



Committee on Radioactive Waste Management

THIRTEENTH ANNUAL REPORT 2016-17

June 2017

CONTENTS

	Page
Chair's Foreword	4
Executive Summary	6
1. Introduction	18
Scope of CoRWM's work	18
CoRWM Membership	19
CoRWM's Outreach Activities	19
2 Delivery of the 2016-17 Work Programme	20
Implementing Geological Disposal	20
National Geological Screening	20
Working with Communities	22
Developer Led Communications and Engagement	24
Access to Learned Societies	25
National Land Use Planning	27
GDF Regulatory Framework	27
Welsh Government Activities	29
Welsh Government Geological Disposal Policy	29
Welsh Affairs Committee	30
Scottish Government Activities	30
HAW Implementation Strategy and HAW Management	30
GDF Safety Case Activities	33
RWM Transition	35
Management of Radioactive Wastes, Spent Fuel and Nuclear Materials	38
Interim Storage	39
Spent Fuel – Magnox	41
Spent Fuel – Oxide	41
LWR Spent Fuels	41
Plutonium	41
Uranium	42
CoRWM Outreach Activities	43
3 Forward Look	44
Implementing Geological Disposal	44
Working with Communities – Subgroup (1)	44
National Geological Screening – Subgroup (2)	44
Development of GDF Safety Case – Subgroup (2)	44
Planning and Regulatory Framework – Subgroup (3)	45
RWM Organisational Development – Subgroup (4)	45
RWM Letter of Compliance Process – Subgroup (4)	45
Scottish Government Activities – Subgroup (5)	45
Welsh Government Activities – Subgroup (6)	46
Management of Radioactive Wastes, Spent Fuel and Nuclear Materials – Subgroup (7)	46
Withdrawal from Euratom – Subgroup (8)	46
CoRWM Outreach	46
4 Conclusions and Recommendations	47

References		48
Annex A	CoRWM Expenditure 2016-17	49
Annex B	CoRWM Membership	51
Annex C	CoRWM's Terms of Reference	64
Annex D	Meetings Held During 2016-17	68
Annex E	List of Acronyms	70

Chair's Foreword

This past year has been a year of change for the Committee as it underwent a significant change in membership. As reported in last year's Annual Report the Committee lost four long-serving members in May 2016. In November 2016 the Committee lost two further experienced members, Professor Lynda Warren and Ms Helen Peters. I would like to take this opportunity to thank Lynda and Helen for their considerable contribution to the work of the Committee. The restructuring of CoRWM has seen the membership increase from a Chair and 11 members to a Chair and 13 members. Six new members started in July and a further 3 new members joined the Committee in December 2016.

The Committee has focused its work on scrutiny of the activities undertaken by officials in BEIS, the Welsh Government and Radioactive Waste Management Limited (RWM) to deliver the workstreams identified in the 2014 White Paper "Implementing Geological Disposal" (IGD). The Committee recognises the challenges officials have faced in the delivery of these workstreams and understands the time it has taken to address them. The Committee is, in general, satisfied with the progress being made and with the quality of the work being done. However, there are areas where improvements could be made. During the development of both the UK and Welsh Governments' policy documents relating to working with communities, national geological screening, land use planning, communication and the regulatory framework for a geological disposal facility (GDF), the Committee has provided advice which I believe has been constructive and welcomed.

The Committee has also continued to scrutinise the work of RWM on its development of indicative designs and associated safety characteristics for GDFs located in the three generic geologies, namely hard rock, clay and salt. Progress in this area has not been as good as the Committee would have liked and, given the importance of these documents to the successful delivery of the IGD policy, the Committee expects to see improvements in 2017-18.

RWM is also going through change and the Committee has been scrutinising its business and organisational development plans as it readies itself for the launch of the IGD siting policy. The Committee has concerns about the focus and direction of RWM's plans and has provided advice. Given the importance of RWM to the success of the delivery of GDF, the Committee expects to see improvements in 2017-18.

The Committee recognises that Scotland has a different policy for the management of higher activity radioactive waste and has continued to scrutinise the Scottish Government's activities and provided advice when necessary.

Overall, I believe the Committee has delivered its key targets as set out in its 2016-17 Work Programme.

For the Committee to be most effective and to operate efficiently for Members and for those we scrutinise and advise, there is a strong case for more robust secretariat support together with a CoRWM dedicated website and document management system.

On a personal note, I would like to acknowledge the dedication and commitment shown by the retiring, continuing and new Members of CoRWM during this past year. New Members have had a steep learning curve to get up to speed and all have had to cover a wide range of topics and work to tight timescales to respond to requests from BEIS, the Welsh Government and RWM. I also want to thank Professors Warren and Clark for agreeing to support the Committee as advisors to help the Committee's transition during an important phase of the Implementing Geological Disposal programme.

Laurence G Williams

Professor Laurence G Williams FEng
Chair of the Committee on Radioactive Waste Management

Executive Summary

- i. The work carried out by the Committee in 2016-17 reflects the programme outlined in the first year of the 2016-19 Work Programme (CoRWM doc 3312). The Committee's work has mainly focused on scrutinising the "Implementing Geological Disposal" (IGD) White Paper workstream activities undertaken in Department of Energy and Climate Change (DECC) / Department of Business, Energy and Industrial Strategy (BEIS) and Radioactive Waste Management Limited (RWM). The Committee has also scrutinised the work of the Welsh Government's IGD activities, the Scottish Government's radioactive waste management activities, RWM's GDF safety case development, RWM's plans to transition into a GDF delivery organisation and the interim storage of radioactive waste and other nuclear materials.

Implementing Geological Disposal Work Streams

- ii. CoRWM has spent most of its time on scrutinising the work of BEIS and RWM on the development and delivery of the IGD work streams. In all areas the progress has been slow with slippage in programme timescales due to political events outside the control of the Department and planned deliverables. The delays are indicative of the complexity of what are very challenging issues. However, the Committee believes that given the importance of geological disposal, it is better to take the time needed to achieve the right outcomes.
- iii. As described below, the Committee is generally satisfied with the progress that is being made by BEIS and RWM on the five IGD workstreams but there is room for improvement to ensure that RWM will be in a strong position to engage with interested parties when they are invited to participate in the IGD process.

National Geological Screening

- iv. The outputs of National Geological Screening (NGS) will play an important role in the success of the IGD siting process. It is vitally important that the geological information is presented to the public in a way that helps them understand what is known about the geology in England, Wales and Northern Ireland and how it relates to the safety of GDF in the three rock types namely, hard rock, clay and salt.
- v. CoRWM agrees with the Independent Review Panel's conclusion that the RWM guidance is "sound technically and it can be applied at a high level using existing and appropriate geological information; it therefore provides a basis for

assessing the prospects for a GDF safety case in the relevant geological settings”.

- vi. RWM has used the British Geological Survey (BGS) geological information to produce draft Regional Narratives that have been prepared for a non-specialist audience and include statements of geological potential of sub-areas based on the five geological aspects.
- vii. CoRWM believes the NGS output produced by RWM should be in three separate parts. The first part should focus on geological information; the second should relate this information to the safety of a GDF and the third should cover the areas that have been screened out from further consideration. Because of the importance of getting the communication of this information right, CoRWM makes the following recommendation:

Recommendation 1: National Geological Screening Outputs

Part 1 of RWM’s National Geological Screening output should comprise the British Geological Survey’s Technical Information Reports; Part 2 should show the relationship of this information to the safety of a GDF and Part 3 should contain information on areas that have been screened out from further consideration.

Working with Communities

- viii. The successful identification of potential host communities and how RWM will work with these communities to find a suitable site for the GDF(s) is central to the delivery of the whole programme. The Community Representation Working Group (CRWG) that was set up to provide advice in this important area completed its work in 2016.
- ix. CoRWM notes that DECC’s discussions with CRWG raised a number of difficult issues that would need to be resolved by BEIS during the process of drafting policy proposals for consultation. The issues raised by CRWG can be found at CRWG’s website¹.
- x. CoRWM has observed the development of the Working with Communities consultation document and has provided advice in a number of areas. CoRWM advised on the need to make it clear in the consultation document who takes the lead and who makes decisions.

