



**Committee on Radioactive Waste Management
CoRWM Doc. 3397**

PROPOSED PROGRAMME OF WORK 2018-2021

March 2018

1. Introduction from the Chair


This year, I am presenting this Work Programme on behalf of the Committee as Interim Chair. Prof. Laurence Williams stood down at the end of October 2017 and I have stepped up from Deputy Chair, during the recruitment process for Laurence's successor. Professor Julia West is temporarily filling my former position. My thanks to Laurence for his tenure and contribution, and to Julia West too, as well as the rest of the Committee for maintaining CoRWM's energies and impact during this time.

The Committee has consolidated a variety of administrative and process improvements as a result of the supplemented Secretariat and this process of improvement will continue into this new year alongside consideration and implementation of the recommendations of the Tailored Review of CoRWM being undertaken by BEIS as I write.

We will in the coming year also engage further with the work required to assess the results of, and Government's response to, the two Geological Disposal Facility (GDF) consultations launched in January. We plan to engage widely with stakeholders, reflecting opportunities, new key personnel and the relationships with the devolved administrations so as to take whatever steps are necessary to operate well, reflecting the contribution they and UK government need from us. Further visits by members are also proposed to relevant sites in Sweden, Germany and of course across the UK.

In all of our work we will endeavour to provide valuable and accessible indications of our assessments and positions, using our website as well as social media and our meetings and reports.

This year, more than most in recent time, is one where the focus on delivering a GDF is clearer and its prospects potentially more likely. CoRWM will continue to scrutinise and advise as best it is able, seeking to ensure appropriate outcomes from the decision makers and delivery bodies.



Professor Campbell Gemmell
Acting Chair, Committee on Radioactive Waste Management

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2. Summary

1. The Committee on Radioactive Waste Management (CoRWM) is an advisory Non-Departmental Public Body, with a remit to provide independent scrutiny and advice on the long-term management of higher activity radioactive wastes. The Committee consists of 13 experts from various fields related to radioactive waste management.
2. CoRWM reports to Ministers in the Department for Business, Energy and Industrial Strategy (BEIS) as well as the Scottish Government (SG), Welsh Government (WG) and the Department of Agriculture, Environment and Rural Affairs (DAERA) in Northern Ireland. These organisations are collectively known as CoRWM's Sponsors.
3. The Work Programme sets out CoRWM's work plans for the next three years, how the Committee is financed and the areas in which CoRWM plans to work. CoRWM updates this document annually, where it is then agreed by Sponsor Ministers and published on CoRWM's website.
4. This Work Programme also describes the Committee's background and remit; its methods of working and enablers; and its priorities and proposed deliverables 2018-21.
5. CoRWM's financial and working year begins on the 1st April and ends on the 31st March.
6. On 25 January 2018, consultations on policy for engaging communities in a Geological Disposal Facility (GDF) siting process were launched by BEIS and DAERA in Northern Ireland (joint consultation) and by Welsh Government. A further consultation was launched by BEIS regarding a National Policy Statement (NPS), which would set out a framework for examining development consent applications for geological disposal infrastructure. Much of the Committee's work early in this year will focus on activities related to these consultations and their outcomes.
7. The Committee also has a remit to advise on radioactive waste management issues more broadly, which includes scrutinising the storage of radioactive waste; advising the Scottish Government on Scottish policy for near-surface near-site waste management; management for spent fuel and other nuclear materials, and observing Radioactive Waste Management Ltd. (RWM) as it transitions into a GDF delivery organisation.
8. The current membership of CoRWM is given in Annex B.

3. Background to our work

9. CoRWM was set up in 2003 as part of the Government's Managing Radioactive Waste Safely (MRWS) programme. Its initial remit was to oversee a review of the options for the long-term management of the UK's higher activity radioactive waste (HAW) and to recommend an option (or combination of options) to Government. CoRWM reported in July 2006 (CoRWM doc. 700) and Government responded in October 2006, accepting most of CoRWM's recommendations. CoRWM's principle recommendation described geological disposal of radioactive waste as the best available approach to its long-term management, and recommended progress as soon as practicable.
10. In October 2007, CoRWM was reconstituted, with revised Terms of Reference and expertise, to provide independent scrutiny and advice to UK Government and devolved administration Ministers on the long-term management, including storage and disposal, of radioactive waste.
11. After January 2009 Allerdale and Copeland Borough Councils formed a partnership with Cumbria County Council to explore the possibility of hosting a GDF. However, in January 2013, Cumbria County Council withdrew from the partnership and the project ended. The 2014 White Paper: 'Implementing Geological Disposal' set out a framework of actions committing the Government to launch an improved siting process with greater clarity and resources to help communities be informed and participate.
12. In 2018, CoRWM work is mostly centred on the ongoing programme of GDF siting and robust interim storage of HAW. CoRWM also is on hand to provide both scheduled and responsive advice on wider waste issues, such as any arising from the UK's exit from the Euratom treaty.
13. CoRWM also advises the Devolved Administrations of Scotland, Northern Ireland, and Wales on their policies including where they differ from that of the UK Government, for example the Scottish Government policy of near-site near-surface storage and disposal.
14. CoRWM's current Terms of Reference are available on the CoRWM website¹.
15. Though CoRWM's membership and remit have changed over the years, CoRWM members continue to conclude unanimously that geological disposal is the best available approach to safely dispose of the UK's radioactive waste and prevent it from being a financial and environmental burden to future generations.

