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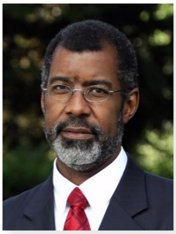
Workshop on Initial Estimation of Backend Costs for Advanced Reactors and Small Modular Reactors

PROGRAMME

Boulogne-Billancourt, France
18-20 November 2025

Foreword



The coming years are expected to see an acceleration in the deployment of new nuclear energy capacity – including of small modular reactors and Generation IV systems – to meet growing electricity demand. While these new nuclear technologies have features that make them suitable for a wide variety of applications, they also require new regulatory, legal and technical approaches. This includes the need to plan the backend of the fuel cycle to maintain a responsible, long-term nuclear energy strategy.

The nuclear energy sector must anticipate measures to address the decommissioning and waste management considerations associated with these new technologies from the design stage onwards. Doing so will provide the regulators, policymakers and the public with the assurances necessary to enable deployment of these advanced technologies.

This workshop is designed to foster open dialogue among a range of stakeholders, including reactor designers, regulators, government agencies, industry representatives and international organisations, to create a space where experts can discuss decommissioning cost estimation for next-generation nuclear technologies and explore how novel fuels, designs and waste streams reshape our traditional approaches.

Exploring these topics is important not only to foster earlier and more robust collaboration between technology vendors and the nuclear backend community, but also to further develop regulatory frameworks that can help streamline the licensing processes and facilitate financing.

This workshop represents an early step towards addressing a wide range of challenging issues. While there are important questions ahead related to the deployment of new technologies, we are confident that bringing all stakeholders together will provide a clear path towards their resolution.

William D. Magwood, IV,
NEA Director-General

Introduction to the Workshop

The Nuclear Energy Agency (NEA) Expert Group on Costing for Decommissioning of Nuclear Installations and Legacy Management (EGCDL) has organised this international workshop on the initial estimation of backend costs of the nuclear fuel cycle for small modular and advanced reactor technologies. This event offers a forum where a diverse group of experts from across the nuclear energy sector, including decommissioning, waste management, regulation and industry, can gather to identify opportunities pertaining to the backend management of these new technologies.

Recognising that quality cost estimates are necessary to ensure that plans for backend management and decommissioning projects are economically sound and provide a realistic basis for financial decisions, this workshop will aim to develop preliminary guidelines that compile current best practices. These will cover key decommissioning and waste management considerations that can be addressed from the design stage onwards, inform and support regulatory and licensing processes, and build trust and confidence among policymakers and the public.

The EGCDL was established as a dedicated working group to foster the exchange of information, knowledge and experience between its members on issues concerned with cost estimation, with a view to promoting collective learning and to enhancing the credibility, reliability and auditability of the cost estimation process. The insights and experiences of the group's members shaped the workshop's programme, ensuring that the event's discussions touch on all the key areas of interest.

Programme – Day 1 (18 November 2025)

Opening session

9:00 **Welcome and opening remarks**

Niklas Bergh, Chair, Expert Group on Costing for Decommissioning of Nuclear Installations and Legacy Management (EGCDL)

Rebecca Tadesse, Head of Division, Division of Radioactive Waste Management and Decommissioning, Nuclear Energy Agency (NEA)

9:20 **Keynote remarks**

Thibault Louvet, Executive Vice President Marketing & New Nuclear, Orano and Vice Chair, Technical Working Group on Fuel Cycle and Waste Management, European Industrial Alliance on Small Modular Reactors

Session 1

9:40 **Understanding SMR/Gen IV technologies and design features**

***Chair**: Peter Stoltz, Head of Unit, Nuclear Waste Financing, Swedish National Debt Office, Riksgälden*

Alex Page, Principal Engineer and Technical Team Lead, eVinci

Kyle Stanton, Manager, Natrium™ Water Pool and Storage, Terrapower

Sungjin Lee, Principal Researcher and Group Leader, SMR Development Group, Central Research Institute, Korea Hydro and Nuclear Power (KHNP)

Waclaw Gudowski, Principal Science Advisor, Orlen Synthos Green Energy (OSGE)

Janne Wallenius, Co-Founder and Chief Technology Officer, Blykalla

Matthew McClellan, Cost Engineer, Aalo Atomics

10:55 Coffee break

11:20 **Global Status of SMR/Gen IV Technologies and International collaboration**