¹ <https://www.gov.uk/government/groups/implementing-geological-disposal-community-representation-working-group>

- xi. CoRWM provided advice that consideration needed be given to the right of withdrawal especially to explain how it would be triggered.
- xii. CoRWM also advised that the role of the regulators should be emphasised in the consultation document. Their role is not widely understood by the public and needs to be highlighted throughout the document as a way of demonstrating that RWM will not be able to proceed without their permission.
- xiii. CoRWM observed a number of workshops held by BEIS (supported by RWM) to consult with a wide range of organisations. Each workshop was aimed at a different sector namely: Local Authority and Business Groups, Environmental and Conservation Groups, and Civil Society and Third Sector Groups. CoRWM considers that BEIS presentations were clear and concise, and the proposed process was well described including a good articulation of the right to withdraw. There was also very good interaction with the audience and very useful feedback at the events. There was a disparate understanding of the issues among stakeholders and this illustrates how challenging it is going to be to communicate the idea of geological disposal to the wider general public.

Developer Led Communications and Engagement

- xiv. CoRWM believes that one of the most significant challenges facing RWM as the developer of a GDF is the need to communicate effectively with members of the public and to engage positively with potential host communities.
- xv. CoRWM has engaged with the Communications team in RWM and the engagement lead in BEIS during the year to scrutinise the developing RWM GDF Communications Strategy. CoRWM has not seen this draft document, in spite of repeated requests, and is concerned that this vitally important document has yet to be finalised.
- xvi. CoRWM is concerned about the time it is taking for RWM to put in place its communications partner. Given the importance of the need to be able to effectively communicate issues surrounding the development of a GDF to the public and other key stakeholders, CoRWM believes that every effort should be made to progress this procurement.
- xvii. At the stakeholder events that CoRWM observed during the year the roles and responsibilities of BEIS and RWM with respect to communications have not always been clearly delineated. Given that it is essential for the public to be able to see a seamless communicated message, CoRWM makes the following recommendation:

Recommendation 2: Communication Roles and Responsibilities

BEIS should ensure that the respective roles and responsibilities of BEIS and RWM relating to GDF communication activities are clearly defined and implemented.

Access to Learned Societies

- xviii. The IGD White Paper proposed that communities engaged in the GDF siting process should be able to have access to independent third party views on issues contested during the GDF siting process. CoRWM has scrutinised the BEIS and RWM activities in this area and provided advice. CoRWM had considerable reservations about the BEIS initial thinking for providing access to Learned Societies and is continuing to provide advice as these develop further.
- xix. In view of the importance of enabling communities to have access to authoritative and independent views during the GDF siting process, CoRWM makes the following recommendation:

Recommendation 3: Access to Independent Third Party Expert Views

The UK Government, the Welsh Government and the Northern Ireland Executive should ensure that any proposed mechanism to provide independent third party expert views to communities that are engaged in the GDF siting process is independent of RWM.

National Land Use Planning

- xx. CoRWM has continued to scrutinise the BEIS activities associated with the National Policy Statement for Geological Disposal (NPS), and provided both formal and informal advice.
- xxi. In 2016, CoRWM was asked to review the NPS consultation document to accompany the NPS as part of the consultation. CoRWM was broadly content with the draft and offered comments only on a few matters of terminology.

GDF Regulatory Framework

- xxii. CoRWM believes a robust regulatory framework that is needed for the control of the design, construction, commissioning, operation and closure of a GDF is vital to the successful implementation of the IGD policy. Also the nuclear safety, nuclear security and environmental protection regulators have an important role to play in the initial siting process.

- xxiii. CoRWM met the regulators from the Environment Agency (EA) and the Office for Nuclear Regulation (ONR) in September 2016 to discuss progress with the initial actions for implementing geological disposal. The draft document 'Regulating Geological Disposal in England: an Overview' was discussed and CoRWM offered a number of comments on drafting mainly relating to the end of regulatory control and how the case could be presented to the public.
- xxiv. CoRWM provided substantive comments on the draft proposals to make disposal of radioactive wastes a licensable activity. One point noted was that although ONR would wish to delicense a GDF post-closure, the regulation had been drafted in such a way as to preclude this. Another was that as the proposed basis for licensing was hazard based and ONR's policy for delicensing is risk based, a GDF might need to be licensed even though it simultaneously met the risk criterion for delicensing. CoRWM understands that BEIS is now considering these comments.
- xxv. CoRWM is of the opinion that it is vitally important for the regulators to engage with the public at an early stage to explain the regulatory framework that ensures the safety, security and environmental protection for the GDF. Although regulatory permissions for the GDF may be some years into the future, it is vital that the public understand from the outset that a GDF will not be permitted unless RWM can demonstrate to the regulators that it is safe, secure and the environment is protected. In view of this CoRWM makes the following recommendation:

Recommendation 4: Role of the Regulators on the GDF Siting Process

The UK Government, the Welsh Government and the NI Executive should request the nuclear safety, security and environmental regulators be available during the GDF siting process to explain that the regulatory framework will control the design, construction, commissioning, operation and closure of a GDF, and their roles in the permissioning process.

Welsh Government Activities

- xxvi. The Welsh Government has approved a geological disposal policy comparable to UK Government and Northern Ireland Executive's IGD policy and hence CoRWM has been scrutinising its activities in this area and has met with Welsh Government officials on a regular basis.
- xxvii. In January 2017, CoRWM attended the Welsh National Stakeholder Workshop convened by Welsh Government to consider proposals for how Welsh communities would engage in the process of GDF site selection. CoRWM considered the workshop to be well organised and facilitated. Participants were

engaged in the process and worked well together. There was a clear exposition of the Welsh policy and its history, making clear how it differs from the UK Government and Northern Ireland Executive's approach. The policy came across as more than a rubber stamp.

- xxviii. CoRWM met with Welsh officials in February 2017 and was updated on progress with drafting the Welsh Working with Communities consultation document. CoRWM provided substantial comments on the draft and these were well received by the Welsh Government.
- xxix. CoRWM wrote to the Clerk of the House of Commons Welsh Affairs Committee to comment on its report on The Future of Nuclear Power in Wales. CoRWM commented on the recommendation in para. 122 that "*the UK Government accelerate progress on identifying the site for the GDF, and make the necessary decisions. Speeding up the process would not only help the UK to begin dealing with waste more quickly, it would also make the future for nuclear power clearer.*" CoRWM explained that whilst it agreed that progress on identifying a site for a GDF is of paramount importance, it should be borne in mind that the site selection process relies on voluntarism and hence progress will be determined by a collaborative process between the GDF developer and a community, which can be expedited but not rushed.

Scottish Government Activities

- xxx. CoRWM has continued to scrutinise the management of radioactive waste in Scotland and provide advice when necessary. There has been no substantive change in the 2011 policy although the Higher Activity Implementation Strategy (HAW-IS) provides fuller details in a number of areas. It also raises a number of questions CoRWM will wish to explore further. Spent nuclear fuel and other significant higher activity materials, not least from Dounreay, continue to be set aside as "not yet waste" and hence are addressed only after 2030, late in Phase 2 or into Phase 3. Serious questions also remain about the implementer and locations, nature and durability of storage to be pursued in the interim and the robustness of inventory and RWM's Letter of Compliance (LoC) processes. Final disposal solutions depend on the reserved model and it appears that this will continue.
- xxxi. A meeting between Scottish Ministers and the Chair of CoRWM was held in January 2017. Ministers spoke to the HAW-IS, and raised issues around radioactive waste handling in Scotland and the need for continuing advice and scrutiny of relevant issues in Scotland as well as wishing to keep abreast of relevant activities and developments in England and Wales. The Chair also met with the Chief Scientific Advisor and a member of her staff. Collaboration

on relevant areas of analysis, scrutiny and advice was discussed and agreed.

xxxii. CoRWM continued to attend the six-monthly Scottish Nuclear Sites (SNS) Meetings, (held in September 2016 and March 2017). These facilitate the broader understanding and exchange on developments in Scotland, particularly around community engagement. They also provided an opportunity to showcase progress against decommissioning plans, in particular the technological innovations being promoted by each of the sites, for example by Babcock etc. in respect of Rosyth Nuclear Submarine Decommissioning.