¹ <https://www.gov.uk/government/organisations/committee-on-radioactive-waste-management/about/terms-of-reference>

4. How we work

16. The Committee formulates its key advice and takes decisions by consensus in plenary session. It holds six open plenary meetings each year that the public can attend. The Committee also holds closed plenary meetings to take evidence and have discussions with officials.
17. The Committee provides its advice through a variety of methods. Members' views on some issues may be communicated in person or as commentary on documents. More complex issues will often require the consensus of the Committee through discussion at plenary meetings and may be presented in a formal letter, report, or recommendation.
18. CoRWM Doc. 3394 sets out a new system of categorising CoRWM advice. It describes how *CoRWM Papers* and *CoRWM Recommendations* always constitute a consensus committee view, where *CoRWM Advice Notes* always constitute the view of a subgroup unless clearly stated otherwise. Other advice, such as in meeting minutes, emails, and commentary on documents is to be considered the individual view of members unless stated otherwise. This latter, less formal, advice is collectively categorised as *CoRWM Comments*.

Table 1: Categories of CoRWM Advice

Category	Examples	Default level of consensus required
"Recommendation" ²		Consensus view of committee.
Report	Consultation response, technical report, position paper	Consensus view of committee.
Note	Advice note, meeting note, summary note	Consensus view of subgroup unless stated otherwise.
Comments	Document comments, emails, meeting minutes	Member's individual views unless stated otherwise.

19. Much of the work of the Committee is carried out by subgroups. Each subgroup focuses on an area of interest or aspect of a programme, and contains members with relevant knowledge, skills and experience. The membership and focus of these subgroups is given in Annex B.

² Potentially formalised in the Annual Report or presented to Sponsors for their consideration.

20. The Chairs of the subgroups are responsible for preparing work plans to meet the requirements set out in this work programme. Subgroup chairs must also ensure the work of the subgroup is reported to the Committee in order for the Committee to formulate its advice.

CoRWM's Funding and Time Allocation

21. CoRWM is funded by the Department for Business, Energy and Industrial Strategy (BEIS). CoRWM's budget remains unchanged for 2018-19, with £275,000 allocated for members' fees, expenses, and costs relating to meetings and site visits. A further £45,000 will cover Secretariat functions such as recruitment and administrative support.

22. Budgets for 2019-20 and 2020-21 have not been agreed, but the Committee has produced estimates of spend. A breakdown of CoRWM anticipated expenses for the years 2018-21 is given in Table 2:

Table 2: CoRWM budget estimates 2018-21

Item	Budget (£k)		
	2018-19	2019-20	2020-21
Members' Fees			
Accommodation, Travel, Subsistence, Visits	275	275	275
Administration, Recruitment and Secretariat	45	25	45
TOTAL	320	300	320

23. The indicative allocation of Committee Members' working days for 2018-19 is given in Table 3:

Table 3: CoRWM members time allocations for 2018-19 by role

CoRWM Role	Indicative time allocation for role (days)	Number of Members in role	Total indicative time allocation for role (days)
Chair	64	1	64
Deputy Chair	46	1	46
Subgroup Chair	39	7	273
Member	35	4	140
All CoRWM Roles		13	523

CoRWM Stakeholders

24. CoRWM engages with a wide variety of stakeholders to ensure CoRWM members have up-to-date information and access to a broad range of views in radioactive waste management.

25. In developing this work programme, the Committee consulted the following groups for their feedback:

- BEIS Strategy, Engagement and Innovation Team
- BEIS GDF Team
- BEIS Decommissioning and Radioactive Waste Team
- BEIS Euratom Exit Team
- Scottish Government
- Welsh Government
- DAERA
- Nuclear Decommissioning Authority (NDA)
- Radioactive Waste Management Limited (RWM)
- Office for Nuclear Regulation (ONR)
- Environment Agency (EA)
- Natural Resources Wales (NRW)
- Scottish Environment Protection Agency (SEPA)

The proposed 2018-21 work programme reflects the comments that were received.

