean Energy Future) side-event**



Breakthroughs:

Flexible Nuclear Energy Systems in a Clean Energy World



- **GEN IV Policy Group – SMR vendors discussions**

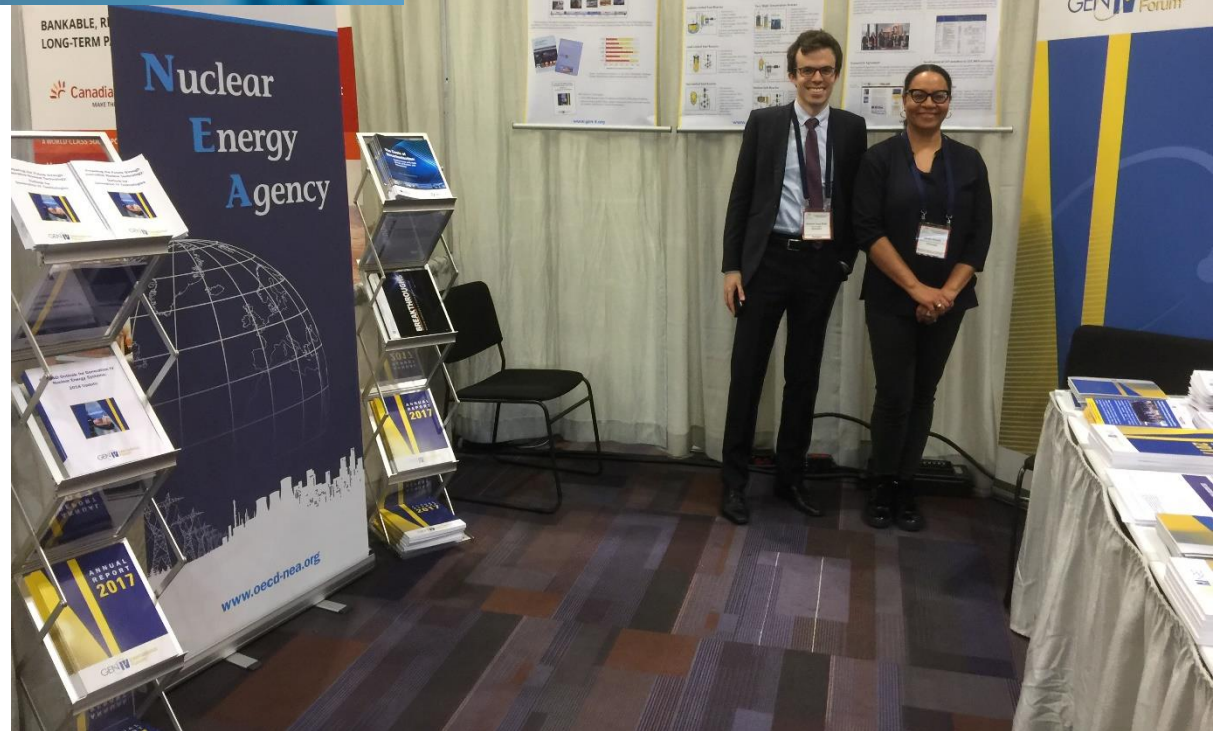


GIF Booth at CEM10

Innovation Showcase

Technical Secretariat and PG Chair's staff present on stand to provide information on the Forum.

- Distribution of GIF flyer, R&D Outlook 2018
- An opportunity to disseminate NEA/NDC reports (System Costs II) as well!