GDF Safety Case Activities

- xxxiii. CoRWM has not been asked to review RWM's 2016 generic Disposal System Safety Case (gDSSC) but it did express some concern about the structure of the documentation. The Committee has stayed abreast of RWM's overall safety case development and has paid particular attention to the development of the public-facing safety related documents for the three geological settings recommended in last year's annual report.
- xxxiv. In its 2015-16 Annual report CoRWM recognised the limitations of the gDSSC approach for communicating information about the design and safety of a GDF located in each of the three principal rock formations in the UK, namely: hard rock, clay and salt and recommended that RWM produce "*illustrative designs for each of the three rock types with descriptions of the associated safety characteristics.*"
- xxxv. In recommending these public-facing documents, CoRWM's goal was to encourage RWM to produce documents that would be easily understood by the public and those wishing to engage in the siting process. The documents were intended to include a simple conceptual design for potential GDFs with descriptions of the key safety characteristics for each of the three major rock types.
- xxxvi. In response to CoRWM's recommendation, RWM has drafted three public-facing documents – one for each candidate rock type. CoRWM reviewed a draft of the hard-rock version and provided RWM with a detailed set of comments. CoRWM's view is that the draft document for hard-rock requires further work before it can meet the intent of CoRWM's 2015-16 Annual Report recommendation.
- xxxvii. RWM has not yet shared the other public facing documents relating to clay and salt GDFs with CoRWM.

- xxxviii. CoRWM scrutinised the RWM Letter of Compliance process and was particularly interested to see how RWM used the 2010 and 2016 gDSSC in its disposability assessments that support LoCs. RWM presented the overall approach to disposability assessments to CoRWM with a focus on the relationship between the assessments and post-closure safety.
- xxxix. CoRWM recognises the difficulty of relating disposability assessments with post-closure safety without a site and a site-specific safety case. However, it is concerned that the technical justification for LoCs is incomplete.

Recommendation 5: Applicability of the Letter of Compliance Process to all Three Rock Types

RWM should ensure that the Letter of Compliance process is applicable to GDFs in all three rock types.

RWM Transition

- xl. The ability of RWM to be seen as a credible delivery organisation for a GDF is of paramount importance. It was for this reason that in last year's report CoRWM recommended that DECC "*should initiate an independent external review of the RWM Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation*".
- xli. CoRWM has continued to monitor and scrutinise the on-going development of RWM's organisation, particularly with respect to its capability as a delivery organisation for a GDF.
- xlii. CoRWM has scrutinised RWM's Organisational Readiness Review (ORR) which had been commissioned by the RWM Board to "*provide an objective, independent assessment of RWM's readiness to undertake the next phase of the GDF programme, particularly in undertaking constructive engagement with a number of communities leading to selection of sites for borehole investigations*".
- xliii. The interim report highlighted concerns over RWM's ability to communicate effectively, especially with regard to the potential benefits of the GDF. This applied not only to communities but also in garnering support amongst decision makers, including ministers. The sponsorship and governance arrangements for the programme were also questioned.
- xliv. CoRWM found the overall tone of the Final ORR Report encouraging but noted that there remained several key concerns/future considerations. The key

concerns focussed on:

- the delayed appointment of a strategic communications partner (a concern of CoRWM discussed above);
- the location of the Programme's SRO (Senior Responsible Owner);
- the completion of an updated Programme Business Case;
- opportunities to learn from the governance practices of other programmes;
- composition of RWM Board to encompass more diverse experience;
- the drafting of a programme/plan in a clear single document; and
- the preparation for longer-term organisational planning, especially with regard to technical and training requirements.

- xlv. The readiness review carried out for RWM, although welcome, is much narrower than the organisational review recommended by CoRWM. CoRWM's recommendation envisaged an in-depth, evidenced, objective and robust assessment of the organisational needs of a delivery body throughout its planned life. CoRWM's view is that a major, genuinely independent assessment, commissioned by DECC/BEIS and undertaken by a specialised entity would gather such experience and incorporate it into its findings along with a gap analysis and an implementation plan for any necessary changes.
- xlvi. CoRWM remains convinced that the RWM management team needs a clearly identified person who has responsibility for the delivery of the whole GDF programme and that this person must be an Executive Director on the Board.
- xlvii. CoRWM remains concerned about the dependence of RWM on its parent body and is strongly of the opinion that a GDF delivery organisation should be separate from its major customer. The Committee also has concerns relating to the suggestions that consideration is being given to moving the SRO into the NDA. At this stage, CoRWM does not believe that the SRO should be located within the NDA because it represents poor governance and exposes the NDA to criticisms around conflicts of interest. At the moment CoRWM believes the delivery of a GDF is still a politically sensitive project and should remain under the control of Ministers. The Committee still feels that an in-depth assessment by a specialised entity would make some important recommendations in this area, based on experience and consideration of need and best practice. CoRWM's 2016 recommendation has not been addressed. It remains valid and is repeated here:

Recommendation 6: Independent External Review of RWM Business Model

BEIS should initiate an independent external review of RWM's Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation.

Management of Radioactive Wastes, Spent Fuel and Nuclear Materials

- xlvi. CoRWM has continued to keep a watching brief on the UK's arrangements for the interim storage of radioactive waste and those nuclear materials that are not currently designated as a waste.
- xlix. CoRWM recognises the importance of completing the reprocessing of the remainder of the UK stocks of Magnox fuel and its implications for the GDF HAW inventory. CoRWM is also aware of the planned closure of THORP in 2018 and the cessation of oxide fuel reprocessing in the UK. CoRWM notes that the closure of THORP will reduce the options for the UK's long-term management of spent fuel, including geological disposal.
- i. CoRWM notes the work commissioned by NDA with RWM on the potential disposal of uranium in a GDF. The extremely long half half-life of ^{238}U means that the effect of the engineered barriers on predicted long-term performance of a GDF will become insignificant, with doses depending on the geology. ^{238}U and its associated decay products will dominate the residual radioactivity in a GDF on timescales around a million years, with current dose predictions being comparable with the Regulatory Risk Guidance Level, though these may be considerably less than exposures from naturally occurring uranium deposits.

Conclusions and Recommendations

- ii. In 2016-17 CoRWM scrutinised the work of DECC/BEIS, RWM, NDA and the Welsh and Scottish Governments in the following areas:
- GDF siting issues arising from the Implementing Geological Disposal (IGD) White Paper, including National Geological Screening, Working with Communities, Access to Learned Societies, National Policy Statement, Developer Led Communications, Public and Stakeholder Engagement, and the Regulatory Framework;
 - Welsh Government activities relating to the GDF siting process;
 - Scottish Government HAW activities;
 - RWM's GDF safety case development and LoC application to GDFs in all three geological settings namely; hard rock, clay and salt;

- RWM's transition; and
- NDA's strategy for the treatment and interim storage of radioactive waste and other nuclear materials.

lii. As a result of its work CoRWM makes six recommendations.

Recommendation 1: National Geological Screening Outputs

Part 1 of RWM's National Geological Screening output should comprise the British Geological Survey's Technical Information Reports; Part 2 should show the relationship of this information to the safety of a GDF and Part 3 should contain information on areas that have been screened out from further consideration.

Recommendation 2: Communication Roles and Responsibilities

BEIS should ensure that the respective roles and responsibilities of BEIS and RWM relating to GDF communication activities are clearly defined and implemented.

Recommendation 3: Access to Independent Third Party Expert Views

The UK Government, the Welsh Government and the Northern Ireland Executive should ensure that any proposed mechanism to provide independent third party expert views to communities that are engaged in the GDF siting process is independent of RWM.

Recommendation 4: Role of the Regulators on the GDF Siting Process

The UK Government, the Welsh Government and the NI Executive should request the nuclear safety, security and environmental regulators be available during the GDF siting process to explain that the regulatory framework will control the design, construction, commissioning, operation and closure of a GDF, and their roles in the permissioning process.