5. Our tasks and focus

Our Work Areas for 2018-19

26. Much of CoRWM's work will be focused on activities related to the outcomes of the GDF consultations. Early in the 2018-19 Work Year, CoRWM will advise on proposals for, and formally respond to, BEIS Consultations on Working With Communities and a National Policy Statement on Geological Disposal Infrastructure. CoRWM will continue to scrutinise and advise on the documentation, technical information, and plans supporting RWM and Government's community engagement and siting process.
27. Further work will focus on advice to Welsh Government on the GDF consultations, and to Scottish Government on their near-surface near-site storage and disposal policy.
28. The Committee has not allocated a specific task regarding Northern Ireland activities. The Committee will continue to provide advice to Northern Ireland at their request.
29. In the wider waste management landscape, CoRWM will be reviewing the NDA's assumptions and strategy for managing the UK waste inventory, and maintain a watching brief to advise Sponsors of any implications from the UK's withdrawal from the Euratom Treaty.
30. The scope of this Work Programme is built on the assumption that current levels of Secretariat support will continue to be in place. The Committee is currently supported by both a Committee Secretary and a Technical Secretary within BEIS.
31. CoRWM Work Areas for the coming work year are as follows:
 - 1:** Scrutiny of and advice to BEIS and RWM on activities related to Working With Communities policy and related siting and engagement documents.
 - 2:** Scrutiny of and advice to BEIS and RWM on technical site evaluation criteria and plans for site investigation and characterisation.
 - 3:** Scrutiny of and advice to BEIS and RWM on activities related to GDF licensing and the Implementing Geological Disposal workstream on planning and the National Policy Statement (NPS).
 - 4:** Advice to RWM as it develops into a GDF delivery body and nuclear site licensee.

5: Scrutiny of and advice to Scottish Government on the management of radioactive waste in Scotland.

6: Scrutiny of and advice to the Welsh Government on the management of radioactive waste in Wales, including the possibility of a review of the radioactive waste infrastructure in Wales.

7: Scrutiny of and advice to BEIS and NDA on the storage of radioactive waste, spent fuel and nuclear materials that may be destined for disposal in a GDF.

8: Scrutiny of and advice to BEIS, SG, WG, and DAERA on activities and plans for the UK's withdrawal from the Euratom Treaty.

9: Scrutiny of and advice to BEIS, SG and NDA on the UK's waste strategies.

10: Responsive advice, reserve, and other miscellaneous work providing scrutiny and advice to stakeholders in wider waste management areas.

11: Formulation of advice at plenary meetings.

12: Work on the quarterly updates, annual report and work programme.

13: Management and administration of the Committee.

Table 4: Time allocation for Work Areas 2018-19

Work Area	Work Area short description	Subgroup	Allocation days
1	WWC & Communications	1	30
2	Safety Case & Siting	2	24
3	Planning & Regulation	3	24
4	GDF Delivery	4	12
5	Scottish Governance	5	24
6	Welsh Governance	6	24
7	Waste Storage and Materials	7	12
8	Euratom	8	18
9	Waste Strategies	9	24
10	Responsive work,	All	39
11	Plenary meetings	All	195
12	Annual Report and Work Programme	All	52
13	Committee Management	Chair & Deputy Chair	45
Total			523

Our Work Areas for 2019-21

32. For planning purposes this allocation is scaled across the next two years. CoRWM's work plans are dependent upon both the outcome of the Tailored Review and progress made by the GDF programme. CoRWM's work is likely to cover the same broad areas as in 2018/19. Tasks will be refined in future Work Programme updates according to the status and requirements of the GDF Programme and waste management policy etc.

- 1** Scrutiny and provision of advice to BEIS and RWM on activities related to community engagement and communications.
- 2** Scrutiny and provision of advice to BEIS and RWM on activities relating to the development of a GDF safety case.
- 3** Scrutiny and provision of advice to BEIS and RWM on GDF siting activities, including down-selection of potential sites and the timescale for and of cost carrying out site selection in the 3 rock types.
- 4** Scrutiny and provision of advice to BEIS and RWM on activities related to GDF planning and regulation in the siting process.
- 5** Scrutiny and provision of advice to the Scottish Government on the management of radioactive waste in Scotland, including the implementation of the near surface – near site disposal strategy.
- 6** Scrutiny and provision of advice to the Welsh Government on the management of radioactive waste in Wales.
- 7** Scrutiny and provision of advice to BEIS and NDA on the storage of radioactive waste, spent fuel and nuclear materials that may be destined for disposal in a GDF.
- 8** CoRWM outreach activities including being available to Communities that are active in the GDF siting process, and engagement with international counterpart organisations to benchmark UK progress.
- 9** Formulation of advice at plenary meetings.
- 10** Work on the annual report, quarterly reports and work programme.
- 11** Management and administration of the Committee.

Annex A – Work Areas, Tasks and Deliverables for 2018-19

33. Table 5 provides a description of each proposed Work Area for 2018-19, together with Tasks and indicative deliverables or records, the task priority and the planned resource allocation.

34. CoRWM will produce a number of deliverables in the form of informal summary notes for Government following meetings. Currently, this is the preferred approach to delivering advice due to the need for timeliness and flexibility. CoRWM will endeavour to publish all of its reports. CoRWM will also produce an Annual Report for 2017-18 for publication in June 2018, and further plans to produce and publish quarterly updates.