Lucas Mir, Nuclear Energy Analyst, Division of Nuclear Technology Development and Economics, Nuclear Energy Agency (NEA)

Amparo Gonzalez, Technical Lead Spent Fuel Management, Nuclear Fuel Cycle and Materials Section, IAEA

Dominique Hittner, Vice-Chair, European Nuclear Cogeneration Industrial Initiative (NC2I)

Andrei Goicea, Policy Director, Nucleareurope

12:00 Lunch

Session 2

13:15 **Impact of SMR/Gen IV technologies fuel types and fuel cycles on spent fuel and radioactive waste management**

Chair: *James Woodfield, Nuclear Decommissioning Authority (NDA), United Kingdom*

Gabriele Grassi, Deputy Head of Division, Division of Radioactive Waste Management and Decommissioning, Nuclear Energy Agency (NEA)

Shahab Dabiran-Zohoory, Nuclear Scientist, Division of Nuclear Science and Education, Nuclear Energy Agency

Jesus Martinez, Senior Consultant, Amphos21

Klaus Buettner, Senior Expert Waste Management, Framatome

Kyle Stanton, Manager, Natrium™ Water Pool and Storage, TerraPower

Janne Wallenius, Co-Founder and Chief Technology Officer, Blykalla

Session 3

14:20 **Lessons learnt from management of existing spent fuel and waste streams and application to SMR/Gen IV technologies**

Chair: *Simone Mueller, Nuclear Waste Management Specialist, Framatome*

Soufiane Mekki, Nuclear Waste Specialist, Division of Radioactive Waste Management and Decommissioning, Nuclear Energy Agency (NEA)

Amparo Gonzalez, Technical Lead Spent Fuel Management, Nuclear Fuel Cycle and Materials Section, IAEA

Bruce Montgomery, Director Decommissioning and Used Fuel, Nuclear Energy Institute (NEI)

Jinsong Liu, Swedish Radiation Safety Authority (SSM)

Lynne Jones, Strategic Planner, Canadian Nuclear Laboratories (CNL)

James Woodfield, Nuclear Decommissioning Authority (NDA), United Kingdom

15:25 Coffee break

Session 4

15:50 **Panel discussion on projections of decommissioning strategies for SMR/Gen IV technologies**

***Chair**: Niklas Bergh, Business Development and Sales Manager, Westinghouse*

Alex Iliescu, Senior Decommissioning Engineer Ontario Power Generation (*Virtual*)

Andrzej Chwas, Head of Unit, Nuclear Infrastructure Unit, Department of Nuclear Energy, Ministry of Energy, Poland (*Virtual*)

Kris Lariviere, Acting Director, Facilities Decommissioning and Environmental Remediation, Canadian Nuclear Laboratories (CNL)

Nicklas Tjernlund, Senior Specialist, Demolition and Dismantling, Vattenfall

Ville Oinonen, Senior Engineer, Nuclear Decommissioning and Waste, Fortum

16:50 **Panel discussion on SMR/Gen IV technologies and generic cost estimation for waste management strategies (waste management, spent fuel management, and decommissioning waste management)**

***Chair**: Peter Stoltz, Head of Unit, Nuclear Waste Financing, Swedish National Debt Office, Riksgälden*

Antonio Vaya Soler, Manager, Lucid Catalyst

Bruce Montgomery, Director Decommissioning and Used Fuel, Nuclear Energy Institute (NEI)

Valentyn Bykov, Project Manager, Decommissioning and Disposal, Swissnuclear

Linus van Ginhoven, Business Development Manager, Blykalla

17:50 **Closing remarks**

18:00 End of day 1

Programme – Day 2 (19 November 2025)