Recommendation 5: Applicability of the Letter of Compliance Process to all Three Rock Types

RWM should ensure that the Letter of Compliance process is applicable to GDFs in all three rock types.

Recommendation 6: Independent External Review of RWM Business Model

CoRWM's 2016 recommendation has not been fully addressed and remains valid:

BEIS should initiate an independent external review of RWM's Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation.

CoRWM THIRTEENTH ANNUAL REPORT 2016-17

1 Introduction

1.1 This is the Thirteenth Annual Report of the Committee on Radioactive Waste Management (CoRWM). It describes the Committee's work in the financial year from April 2016 to March 2017 and outlines CoRWM's current views on the status of UK plans and arrangements for the long-term management of higher activity radioactive wastes.

Scope of CoRWM's work

1.2 CoRWM's sponsors are the Department of Business, Energy and Industrial Strategy (BEIS)² for the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland. The Committee's work programme for 2016-19 (CoRWM doc. 3275) was agreed with its sponsors and was carried out within CoRWM's agreed budget (Annex A).

1.3 CoRWM's remit is given in its Terms of Reference (Annex B). These state that: "The role of the ... Committee on Radioactive Waste Management (CoRWM) will be 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. CoRWM's primary task is to provide independent scrutiny on the Government's and Nuclear Decommissioning Authority's proposals, plans and programmes to deliver geological disposal, together with robust interim storage, as the long-term management option for the UK's higher activity wastes." The Committee's remit was extended to include scrutiny of, and provision of advice to, Radioactive Waste Management Ltd (RWM).

1.4 During its work in the past year, CoRWM has primarily engaged with officials within BEIS (and its predecessor DECC) and RWM. RWM is the developer for a geological disposal facility (or facilities, should more than one be needed). The Committee has also engaged with officials in the Welsh Government, the Scottish Government and the Northern Ireland Executive and with the nuclear safety and environmental regulators.

² BEIS was created in July 2016 through a machinery of government change that saw a merger of CoRWM's then UK sponsor, the Department of Energy and Climate Change (DECC), and the Department for Business, Innovation and Skills.

CoRWM Membership

- 1.5 CoRWM has undergone considerable changes to its membership during this year. Four members, Professor Brian Clark, Professor Simon Harley, Professor Francis Livens and Mr John Rennilson retired from office on 31 May 2016. Ms Helen Peters and Professor Lynda Warren retired from office at the end of November 2016. Six new members were appointed with effect from July 2016 and a further three with effect from December 2016. In addition, the chair and four members were re-appointed, thereby providing continuity to the committee, and Brian Clark and Lynda Warren agreed to act as special advisors to the committee to provide assistance during the transition period. Details of members can be found in Annex C.
- 1.6 The change in membership has led to some changes in the working arrangements for delivering the work programme but not to the programme itself. Most significantly, the subgroups on Working with Communities and Developer Led Communications and Engagement have merged because of the close interrelationship between these two strands of work. Progress in this area was affected by a number of changes in governance. During the year the work of DECC was transferred to a new department, BEIS, with a new ministerial lead.

CoRWM's Outreach Activities

- 1.7 CoRWM's opportunities to undertake outreach activities to enable the public and the wider nuclear community to understand the work of the Committee have been hampered by political events leading to delays in issuing consultation documents, which has meant that much of its advice has had to remain confidential. It has continued to hold plenary meetings in public where possible and members have attended a number of events run by other organisations. CoRWM considers that it is important for the Committee to engage with the public and other stakeholders to gain an understanding of their views and concerns on radioactive waste management in the UK and is disappointed that it has been unable to carry out more outreach activities because of the delays during this period of policy development.
- 1.8 CoRWM held five open plenary meetings throughout the year at which members of the public were free to attend and observe the Committee in action. (CoRWM docs: 3281, 3291, 3313, 3316, 3318). At these meetings, there was opportunity for those observing to ask questions and to talk informally to Committee members during refreshment breaks.

- 1.9 In its 2015-16 report, CoRWM expressed concern that its document archive is no longer readily available to the public because of the move of CoRWM's website into the Government's general gov.uk domain which, coupled with RWM website's move to the same Government platform, makes it difficult, if not impossible, to find publications. These concerns remain although it is hoped that it may be possible to address them, at least in part, in the near future. CoRWM believes the present lack of accessibility is in direct conflict with the principle of openness and transparency, which is vitally important for the success of the IGD policy. It has also hindered the swift induction of new CoRWM members.

2 Delivery of 2016-17 Work Programme

Implementing Geological Disposal

National Geological Screening

- 2.1 The IGD White Paper states (para. 5.11) that "The Committee on Radioactive Waste Management (CoRWM) will play a scrutiny role throughout this work, providing oversight of the process to develop this [i.e., geological screening] guidance through open public and stakeholder engagement." In this role, CoRWM has continued to provide both formal and informal advice to RWM on its development of the National Geological Screening (NGS) Guidance; observed relevant meetings in which the NGS guidance was presented or discussed; and responded to RWM's consultation on the NGS guidance document.
- 2.2 CoRWM engaged with BEIS and RWM on the progress and deliverables associated with NGS throughout 2016-2017, including meeting with RWM, their contractor and BGS in November 2016 to discuss the BGS contribution to the NGS process and RWM's NGS outputs. CoRWM reviewed and commented on a number of RWM's draft documents relating to NGS.
- 2.3 CoRWM reviewed RWM's NGS Guidance which was published on 21 April 2016. This guidance defined how geological screening information would be assembled and presented. It also showed how the guidance would be applied. CoRWM also reviewed the evaluation of the guidance undertaken by the Independent Review Panel (IRP) that was convened by the Geological Society. CoRWM agrees with the IRP's conclusion that the RWM guidance is "*sound technically and it can be applied at a high level using existing and appropriate geological information; it therefore provides a basis for assessing the prospects for a GDF safety case in the relevant geological settings*".

2.4 CoRWM reviewed examples of:

- the Detailed Technical Instructions that were developed by BGS in conjunction with RWM to develop the BGS Technical Information Reports (TIRs);
- BGS TIRs for representative examples for the 13 regions within the UK on each of the five aspects of geological screening, namely geology, geological structure, groundwater, future natural change and resources.

2.5 RWM used the information in BGS's TIRs, taking into consideration safety factors relevant to a GDF, to produce the draft Regional Narratives for each of the regions. These narratives were drafted for a non-specialist audience and include statements of geological potential of sub-areas based on the five geological aspects.

2.6 CoRWM also reviewed the role and actions of the contractor hired to manage the development of the TIRs and draft Regional Narratives. The contractor's role included quality control, management of the process, technical integration and facilitation and included six cross-party audits since July 2016.

2.7 CoRWM considers that the TIRs developed by BGS at the direction of RWM and with oversight by their contractor are of high quality and provide appropriate geological input to the GDF siting programme. However, CoRWM continues to be concerned that there could be significant potential for the NGS Narratives and the TIRs to be misunderstood and possibly misused by those opposed to a GDF.

2.8 CoRWM provided advice to RWM that the NGS output should be separated into three parts. The first part would focus on geological information; the second would relate this information to the safety of a GDF and the third would cover the areas that have been screened out from further consideration.

2.9 CoRWM remains convinced that such an approach would not only better communicate the relationship between geology and the safety of a GDF, but also meet the expectations of many members of the public for the geological screening.

Recommendation 1: National Geological Screening Outputs

Part 1 of RWM's National Geological Screening output should comprise the British Geological Survey's Technical Information Reports; Part 2 should show the relationship of this information to the safety of a GDF and Part 3 should contain information on areas that have been screened out from further consideration.