Table 5: Proposed work areas, tasks and indicative deliverables for 2018-19

Work Area	Task and <u>Deliverable</u>	Priority	Resource (Total working days)
1. Scrutiny of and advice to BEIS and RWM on activities related to Working With Communities (WWC) policy and related siting and engagement documents.	1A Response to BEIS Working With Communities Consultation. (Report)	Higher	6
	1B Advice (Note) to BEIS on WWC policy development post-consultation.	Medium	6
	1C CoRWM response to Welsh Government consultation. (Report) Also see Task 5A.	Higher	6
	1D Advice (Note) to BEIS and RWM on the development of RWM's siting documentation – such as the Community Engagement Plan, Siting Implementation Overview, Site Evaluation Framework.	Medium	12

2. Scrutiny of and advice to BEIS and RWM on technical site evaluation criteria and plans for site investigation and characterisation.	2A Advice (Note) to BEIS on RWM's preparations for surface based investigations.	Medium	6
	2B Review of the timescales for the delivery of all phases of a GDF, but particularly the site characterisation and construction phases – consideration and advice (Report) on what could be done to accelerate progress on these phases.	Medium	18
3. Scrutiny of and advice to BEIS and RWM on activities related to GDF licensing and the IGD workstream on planning and the National Policy Statement (NPS).	3A CoRWM Response to the BEIS NPS Consultation. (Report).	Higher	6
	3B Advice (Note) to BEIS on response to NPS consultation & response to parliamentary recommendations.	Medium	12
	3C Advice (Note(s)) to BEIS on the draft Statutory Instrument prescribing the licensing of a GDF. Committee will also meet with the Office for Nuclear Regulation (ONR).	Medium	6
4. Scrutiny of and advice to RWM as it develops into a GDF delivery body and nuclear licensee.	4A Monitor and provide advice to BEIS and RWM, if appropriate, on the status of actions resulting from the IPA review of RWM's readiness to launch.	Medium	4
	4B Watching brief on RWM's development plans from observation of RWM cultural workshops.	Medium	4
	4C Advice (Note(s)) to RWM following a workshop on RWM's Letters of Compliance process documentation. See also 3C r.e. ONR.	Medium	4

5. Scrutiny of and advice to the Scottish Government (SG) on the management of radioactive waste in Scotland.	5A Meeting (Notes) with Scottish Ministers and support to SG staff on HAW IS and other radioactive waste management issues, including international aspects and waste substitution etc.	Higher	8
	5B Advice (Note) to SG on any developments potentially required to help deliver Scottish Government's near surface disposal strategy.	Lower	4
	5C Advice (Notes) from engagement with Scottish Nuclear Sites group meetings, SEPA and SG around the Integrated Authorisation Framework process and, in collaboration with SG8, producing tailored advice on Euratom in Scottish context.	Medium	8
	5D Advice (Note) to SG on the impact of BSS/HASS compliance on waste management issues.	Medium	4
6. Scrutiny of and advice to the Welsh Government (WG) on the management of radioactive waste in Wales.	6A CoRWM response to Welsh Government consultation. (Report) Also see Task 1C.	Higher	8
	6B With SG1, provide advice (Note) to WG on WWC policy development post-consultation.	Medium	8
	6C Advice (Note) to the Welsh Cabinet Secretary for Energy, planning and Rural Affairs on the WWC consultation.	Higher	4
	6D Scrutiny of and advice to WG on engagement with potential host communities in Wales should they come forward.	Medium	-

<p>7. Scrutiny of and advice to BEIS, and NDA on the storage of radioactive waste, spent fuel and nuclear materials that may be destined for disposal.</p>	<p>7A Advice (Report) to sponsor organisations on the storage of radioactive waste, spent fuel and nuclear materials.</p>	Higher	12
<p>8. Scrutiny of and advice to BEIS, SG, WG, and NIE on activities and plans for the UK's withdrawal from the Euratom Treaty.</p>	<p>8A Ongoing advice (Note) to BEIS, SG (see also 5C), WG, and NI Exec on the changes needed to current UK arrangements for managing radioactive waste following exit from the Euratom treaty.</p>	Medium	6
	<p>8B Advice to BEIS and other sponsors on options for transitional transboundary movement of radioactive waste and spent fuel.</p>	Higher	4
	<p>8C Advice to BEIS and other sponsors examining relationship options for Euratom Article 35 on inspections.</p>	Medium	4
	<p>8D Advice to BEIS and other sponsors examining relationship options for Euratom Article 37 on waste disposal plan reporting.</p>	Medium	4
<p>9. Scrutiny of and advice to BEIS, SG and NDA on the UK's radioactive waste strategies.</p>	<p>9A Advice (Note) to BEIS on their assessments of a risk-based approach to waste disposability.</p>	Medium	6
	<p>9B Scrutiny and advice (Note) to BEIS, the NDA and RWM on their ongoing reviews, assessments, and summary reports on disposal technologies which may be complementary to geological disposal, including technologies with the potential to facilitate more efficient nuclear decommissioning.</p>	Medium	12