Session 5	
9:00	**Focus session: Micro-reactor cost estimation for the backend** Alex Page, Principal Engineer and Technical Team Lead, eVinci
Session 6	
9:20	**Overview of current cost estimation methodologies for the backend** ***Chair***: *Paolo Gui, Deputy Director Engineering and New Technologies, Sogin* Niklas Bergh, Business Development and Sales Manager, Westinghouse Vladimir Daniska, Senior Consultant, VUJE Mohammad Tohidi, Operations Research Analyst, Canadian Nuclear Laboratories
10:10	Coffee break
10:30	**Panel discussion on cost estimation methodologies for the backend of SMR/Gen IV reactors** *(Focus areas: Costing approaches, assumptions and boundary conditions, benchmarking, initial cost estimates availability and interest for)* ***Chair***: *Peter Stoltz, Head of Unit, Nuclear Waste Financing, Swedish National Debt Office, Riksgälden* Lori Glander, Vice President TLG Services Luc Van Den Durpel, Founding Partner Nuclear-21 Niklas Bergh, Business Development and Sales Manager, Westinghouse Vladimir Daniska, Senior Consultant, VUJE Vladimir Michal, Decommissioning Team Leader, Decommissioning and Environmental Remediation Section, IAEA (*Virtual*)
11:45	Lunch

Session 7

13:00 **Panel discussion: Design considerations for the backend in licensing of SMR/Gen IV reactors and lessons learnt**

***Chair**: Niklas Bergh, Business Development and Sales Manager, Westinghouse*

Andrew Blow, Dismantling Expert, Tractebel Engie

Klaus Buettner, Senior Expert Waste Management, Framatome

Kris Lariviere, Acting Director, Facilities Decommissioning and Environmental Remediation, Canadian Nuclear Laboratories (CNL)

Nicklas Tjernlund, Senior Specialist, Demolition and Dismantling, Vattenfall

14:00 **Regulatory perspectives on licensing of SMR/Gen IV technologies (regulator)**

***Chair**: Jiyoon Jung, Project Manager, Decommissioning and Spent Fuel Regulation, KINS*

Valentin Kerleguer, Inspector, Nuclear Waste Management, Federal Agency for Nuclear Control (FANC)

Jinsong Liu, Swedish Radiation Safety Authority (SSM)

Jongkuk Lee, Korea Institute of Nuclear Safety (KINS)

Klaus Byhrø, Energy Counsellor, Norwegian Delegation to the OECD

15:00 **Panel discussion: Operator perspectives on licensing of SMR/Gen IV technologies (utilities/operators)**

***Chair**: Rebecca Tadesse, Head of Division, Division of Radioactive Waste Management and Decommissioning, NEA*

Kirstin Carmouche, Health, Safety, Environment and Sustainability Lead, Great British Nuclear (GBN)

Tomáš Rosendorf, Head of Office, Office of Director General – Section of Nuclear Energy and New Technologies, Ministry of Industry and Trade, Czechia

Waclaw Gudowski, Principal Science Advisor, Orlen Synthos Green Energy (OSGE)

16:00 Coffee break

Session 8

16:20 **Breakout session: Financing and funding of the backend for SMR/Gen IV technologies**

17:20 **Breakout**

Session recap

17:50 **Closing remarks**

18:00 End of day 2

Programme – Day 3 (20 November 2025)

Session 9	
9:30	**Funding schemes for the backend of SMR/Gen IV technologies**
	Opening remarks
	Andrei Goicea, Policy Director, Nucleareurope (Virtual)
	Jan Horst Keppler, Senior Economic Advisor, Nuclear Energy Agency
9:50	**Panel discussion**
	Chair: Valentyn Bykov, Project Manager, Decommissioning and Disposal, Swissnuclear
	Amritpal Agar, Nuclear Account Manager, Sirius Analysis Limited
	Donald Harker, Founder DKMT Consulting
	Luc Van Den Durpel, Founding Partner Nuclear-21
	Peter Stoltz, Head of Unit, Nuclear Waste Financing, Swedish National Debt Office, Riksgälden
10:50	Coffee break
11:15	**Recap of workshop and plenary discussion**
12:15	**Closing remarks**
12:30	End of workshop

Nuclear Energy Agency (NEA)
46, quai Alphonse Le Gallo
92100 Boulogne-Billancourt, France
Tel.: +33 (0)1 73 21 28 19
nea@oecd-nea.org **www.oecd-nea.org**

@oecd_nea
OECD Nuclear Energy Agency
@oecd_nea
OECD Nuclear Energy Agency

Cover page photos: Deconstruction of the Chooz A Nuclear Power Plant, France (EDF); Estimation (Shutterstock/ lovelyday12).