Working with Communities

- 2.10 Throughout the year CoRWM has been actively engaged in scrutinising the preparations of DECC/BEIS, Welsh Government and RWM for successfully identifying and working with potential host communities and has provided advice which has been well received and acted upon. Meetings with DECC/BEIS covering both Working with Communities and Developer Led Communications and Engagement were held in May, July and August 2016 and in January and March 2017.
- 2.11 There has been significant change within government departments during the year with the European Union vote in June 2016 closely followed by the appointment of a new Prime Minister and the creation of a new government department, BEIS, in July 2016 created by the merger of DECC and the Department for Business, Innovation and Skills (BIS) and hence the GDF Team. The resulting change introduced delays in progressing the IGD workstreams but in CoRWM's view this provided an opportunity for BEIS to devote more time to developing the content for the Working with Communities consultation document, the way in which it would be communicated and more time to deal with the complex issues raised by the Community Representation Working Group (CRWG).
- 2.12 DECC had set up and chaired an expert group known as CRWG, in early 2015 to inform its developing policy. CRWG concluded its work in April 2016. DECC reported its findings to CoRWM at a meeting held in April 2016.
- 2.13 DECC reported that the Working with Communities policy it was developing had been significantly aided by CRWG and had included a dialogue on open policy making which it had found particularly helpful. DECC's Working with Communities policy had also been informed by a year-long literature review on issues around working with communities which was shared with CRWG, including CoRWM observes but was not made available to the wider CoRWM committee. DECC reported that it was about to take the policy in-house to test with its communications team, local governments and Ministers and at that time expected the document on the policy proposal to go out to consultation by summer or early autumn 2016.
- 2.14 DECC reported that discussions with CRWG had raised a number of difficult issues that would need to be resolved by BEIS during the process of drafting

policy proposals for consultation. The issues raised by CRWG can be found on its website³.

- 2.15 CoRWM questioned where the incentive was for RWM to speed up its programme or save money and what would be the role of DECC (now BEIS), after site characterisation. BEIS stated that it would instigate mechanisms for monitoring and gauging support.
- 2.16 CoRWM was given a late sight of the draft Working with Communities consultation document but was able to provide feedback to BEIS on the required timescale. CoRWM considered that the draft consultation document presented a clearly thought out framework for working with communities that had the merit of flexibility but it had some concerns over clarity of presentation. For example, CoRWM suggested that further thought be given to the document's 'story line' to make the content more understandable at first reading.
- 2.17 CoRWM advised on the need to make it clear in the consultation document who takes the lead and who makes decisions.
- 2.18 CoRWM had some concerns over the proposals for defining the spatial area within which communities might be involved. The process will have to remain flexible enough to respond to various scenarios in a way that is regarded as equitable.
- 2.19 CoRWM provided advice that consideration needed be given to the right of withdrawal especially to explain how it would be triggered.
- 2.20 CoRWM believes that it is essential that the role of the regulators is emphasised in the consultation document. Their role is not widely understood by the public and needs to be highlighted throughout the document as a way of demonstrating that RWM will not be able to proceed without their permission (see paragraph 2.48).
- 2.21 BEIS held a number of workshops (supported by RWM) to consult with a wide range of organisations. Each workshop was aimed at a different sector namely: Local Authority and Business Groups, Environmental and Conservation Groups and Civil Society and Third Sector Groups. CoRWM observed these workshops, held on the 24 January, 1 February and 9 February 2017, as part of its scrutiny function and provided informal advice about the content and delivery of each workshop to BEIS and RWM.

³ <https://www.gov.uk/government/groups/implementing-geological-disposal-community-representation-working-group>

- 2.22 The format for each workshop was the same with an introduction and update on progress by BEIS. BEIS presented clearly and concisely at all three workshops and articulated well the proposed process including the right to withdraw. There was very good interaction with the audience at all three events and very useful feedback at the events. In addition, a participant's feedback form was given to attendees at the end of the meeting and an offer of further one-to-one contact made by BEIS.
- 2.23 CoRWM was less satisfied with the RWM's input which started with a 15 minute RWM video. CoRWM welcomed the idea of a video but thought that it was inappropriate for these workshops because it was only telling the audience about what RWM scientists do. CoRWM's concerns in this regard echo those raised by participants. Comments ranged from "*if I show this to my contacts it will switch them off as there's nothing about what's in it for them*", through to "*it's very technical and I had to concentrate to understand it*". Participants questioned who the intended audience was for the video.
- 2.24 In response to CoRWM's feedback on the PowerPoint presentation given by RWM following the video at the first workshop, RWM changed its approach to an interactive style at subsequent workshops. CoRWM noted that the new style was better received than a formal PowerPoint presentation but advised that careful preparation is requisite to success including appropriate tailoring of the presentations to different audiences.
- 2.25 Participants at the workshop raised a number of points that demonstrated that there is a disparate understanding of the issues among stakeholders illustrating how challenging it is going to be to communicate the idea of geological disposal to the wider general public.
- 2.26 At its meeting with CoRWM in March 2017, BEIS updated members on progress with its plans for consultation on its Working with Communities policy including its ideas for publicising the consultation. CoRWM welcomed the attention that was being paid to communication.

Developer Led Communications and Engagement

- 2.27 CoRWM believes that one of the most significant challenges facing RWM as the developer of a GDF is the need to communicate effectively with members of the public and to engage positively with potential host communities. RWM has to command the trust and respect of potential host communities and generate confidence in the wider public, which is dependent on it being able to explain complex social, scientific and technical issues.

- 2.28 CoRWM is pleased to see that during the year, RWM has substantially increased its resources and expertise in the area of communications with a number of key new appointments.
- 2.29 CoRWM has engaged with the Communications team in RWM and the engagement lead in BEIS during the year to scrutinise the developing RWM GDF Communications Strategy. CoRWM has not seen this draft document, in spite of repeated requests, and is concerned that this vitally important document has yet to be finalised. CoRWM understands that RWM has so far been unable to procure a communications partner because of the need to obtain approval from the Cabinet Office⁴ and this has been delayed because of the political landscape.
- 2.30 CoRWM members observed the RWM Stakeholder event held in Manchester in October 2016 and provided constructive feedback to RWM. RWM staff presented progress since the last event two years ago in an enthusiastic and professional way and overall had a good message to deliver. CoRWM welcomes the use of new communications technology but advises that this needs to be used sensitively and with considerable care to avoid negative reactions.
- 2.31 At the stakeholder events that CoRWM observed during the year that the roles and responsibilities of BEIS and RWM with respect to communications have not always been clearly delineated. CoRWM understands that, although BEIS has overall policy responsibility for the efficacy of GDF communications and stakeholder strategies, RWM is responsible for developing an overall communications strategy. In order to provide clarity, CoRWM makes the following recommendation:

Recommendation 2: Communication Roles and Responsibilities

BEIS should ensure that the respective roles and responsibilities of BEIS and RWM relating to GDF communication activities are clearly defined and implemented.

Access to Learned Societies

- 2.32 CoRWM commented on BEIS's initial thoughts on the Independent Expert View Mechanism in October 2016. CoRWM had considerable reservations about quality of the documents and the adequacy of the process to deliver the intent of the IGD White Paper i.e. to enable a community that is engaged in the siting process to have access to third party views on issues contested during

⁴ RWM Readiness Review Panel Report February 2017, paragraph 6, page 11.

the GDF siting process. CoRWM recognises that the proposed process was still under development and recommended that the initial suggestions for providing access to Learned Societies should be abandoned and a new less-bureaucratic approach be developed that is primarily aimed at enabling communities that are engaged in the GDF siting approach to gain a second opinion on contested issues. CoRWM offered to provide advice on how this could best be achieved.

- 2.33 CoRWM advised that it is highly likely that communities will have access to, or prefer to use, their own “experts” and that BEIS should consider how these experts are to be accommodated.
- 2.34 CoRWM has provided advice to both BEIS and RWM that they should not be represented on any third party advisory committee as this would be regarded as the “Establishment” being in control which would compromise the independence and hence value of any advice given by the Learned Societies. Furthermore, if trust has broken down to the extent that a community wishes to seek a second opinion, how can the community be confident that their concerns would not be ‘filtered out’ by RWM if RWM was involved in the process?
- 2.35 Finding experts and specialist with the relevant expertise who can provide sound views within the context of a safety case for a GDF will be difficult enough. To find any with no prior link to this project will be next to impossible. If a community has to wait months for an answer to their request, and then sees on the pro-forma that the person has links (especially involving fees) to any of the major players, then the effort will have been nugatory. CoRWM believes that this issue should be considered in the development of the process.
- 2.36 CoRWM understands that the main intent of the use of a “third party” is to help communities that are engaged in the siting process, and who want a second opinion on a technical issue that has arisen from either their discussions with RWM or from statements that have been made by people who are outside the formal process. Therefore, any system should be aimed at primarily helping communities. If CoRWM’s terms of reference were amended to include the provision of advice to the public, it could fulfil this role. Should there be a separate mechanism, it will be important to ensure that there is clarity between the new arrangements and the role of CoRWM.
- 2.37 In view of the importance of enabling communities to have access to authoritative and independent advice during the GDF siting process CoRWM makes the following recommendation.