	9C Consideration and advice (Note) regarding the impact of additional inventory from new nuclear build, the development of Advanced Nuclear / SMR technologies and revised strategy to the decommissioning of the Magnox fleet to the availability of current and future storage capacity in line with the work areas described in 9A and 9B above.	Medium	6
10. Responsive advice, reserve, and other related tasks providing scrutiny and advice to stakeholders in wider waste management areas.	10A Advice to stakeholders on CoRWM observations following visits to UK sites of significance in radioactive waste management.	Lower	26
	10B Advice to stakeholders on CoRWM observations following attendance at stakeholder engagement events.	Lower	6
	10C Advice to stakeholders from engagement with counterpart international expertise.	Lower	6
	10D Advice to stakeholders from ongoing review of existent material such as the generic Disposal System Safety Case.	Lower	6
11. Formulation of advice at plenary meetings.			195*
12. Work on the quarterly updates, annual report, and work programme.			52

13. Management and administration of the Committee.	13A Consideration and implementation (Note) of recommendations from the Tailored Review of CoRWM occurring Feb - March 2018.	Higher	
	13B Consideration (Note) of CoRWM's potential for wider engagement with stakeholders.	Medium	

* Each member (13 total), for each of 6 plenary meetings, will prepare and review material for half a day, and attend two days of meetings.

Annex B CoRWM Members



Acting Chair

Campbell Gemmell is a Partner in Canopus Scotland Consulting, working largely on environment policy and regulation issues in the EU, Australia and China.

Campbell is currently also a Consultant with the World Bank Group and Chair of Scottish Government's Round Table on Environment and Climate Change Group on Environmental Governance. He is Visiting Professor at Strathclyde University Law School, Honorary Professor of Environment Research, Policy, Regulation and Governance in the University of Glasgow and Adjunct Professor in Environment Contamination Assessment and Remediation in the Future Industries Institute at UniSA, Adelaide.

He is former CEO of the South Australian EPA (2012-14) and was CEO of SEPA (2003-12), with, in Scotland, responsibility for environmental regulation of the civil nuclear programme and relevant wastes from Scottish defence and research sites. He was closely involved in assessing and tackling the Dounreay particles legacy and related issues in other locations in Scotland. He was a member and Chair of the Dounreay Particles Advisory Group 2001-11. Campbell also chaired the South Australian State Radiation Protection Committee 2012-14 and was, during 2016, an Independent Advisor to Scottish Government on Underground Coal Gasification.

Campbell is also a qualified mediator.

Current term of office ends: **November 2020**



Acting Deputy Chair

Julia West is Principal of West Consult having spent most of her career at the British Geological Survey (BGS). She is also an Honorary Visiting Professor at the University of Manchester (School of Earth, Atmospheric and Environmental Sciences). She is a Chartered Biologist and Fellow of the Royal Society of Biology.

Julia has a PhD in geomicrobiology with over 35 years of practical experience in the multi-disciplinary science underpinning radioactive waste management. She has provided expertise and advice to national programmes in the UK, Europe, Japan and North America, often working in international collaborations. Her work has included site

characterisation and performance assessment studies, development of repository concepts, natural analogue studies as well as her seminal geomicrobiology research.

Julia also has long experience in advisory groups and committees in the UK and overseas. She has a great interest in the communication of geoscience, lecturing and writing on this topic, particularly in the context of radioactive waste disposal.

Julia is the author/co-author of over 200 articles, scientific papers, book chapters and commercial technical reports.

Current term of office ends: **November 2020**



Gregg Butler is Co-Director of Integrated Decision Management Ltd, Professor of Science in Sustainable Development at the University of Manchester, and Head of Strategic Assessment for the Dalton Nuclear Institute.

He has a BSc and PhD in metallurgy from Swansea University, and over 45 years' experience in the nuclear industry, having worked in most parts of the fuel cycle, in R&D, planning, commercial, plant operations, plant and site management and director roles. He was a member of the Radioactive Waste management Advisory Committee from 1994 to 2004. Current research interests include Generic Feasibility Assessment of nuclear systems, plutonium use, the sustainability of nuclear power and its regulation, and effectiveness of decision making methodologies in bringing robust conclusions to be reached taking account of economics, regulatory outcomes, and stakeholder views and values.

Current term of office ends: **November 2018**



Paul Davis is the owner of EnviroLogic Inc., an environmental and water resources consulting company in Durango, Colorado, USA.

He has over 30 years of experience in the geologic disposal of radioactive waste, starting with site characterization of the Waste Isolation Pilot Project (WIPP) for the United States Geological Survey. At Sandia National Laboratories, he participated in and led the development of performance assessment methodologies for geologic repositories in bedded salt, basalt, and volcanic tuff for the US Nuclear Regulatory Commission, specializing in groundwater flow and transport modelling and the quantification and propagation

of uncertainty. He also provided technical support for the development of safety standards for high-level waste disposal for the U.S. Environmental Protection Agency and led the WIPP team responsible for the integration of site characterization, research, performance assessment and regulatory compliance.

He is currently collaborating with Los Alamos National Laboratories in the quantification of uncertainty in stable isotope analyses and with Moscow State University, Russia in the development of regional groundwater flow models.