SMR vendors – GIF Policy Group meeting, 30 May 2019


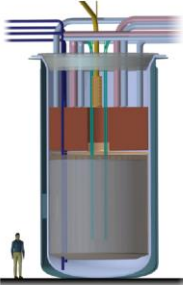
Following CNL “SMR Roundtable” meeting




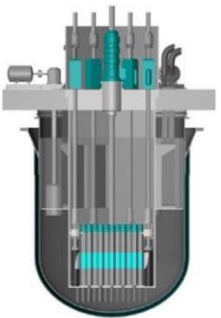
in partnership with






HTR MMR

MSR Thermal

LFR






HTR







BWR- SMR

PWR- SMR




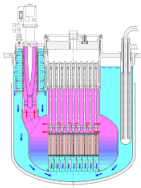
SFR

MSR





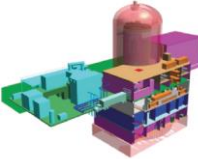

MSR Thermal


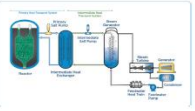
LFR




HTR

PWR- SMR

MSR Thermal

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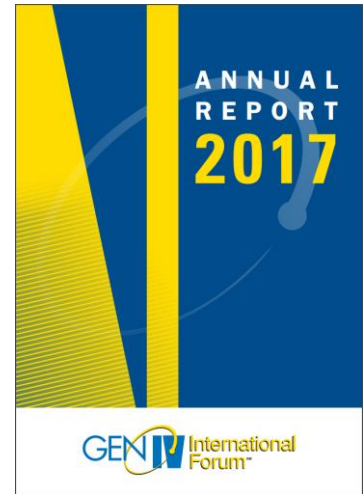
- Topics discussed and to be further discussed:
 - R&D challenges, participation in GIF R&D activities
 - Access to infrastructures
 - Economics
 - Safety design criteria / guidelines - licensing
 - Deployment

- Note: Private sector companies can participate in GIF R&D projects.

Annual Report 2017 & R&D Outlook 2018

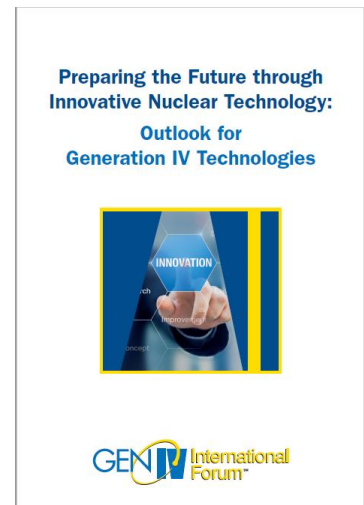
Annual Report 2017:

- Published and available on GIF website
- 2018 Annual Report replaced by Proceedings of 4th GIF Symposium (see next slide)



R&D Outlook 2018:

- An update of the 2009 R&D Outlook
- Stand-alone high-level summary, published at the 4th GIF Symposium (Oct 2018)
- Released at the Vancouver EG/PG meetings



Proceedings of 4th GIF Symposium



4th GIF Symposium
16-17 October 2018
at the 8th edition of
Atoms for the Future
UIC Paris, France



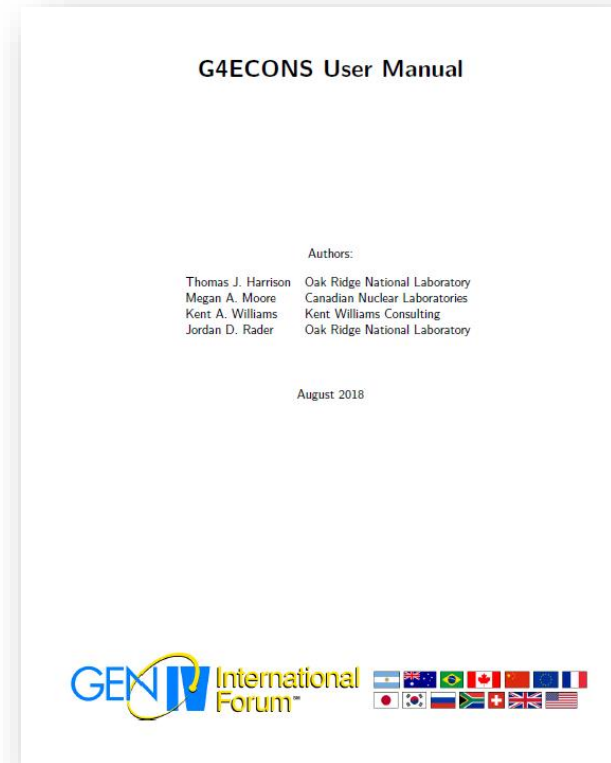
- A very successful event
- Nearly 300 participants
- Presentations from plenary sessions key note speakers available at:

<http://gifsymposium2018.gen-4.org/programme.html>

- Proceedings with technical papers (> 50) being finalised
 - Some papers pulled out
 - Some copyright issues

EMWG's G4ECONS

- **Distribution of 2008 version: (since Oct 2017)**
 - » KEPCO International Nuclear Graduate School, Korea / IAEA / Empresarios Agrupados, Spain / Loughborough University, UK / Politecnico di Milano, Italy / MPR Associates, US / SNC Lavalin UK subsidiary / Alaska Pacific University, US / Tyne Engineering, Canada / CIAE, China / Aachen University, Germany / Tractebel, Belgium / Harvard University Center for the Environment, US / NIRO, UK
- **G4ECONS v3 distributed since summer 2018:**
 - » SNERDI, Mitsubishi Hitachi Power Systems, Moscow Power Engineering Institute, Tsinghua U., BME Inst. Nuclear Techniques (Hungary), Missouri S&T, Terrapower, KEPCO-E&C, Open University (UK), Elysium, Seoul Nat. University, Hatch Canada



Task Force Education & Training - webinars

Series 28: European Sodium Fast Reactor: An Introduction

15 April 2019

Presenter: Dr. Konstantin Mikityuk, PSI, Switzerland



Series 29: Formulation of Alternative Cement Matrix for Solidification/Stabilization of Nuclear Waste

22 May 2019

Presenter: Mr. Matthieu De Campos, Université de Lille 1, France



Series 30: Interactions between Sodium and Fission Products in Case of a Severe Accident in a Sodium-cooled Fast Reactor

19 June 2019

Presenter: Mr. Guilhem Kauric, CEA, France



Series 31: Security Study of Sodium-Gas Heat Exchangers in Frame of Sodium-cooled Fast Reactors

31 July 2019

Presenter: Ms. Fang Chen, CEA, France

[REGISTER HERE](#)

GEN IV International Forum

FORMULATION OF ALTERNATIVE CEMENT MATRIX FOR SOLIDIFICATION/STABILIZATION OF NUCLEAR WASTE

Mr. Matthieu De Campos, PhD student
Lille University, France
May 22, 2019

Supervisors: Prof. C. A. Davy (Centrale Lille), Dr M. Rivernet (ENSCL), UCCS UMR CNRS 6181 and J. Garcia (Orano)

Logos: Université de Lille, orano, NEA, SCK-CEN, cea, Los Alamos, Argonne, INEL, Idaho National Laboratory, Berkeley, Brookhaven, Canadian Nuclear Laboratories, Pacific Northwest, etc.

GEN IV International Forum

INTERACTIONS BETWEEN SODIUM AND FISSION PRODUCTS IN CASE OF A SEVERE ACCIDENT IN A SODIUM-COOLED FAST REACTOR

Mr. Guilhem Kauric
CEA, France
19 June, 2019

Logos: NEA, SCK-CEN, cea, Los Alamos, Argonne, INEL, Idaho National Laboratory, Berkeley, Brookhaven, Canadian Nuclear Laboratories, Pacific Northwest, etc.

Financial Report 2018 – Budget 2019

- 2018 Expenditures
- Budget 2019:
 - Budget formula unchanged
 - UK as 12th active member – contributing to the TS budget
 - New involvement in systems reflected
- Cost Free Experts from Japan and Korea (continues)
- Additional expenditures in 2019 to cover cost of GIF webinar series (previously paid by US)
- Overall budget slight increase (968k€) – approved.