Recommendation 3: Access to Independent Third Party Expert Views

The UK Government, the Welsh Government and the Northern Ireland Executive should ensure that any proposed mechanism to provide independent third party expert views to communities that are engaged in the GDF siting process is independent of RWM.

National Land Use Planning

- 2.38 In August 2016, at the request of BEIS, CoRWM reviewed the draft Appraisal of Sustainability (AoS) and Habitats Regulations Assessment (HRA) to accompany the National Policy Statement for Geological Disposal (NPS). At the same time, CoRWM was given sight of the latest version of the draft NPS but was not asked to review this document. In March 2017, CoRWM was asked to provide comments on the revised draft.
- 2.39 CoRWM provided some specific examples of areas for improvement, although these were illustrative rather than exhaustive, and intended to allow others to decide whether the draft text is fit for purpose or needs further revision.
- 2.40 In September 2016 CoRWM was asked to review the NPS consultation document to accompany the NPS as part of the consultation. CoRWM was broadly content with the draft and offered comments only on a few matters of terminology.
- 2.41 In October 2016 CoRWM was asked to advise on the flood risk and climate change section of the draft NPS. In CoRWM's opinion, planning policy in this area is unlikely to adversely affect implementation of the voluntarist approach.

GDF Regulatory Framework

- 2.42 CoRWM had one meeting with the regulators from the Environment Agency (EA) and the Office of Nuclear Regulation (ONR) in September 2016, the purpose of which was to provide an update on progress with the initial actions for implementing geological disposal. CoRWM raised the relationship between planning and regulation and noted that the process for obtaining the Development Consent Order would touch on issues of relevance to the regulators.
- 2.43 The draft 'Regulating Geological Disposal in England: an Overview' was discussed. CoRWM offered a number of comments on drafting and raised a number of issues that would need to be resolved mainly relating to the end of regulatory control and how the case for so doing could be presented to the public.

- 2.44 The devolved administrations in Wales and Scotland were not represented at this meeting. It was noted that Natural Resources Wales (NRW) and the Northern Ireland Environment Agency (NIEA) are engaged in discussions on the GDF. SEPA has been involved in some meetings including one on the definition of licensing. CoRWM was told that a joint position statement on GDF implementation had been drafted between EA, NIEA, NRW and ONR but had not been approved at Board level. CoRWM asked to see a copy of the document but at the time of writing this was not yet available.
- 2.45 At CoRWM's plenary meeting in September 2016, the EA gave a presentation on its role in geological disposal. The meeting was attended by a representative of NRW who was able to advise on the situation in Wales.
- 2.46 In late 2016, CoRWM asked BEIS whether it could see the draft amendments proposed to make disposal of radioactive wastes a licensable activity. The draft document was received in February 2017 together with a request for CoRWM to provide comments.
- 2.47 CoRWM provided substantive comments to BEIS in March 2017, identifying what it saw as anomalies, and points requiring further thought if a suitable and fit-for-purpose regulatory regime is to be created. One point noted was that although ONR would wish to delicense a GDF post-closure, the regulation had been drafted in such a way as to preclude this. Another was that as the proposed basis for licensing is hazard based and ONR's policy for delicensing is risk based, a GDF might need to be licensed even though it simultaneously met the risk criterion for delicensing. BEIS is now considering these comments.
- 2.48 CoRWM believes that it is vitally important for the regulators to engage with the public at an early stage to explain the regulatory framework that ensures the safety, security and environmental protection for the GDF. Although regulatory permissions for the GDF may be some years into the future, it is vital that the public understand from the outset that a GDF will not be permitted unless RWM can demonstrate to the regulators that it is safe, secure, and the environment is protected. In view of this CoRWM makes the following recommendation.

Recommendation 4: Role of the Regulators on the GDF Siting Process

The UK Government, the Welsh Government and the NI Executive should request the nuclear safety, security and environmental regulators be available during the GDF siting process to explain that the regulatory framework will control the design, construction, commissioning, operation and closure of a GDF, and their roles in the permissioning

process.

Welsh Government Activities

Welsh Government Geological Disposal Policy

- 2.49 CoRWM met with Welsh Government officials in May 2016 and members were briefed on the proposed approach for working with communities to implement Welsh Government policy on geological disposal.
- 2.50 In January 2017, CoRWM attended the Welsh National Stakeholder Workshop convened by Welsh Government to consider proposals for how Welsh communities would engage in the process of GDF site selection. The Workshop was well attended with most of the organisations invited sending representatives. There were approximately equal numbers of stakeholders and support officials. The workshop was independently facilitated.
- 2.51 CoRWM considered that the workshop was well-organised and facilitated. Participants were engaged in the process and worked well together. There was a clear exposition of the Welsh policy and its history, making clear how it differs from the English approach. The policy came across as more than a rubber stamp.
- 2.52 CoRWM had some concerns over the presentation by RWM and, in particular the use the video referred to in paragraph 2.23, this time with a Welsh voiceover.
- 2.53 Both ONR and NRW gave presentations on their respective roles. Despite their comments that they would be working together, the presentations brought out their different approaches. Unfortunately, their role in working with communities was not really covered at all. Although it is true that they will not be making regulatory decisions until much later in the process, their involvement will be essential as part of confidence building (see comments above and Recommendation 4).
- 2.54 CoRWM met with Welsh officials in February 2017 and was updated on progress with drafting the consultation document. CoRWM was asked to provide comments on the draft before it was finalised. The draft Working with Communities consultation document was accordingly received by CoRWM at the end of March 2017. Comments on this draft and a subsequent second draft were submitted in April and will be covered in the Annual Report for 2017-18.

Welsh Affairs Committee

- 2.55 The House of Commons Welsh Affairs Committee published its report on *The Future of Nuclear Power in Wales*⁵ in July 2016. CoRWM wrote to the Clerk of the Committee to comment on the recommendation in para 122 that *the UK Government accelerate progress on identifying the site for the GDF, and make the necessary decisions. Speeding up the process would not only help the UK to begin dealing with waste more quickly, it would also make the future for nuclear power clearer.*
- 2.56 The letter stated that while CoRWM agrees that progress on identifying a site for a GDF is of paramount importance, it should be borne in mind that the site selection process relies on voluntarism. This means that progress will be determined by a collaborative process between the GDF developer and a community, which can be expedited but not rushed.

Scottish Government Activities

HAW Implementation Strategy and HAW Management

- 2.57 Scottish Government launched its Higher Activity Waste Implementation Strategy (HAW-IS) on 15 December 2016⁶ built upon the existing 2011 policy and consultation inputs received during 2015 and assessed through 2016. The Strategy Timetable is included here as Fig. 1.
- 2.58 There has been no substantive change in the 2011 policy although this strategy document provides fuller details in a number of areas. It also raises a number of questions CoRWM will wish to explore further. Spent nuclear fuel and other significant higher activity materials, not least from Dounreay, continue to be set aside as “not yet waste” and hence are addressed only after 2030, late in Phase 2 or into Phase 3. Serious questions also remain about the implementer and locations, nature and durability of storage to be pursued in the interim and the robustness of inventory and RWM’s Letter of Compliance (LoC) processes, which were designed for deep geological disposal. Final disposal solutions will continue to depend on current arrangements based on the reserved model which reflect the split of responsibilities between the UK and the Scottish Governments.