Current term of office ends: **November 2018**



Professor Melissa A. Denecke is Scientific Director of the Dalton Nuclear Institute at The University of Manchester and holds a Chair in the University's School of Chemistry.

She has over two decades experience in nuclear fuel cycle R&D, notably in disposal of radioactive waste and legacy clean-up. She is a world expert on studies of radioactive materials using synchrotron radiation. Melissa serves on a number of scientific advisory boards, including the DESY Photon Science Committee and the Institut de Chimie Séparative de Marcoule, and committees propagating gender balance, such as Women in Nuclear Global Executive Board representing Europe.

Current term of office ends: **November 2020**



Andy Hall has recently retired from the position of Chief Nuclear Inspector in the Office for Nuclear Regulation.

His career with the regulatory body spanned technical assessment, site inspection and nuclear policy roles, and over the years he held various senior management positions including Head of the Nuclear Power Reactors Division, Head of the Nuclear Fuel Cycle & Decommissioning Division, and Head of the Health & Safety Executive's Nuclear and Hazardous Installations Policy Division.

His expertise was recognised internationally through his appointment as Chair of the European Nuclear Safety Regulators Group (ENSREG), which advises the European Commission, and his election to Vice-President for the 4th Review Meeting of the Joint Convention on the

Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Andy's early career was spent in academia undertaking research in astrophysics, during which he was elected a postdoctoral Research Fellow and member of the Governing Body of St. Edmund Hall, Oxford. He is a Fellow of the Institute of Physics.

Current term of office ends: **November 2020**



Joanne Hill is an Engineer with over 20 years' experience in the nuclear industry holding senior roles in academic, regulatory and commercial environments. She is a specialist in radioactive waste management, with experience in the civil nuclear energy programme covering operational and decommissioning sites, new build and geological disposal facilities.

Joanne is a Fellow of the Institute of Materials, Minerals and Mining (FIMMM) and holds a PhD in Radioactive Waste Management. After gaining her PhD she worked as a Senior Research Fellow in the Immobilisation Science Laboratory at the University of Sheffield, before moving to Nirex (now Radioactive Waste Management Ltd) as the Wasteform Research Manager focusing on the provision of underpinning evidence to support the Geological Disposal Facility (GDF) concept.

Joanne moved to the private sector in 2006 and has worked in a number of consultancy roles covering a broad range of the civil nuclear sector. She is currently a Director at Collingbourne Consulting Limited. Throughout her career, Joanne has developed a wide and in depth knowledge and experience in the field of radioactive waste management and disposal in addition to the personal qualities necessary to build and maintain strong business relationships.

Current term of office ends: **November 2020**



Stephen Newson is a Chartered Engineer and Fellow of the Institute of Materials, Minerals and Mining and is currently working as a Mining Consultant on a range of underground projects in the UK and overseas.

He has over 40 years of mining experience including operational management, research and development, business planning and the design and construction of large underground excavations. He spent 16 years with British Coal, latterly responsible for the specification and approval of underground tunnel and coalface support systems on a national basis. During this time his was also a UK representative on the European Experts' Committee on tunneling systems. He has worked for a number of major companies on new mine construction and expansion projects in Australia, Asia, North America and Africa. He has also, as a consultant, previously worked on underground design and planning projects related to the potential disposal of radioactive waste underground.

Current term of office ends: **November 2018**



Simon Redfern is Professor of Mineral Physics at the University of Cambridge. His research focuses on the behaviour of minerals and aqueous fluids at high temperatures and pressures. He has previously led large research projects investigating the fate of radionuclides in minerals and in the environment, within the context of searching for methods for high level radioactive waste disposal.

He studied Mineral Sciences at the University of Cambridge, obtaining a BA and PhD. Since then he has published more than 200 research papers in the peer reviewed scientific literature and mentored dozens of postgraduate students to their own PhDs.

He currently serves as a member of the Science Board of the Natural Environment Research Council and formerly filled a similar role on the Science and Technologies Facilities Council, with particular oversight of national neutron research facilities for environmental science.

Current term of office ends: **November 2018**



Richard Shaw is an exploration and mining geologist (C. Geol; Eur. Geol) with over 25 years of experience in the deep geological disposal of radioactive waste. He retired from the British Geological Survey in October 2016.

Previous experience includes 7 years of exploration, environmental impact assessment and mining feasibility for a uranium deposit in Africa. He was Team Leader of the BGS's Radioactive Waste Team until April 2016 with responsibility for all work, both internally funded and commissioned that the BGS undertook in the radioactive waste disposal sector.

He has considerable experience of the Nirex site investigation programmes and relevant experience of other European programmes, in particular those of France and Sweden, and has undertaken work for Andra, Ondraf-Niras, SKB, Covra, and JAEA as well as RWM. He was Co-ordinator (2009-2013) of the EC FP7 Euratom FORGE (Fate of Repository Gases) Project. This pan-European (24 partners in 12 countries) was looking at the generation, migration and fate of gases in a radwaste repository context.