⁵ Welsh Affairs Committee 2nd Report 2016-17; HC 129
<http://www.parliament.uk/business/committees/committees-a-z/commons-select/welsh-affairs-committee/publications/>

⁶ <http://www.gov.scot/Resource/0051/00511782.pdf>

Illustrative HAW Strategy Timeline

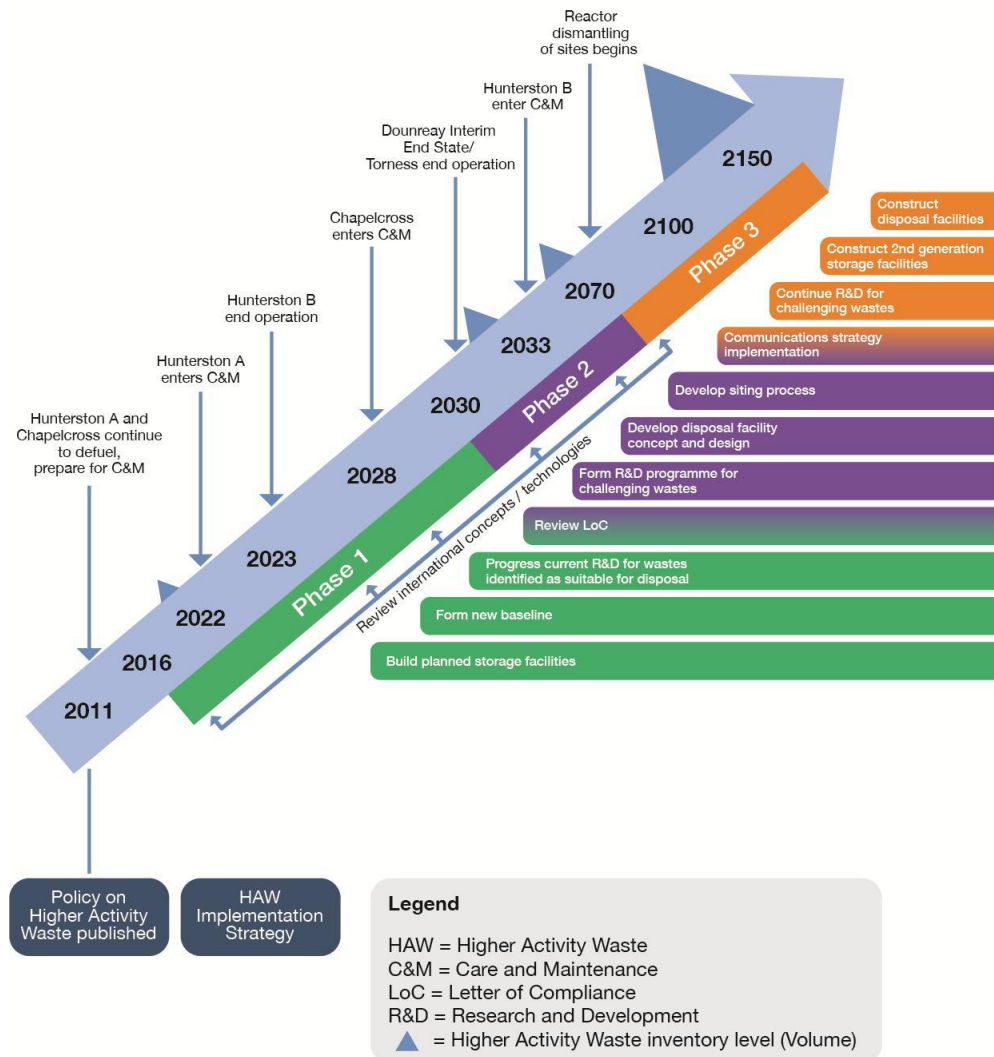


Fig.1 Scottish Government's illustrative HAW strategy timeline

2.59 CoRWM received an update from the Scottish Government Radioactive Waste Policy (RW) team in November 2016. This update covered progress on the HAW-IS, with publication and launch said to be imminent. Issues around devolution and the potential role for RWM in Scotland, the continuing dialogue between Scottish Government and NDA, meetings with the Minister and Chair, the Programme for Government etc., were discussed before considering CoRWM's current work programme delivery and emerging plans for 2017-18.

2.60 A meeting between Scottish Ministers and the Chair of CoRWM was held in January 2017. Ministers spoke to the HAW-IS, and raised issues around radioactive waste handling in Scotland and the need for continuing advice and scrutiny of relevant issues in Scotland as well as wishing to keep abreast of relevant activities and developments in England and Wales. RWM's potential

involvement in delivering Near-Surface, Near-Site (NSNS) solutions in Scotland was touched on as was the adequacy of the LoC process for future proofing Scottish waste arisings and the potential future steps needed for a robust understanding of the inventory.

- 2.61 Subsequent meetings were arranged to learn more about the Scottish Nuclear Supply Chain (SNSC) project and the Chair also went on to meet the Chief Scientific Advisor and a member of her staff. Collaboration on relevant areas of analysis, scrutiny and advice was discussed and agreed.
- 2.62 In March 2017 CoRWM members met with key personnel from the Scottish Enterprise and Highlands and Islands Enterprise to learn more about the SNSC project. The project focuses on exploring market opportunities and encouraging and supporting Scottish firms and academics to be involved in development, delivery and diversification activities in support of the decommissioning market in the context of nuclear and wider waste management. Relevant aspects of nuclear decommissioning as well as oil and gas decommissioning in particular – with its legacy radioactivity - are seen as key economic areas for Scotland.
- 2.63 CoRWM went on to discuss with SG RW team members issues around its work programme, follow-up from the Ministerial meeting, next steps on the HAW-IS including progress on and scrutiny of the R&D dimensions. The latter will be subject to joint consideration with the Chief Scientific Advisor's office. RWM's role was discussed and the group also considered the merits of government representatives, possibly including ministers, visiting an appropriate storage site, in Sweden, for example, to gain a fuller understanding of the issues and experience available.
- 2.64 In March 2017, CoRWM members attended a workshop on the new Integrated Authorisation Framework for regulating radioactive substances, held in Edinburgh by SEPA and Scottish Government, with attendees from a diverse industry, academic, health sector, local government and other regulators spectrum. A consultation is underway and it was an opportunity to network as well as to hear of the simplification and integration objectives of the proposed legislation.
- 2.65 CoRWM continued to attend the six-monthly Scottish Nuclear Sites (SNS) Meetings, (held in September 2016 and March 2017). These facilitate the broader understanding and exchange on developments in Scotland, particularly around community engagement. They also provided an opportunity to showcase progress against decommissioning plans, in particular the technological innovations being promoted by each of the sites for example by Babcock etc. in respect of Rosyth Nuclear Submarine Decommissioning.

GDF Safety Case Activities

- 2.66 CoRWM has not been asked to review RWM's 2016 generic Disposal System Safety Case (gDSSC) but the Committee has stayed abreast of RWM's overall safety case development. Particular attention has been paid to the development of the public-facing safety related documents for the three geological settings recommended in last year's annual report.
- 2.67 CoRWM met with RWM to discuss the ongoing safety case development for a GDF in September 2016, November 2016 and February 2017. In addition, CoRWM was present for RWM's safety related documentation presentations to RWM's Technical Advisory Panel (TAP).
- 2.68 CoRWM notes that RWM has now completed a first draft 2016 gDSSC. Although CoRWM is not carrying out a detailed review of the gDSSC it did express some concern about the structure of the documentation. CoRWM understands that RWM has contracted a consultant to produce an analysis of alternative structures for its next gDSSC in response to CoRWM concerns.
- 2.69 In its 2015-16 Annual report CoRWM recognised the limitations of the gDSSC approach for communicating information about the design and safety of a GDF located in each of the three principal rock formations in the UK, namely: hard rock, clay and salt and made the following recommendation:
- RWM should produce illustrative designs for each of the three rock types with descriptions of the associated safety characteristics.*
- 2.70 In recommending these public-facing documents, CoRWM's goal was to encourage RWM to produce documents that would be easily understood by the public and those wishing to engage in the siting process. The documents were intended to include a simple conceptual design for potential GDFs with descriptions of the key safety characteristics for each of the three major rock types.
- 2.71 In addition CoRWM expected that preparing such documents would enable RWM to put the National Geological Screening (NGS) outputs in the context of GDF safety. CoRWM's concern was that maps of individual geological attributes from the NGS could be misconstrued in the absence of a link to safety.
- 2.72 In response to CoRWM's recommendation, RWM has drafted three public-facing documents – one for each candidate rock type. CoRWM reviewed a

draft of the hard-rock version and provided RWM with a detailed set of comments.