Current term of office ends: **November 2020**



Stephen Tromans QC is a barrister practising at 39 Essex Chambers, London.

He was Joint Head of Chambers from 2011-2015. He was worked as an academic at Cambridge (1981-1987) and as a solicitor (1987-1999). He became a barrister in 1999 and was appointed Queen's Counsel in 2009.

His area of specialism is environmental, energy natural resources and planning law. He has extensive experience of advising companies and government and representing them in court and at public inquiries. He has a particular focus on nuclear law and is the author of the leading text, "Nuclear Law". He is also the author of leading works on environmental impact assessment and contaminated land and has spoken and written widely on these topics.

He has been a member of the UK Environmental Law Association (UKELA) since its formation in 1986, and has been Chair and a Council member of UKELA. He is also a member of the International Nuclear Law Association (INLA) and a director of INLA UK. From 1994-2002 he was a Council Member of English Nature, the

predecessor of Natural England and from 2010-2014 was the Chair of the Environmental Law Foundation (ELF).

Current term of office ends: **November 2018**



Andrew Walters is an Environmental Lawyer and Chartered Town Planner.

He has worked on an extensive range of project and policy work in the public and private sectors with a career stretching across 20 years in the UK and overseas. He has developed a reputation for delivery of complex environmental consents on a diverse range of infrastructure projects from the construction of deep water ports and harbours, nationally significant rail, highways, bridges, energy, waste and commercial development projects.

Andrew's regularly leads consenting campaigns bringing a deep understanding of the challenges of consenting development projects in multiple legislative environments, often with complex engineering considerations in highly sensitive sites of significant environmental importance.

Current term of office ends **November 2020**



Janet Wilson is the owner of Touchstone Nuclear Ltd providing strategic advice and support to the nuclear industry.

She has spent the majority of her career to-date working in the nuclear sector (public and private both civil and defence) at senior and executive level as a policy developer, strategic thinker, regulator and most importantly "doer" with an expert interest in areas of organisational development, nuclear safety, security, environment, non-proliferation and policing (armed response).

She is a Chartered Engineer, a Fellow of the Institution of Mechanical Engineers, a Liveryman of the Worshipful Company of Engineers, a Member of the institute of Directors and has a PhD associated with nuclear reactor safety.

Current term of office ends: **November 2018**

Annex C Subgroup Focus and Membership

Subgroup 1: Working With Communities and Communications (6 Members)

Primary tasks

1. To scrutinise the activities of BEIS, the Welsh Government and RWM in relation “communities” in the context of the UK and WG policy “Implementing Geological Disposal”, how communities are represented and community benefits.
2. To scrutinise RWM’s communication strategy.
3. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Dr Janet Wilson (Subgroup Chair)
Mr Paul Davis
Professor Melissa Denecke
Dr Joanne Hill
Professor Simon Redfern
Professor Julia West

Subgroup 2: GDF Safety Case and Geology (6 Members)

Primary tasks

1. To scrutinise RWM’s siting activities
2. To scrutinise RWM’s development of the GDF safety case.
3. To review the timescale for and cost of site characterisation
4. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Mr Paul Davis (Subgroup Chair)
Dr Andy Hall
Mr Stephen Newson
Professor Simon Redfern
Dr Richard Shaw
Professor Julia West

Subgroup 3: Planning and Regulation (4 Members)

Primary Tasks

1. To scrutinise the work being done by BEIS on the development of the Draft NPS for geological disposal.
2. To scrutinise ONR and BEIS activities associated with prescribing the disposal of radioactive waste as a licensable activity under the `Nuclear Installations Act 1965 as amended.

3. To scrutinise the development of the GDF regulatory framework both during the run-up to the launch of the GDF siting process and during the initial engagement between RWM and interested communities.
4. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Dr Andy Hall (Subgroup Chair)
Mr Stephen Tromans QC
Mr Andrew Walters
Professor Julia West

Subgroup 4: GDF Delivery (4 Members)

Primary Tasks

1. To maintain a watching brief on BEIS business case and RWM review activities.
2. To maintain a watching brief on RWM's transition into a GDF delivery organisation, and advise on its development into a nuclear site licensee.
3. To report to the main CoRWM Committee to enable the development of advice to ministers, NDA and RWM

Membership

Mr Stephen Newson (Subgroup Chair)
Professor Campbell Gemmell
Dr. Joanne Hill
Mr Stephen Tromans QC

Subgroup 5: Scottish Government Activities (4 Members)

Primary Tasks

1. To scrutinise the Scottish Government's activities in relation to the management of higher activity radioactive waste (HAW) in Scotland.
2. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Professor Campbell Gemmell (Subgroup Chair)
Mr Andrew Walters
Dr Janet Wilson
Mr Stephen Newson

Subgroup 6: Welsh Government Activities (4 Members)

Primary Tasks

1. To scrutinise the Welsh Government's activities in relation to the delivery of the IGD policy in Wales.

2. Support SG1 on the Welsh Government's activities on "Communities" and communication.
3. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Professor Gregg Butler (Subgroup Chair)
Professor Melissa Denecke
Dr Andy Hall
Dr Richard Shaw

Subgroup 7: Storage of Radioactive Waste, Spent Fuel and Nuclear Materials (3 Members)

1. Keep a watching brief on the storage of radioactive waste, spent fuel and nuclear materials. The subgroup will focus on engagement with the NDA, but will also keep an eye on spent fuel and HAW storage in Wales and Scotland.

Membership

Professor Gregg Butler (Subgroup Chair)
Professor Simon Redfern
Dr Joanne Hill

Subgroup 8: Euratom exit implications for radioactive waste management (4 Members)

1. Scrutiny and advice to BEIS, SG, WG, and NIE on the radioactive waste management implications of the UK withdrawal from the Euratom Treaty

Membership

Mr Stephen Tromans QC (Subgroup Chair)
Professor Campbell Gemmell
Dr Andy Hall
Mr Andrew Walters

Subgroup 9: Waste strategy (6 Members)

1. To provide scrutiny and advice to sponsors as they consider and assess options for long-term waste strategy.
2. To report to the main CoRWM Committee to enable the development of advice to Ministers, NDA and RWM.

Membership

Professor Gregg Butler (Subgroup Chair)
Mr Paul Davis
Professor Melissa Denecke
Dr Joanne Hill

Mr Stephen Tromans QC
Dr Janet Wilson

Subgroup allocation of resources

These subgroups will exist for 2018-19 only and will be replaced with new subgroups for the subsequent years covered by this programme.

Table 6: Subgroup and their memberships for 2018-19

Sub-group	Topic	Chair	Members	Allocated days
SG1	Working With Communities and Communication	Janet Wilson	Simon Redfern, Julia West, Joanne Hill, Paul Davis, Melissa Denecke	30
SG2	GDF Safety Case and Geology	Paul Davis	Richard Shaw, Simon Redfern, Andy Hall, Stephen Newson, Julia West	24
SG3	Planning and Regulation	Andy Hall	Stephen Tromans QC, Andrew Walters, Julia West	24
SG4	GDF Delivery	Stephen Newson	Campbell Gemmell, Joanne Hill, Stephen Tromans QC	12
SG5	Scottish Government Activities	Campbell Gemmell	Andrew Walters, Stephen Newson, Janet Wilson	24
SG6	Welsh Government Activities	Gregg Butler	Melissa Denecke, Richard Shaw Andy Hall	24
SG7	Storage of Radioactive Waste, Spent Fuel and Nuclear Materials	Gregg Butler	Simon Redfern, Joanne Hill	12
SG8	Euratom	Stephen Tromans QC	Campbell Gemmell, Andy Hall, Andrew Walters	18
SG9	Waste Strategy	Gregg Butler	Paul Davis, Melissa Denecke, Joanne Hill, Simon Redfern, Stephen Tromans QC, Janet Wilson	24

Table 7: Members' Indicative Time Allocations for 2018-19

Member	Work Areas ³													Total
	1	2	3	4	5	6	7	8	9	10 Misc	11 Plen	12 AR + WP	13 Mgmt	
GB ⁴						12	6		3	3	15	4		43
PD ⁴	5	6							3	3	15	4		36
MD	5					4			3	3	15	4		34
CG ⁵				3	6			3		3	15	4	30	64
AH ⁴		4	9			4		3		3	15	4		42
JH	5			3			3		3	3	15	4		36
SN ⁴		4		5	6					3	15	4		37
SR	5	4					3		3	3	15	4		37
RS		4				4			3	3	15	4		33
ST ⁴			6	1				9	3	3	15	4		41
AW ⁴			6		6			3		3	15	4		37
JWe ⁶	4	2	3							3	15	4	15	46
JWi ⁴	6				6				3	3	15	4		37
Total	30	24	24	12	24	24	12	18	24	39	195	52	45	523

³ See Table 4 for further details on Work Areas

⁴ Subgroup Chair

⁵ Acting Chair

⁶ Acting Deputy Chair

Annex D Glossary of Terms

BEIS	the Department for Business, Energy and Industrial Strategy
BGS	British Geological Society
CoRWM	Committee on Radioactive Waste Management
DAERA	the Department of Agriculture, Environment and Rural Affairs
EA	the Environment Agency
GDF	Geological Disposal Facility
GDPB	Geological Disposal Programming Board
HAW	Higher Activity Waste
IGD	Implementing Geological Disposal (the policy)
LoC	Letters of Compliance
NIE	Northern Ireland Executive
NDA	Nuclear Decommissioning Authority
NGS	National Geological Screening
NPS	National Policy Statement on Geological Disposal
NRW	Natural Resources Wales
ONR	the Office for Nuclear Regulation
RWM	Radioactive Waste Management Ltd.
SG	Scottish Government
SEPA	Scottish Environment Protection Agency
WWC	Working With Communities (the policy)
WG	Welsh Government