- 2.73 CoRWM's view is that the draft document for hard-rock requires further work before it can meet the intent of CoRWM's 2015-16 Annual Report recommendation. It was a combination of a prospectus for a GDF and general information about a potential GDF in hard rock. The draft CoRWM received did not link the 2016 gDSSC results and safety context to the geological screening attributes and did not provide a simple description of the safety attributes for a hard rock GDF.
- 2.74 RWM has not yet shared the other public facing documents relating to clay and salt GDFs with CoRWM.
- 2.75 In 2016-17 CoRWM also scrutinised the RWM Letter of Compliance (LoC) process. CoRWM was particularly interested to see how RWM used the 2010 and 2016 gDSSC in its disposability assessments that support LoCs.
- 2.76 RWM presented the overall approach to disposability assessments to CoRWM with a focus on the relationship between the assessments and post-closure safety. CoRWM requested and was provided with a report which RWM said gave an example of the relationship between the disposability assessment and its gDSSC. The study supported the voidage⁷ requirements for individual waste canisters.
- 2.77 CoRWM did not find a direct link between post-closure safety and the recommended maximum permissible voidage. Instead, CoRWM found that the voidage requirement was driven by roof collapse considerations rather than the safety case.
- 2.78 CoRWM recognises the difficulty of relating disposability assessments with post-closure safety without a site and a site-specific safety case. However, CoRWM believes that the technical justification for LoCs should be based on all three rock types.

Recommendation 5: Applicability of the Letter of Compliance Process to all Three Rock Types

RWM should ensure that the Letter of Compliance process is applicable to GDFs in all three rock types.

⁷ Voidage, or void space, relates to macroscopic (open) voids, within or around packages for Engineered Barrier System of the GDF.

RWM Transition

2.79 Following concerns from previous years, in its Annual Report for 2015-16 CoRWM made the following recommendation:

DECC should initiate an independent external review of the RWM Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation.

2.80 During the year, the Committee has continued to monitor and scrutinise the on-going development of RWM's organisation, particularly with respect to its capability as a delivery organisation for a GDF.

2.81 At a meeting in September 2016, RWM outlined the then current situation. This covered RWM's plans to:

- apply for and hold regulatory permissions;
- fulfil the role of lead organisation in a developer led siting process; and
- fulfil a role as a waste management organisation, for example, with respect to Scottish policy.

2.82 As well as ongoing regulatory scrutiny of development as a prospective site licensee, the meeting also discussed the Organisational Readiness Review (ORR) which had been commissioned by the RWM Board:

"To provide an objective, independent assessment of RWM's readiness to undertake the next phase of the GDF programme, particularly in undertaking constructive engagement with a number of communities leading to selection of sites for borehole investigations".

2.83 The ORR was undertaken by an independent expert panel, utilising the principles of the UK Government's Project Initiation Route-map. The panel was supported by a route-map team from the Infrastructure and Projects Authority.

2.84 The panel produced an interim report in July 2016 and a final report in February 2017. The July 2016 report had several key preliminary findings. These highlighted concerns over RWM's ability to communicate effectively, especially with regard to the potential benefits of the GDF. This applied not only to communities but also in garnering support amongst decision makers, including ministers. The sponsorship and governance arrangements for the programme were questioned, particularly regarding a perceived lack of clarity

regarding the role of the client. There were also concerns regarding RWM's non-technical capabilities, its vision for an integrated programme focussed on delivery and its strategy for market engagement and procurement.

2.85 On 23 February 2017, a further meeting with RWM was held to discuss progress with the organisational development and the final report from the Readiness Review Panel. Overall, the tone of the final report is encouraging. Several recommendations made at the preliminary report stage are now considered by the Review Panel to have been implemented. This applies particularly to socio-political capability, development of an Advisory Council to replace the Technical Advisory Panel, changes in RWM board personnel, project and programme capabilities, and scenario planning.

2.86 However, CoRWM also notes several key concerns/future considerations highlighted in the Final Report. In summary these relate to:

- the delayed appointment of a strategic communications partner;
- the location of the Programme's SRO;
- the completion of an updated Programme Business Case;
- opportunities to learn from the governance practices of other programmes;
- composition of RWM Board to encompass more diverse experience;
- the drafting of a programme/plan in a clear single document; and
- the preparation for longer-term organisational planning, especially with regard to technical and training requirements.

2.87 In addition to these points, CoRWM noted with concern that the Panel stated that it had not seen a compelling argument for making a decision to proceed with the GDF programme in the shorter-term.

2.88 CoRWM has scrutinised this information along with information gained in other meetings with RWM representatives. The Committee's analysis of the information is given in the following paragraphs.

2.89 The recommendation in CoRWM's 2016 Annual Report for an independent external review of the RWM Business Model has not yet been met. The Readiness Review commissioned by RWM, although welcome, is much narrower, relating to the launch of the siting process.

2.90 CoRWM's 2016 recommendation envisaged an in-depth, evidenced, objective and robust assessment of the organisational needs of a delivery body throughout its planned life. The current Report only covers the short-term – up

to borehole investigations – and was not rigorously independent in that it relied to a large degree on ‘self-certification’ by RWM personnel.

- 2.91 The Report mentions the opportunities to learn from the governance practices of other programmes. CoRWM’s view is that a major, genuinely independent assessment, commissioned by BEIS and undertaken by a specialised entity would gather such experience and incorporate it into its findings along with a gap analysis and an implementation plan for any necessary changes.
- 2.92 The Report raises a concern regarding the composition of the RWM Board and proposes an additional non-executive director with more diverse experience. CoRWM would go further and questions the overall weight of NDA representation, the nature of leadership for the organisation and the need for executive and non-executive expertise in critical areas identified by the review and by CoRWM’s own assessments.
- 2.93 CoRWM questions the dependence of RWM on its parent body and is strongly of the opinion that the delivery organisation should be separate from its major customer.
- 2.94 The Committee also has concerns relating to the suggestion that consideration is being given to moving the SRO into the NDA. At this stage, CoRWM does not believe that the SRO should be located within the NDA because it represents poor governance and exposes the NDA to criticisms around conflicts of interest. At the moment CoRWM believes the delivery of a GDF is still a politically sensitive project and should remain under the control of Ministers. The Committee still feels that an in-depth assessment by a specialised entity would make some important recommendations in this area, based on experience and consideration of need and best practice.
- 2.95 CoRWM understands that RWM is to revisit its previous work in developing a life time plan (LTP) for the GDF project. This is welcomed because it is felt that there needs to be a clear description of the project throughout all stages to final closure. This should include how the organisation will look at various key points, along with competency and training needs, how they change with circumstances and how they will be provided.

Recommendation 6: Independent External Review of RWM Business Model

CoRWM’s 2016 recommendation has not been fully addressed and remains valid:

BEIS should initiate an independent external review of RWM's Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation.

2.96 CoRWM is continuing its task of scrutinising organisational changes at RWM. Further discussions with BEIS and RWM are planned. The areas that merit further analysis include:

- the Terms of Reference for the broader Advisory Council;
- the status of the Programme Business Case along with the Integrated Assurance and Approvals Plan;
- the status of the governance proposals, including location of the SRO;
- learnings from the governance practices of other programmes;
- the status of the Prospectus document; and
- the immediate plans for reviving the Life Time Plan (LTP) or Provisional Implementation Plan.

2.97 The issue of RWM's role in Scotland and the case for Near-Surface, Near-Site storage has not yet been clarified. CoRWM awaits clarification on this issue from RWM with interest.

Management of Radioactive Wastes, Spent Fuel and Nuclear Materials

2.98 CoRWM met with NDA in February 2017 to discuss current and planned arrangements for the management of radioactive wastes, spent fuel and nuclear materials. As in the 2015/16 period, 2016/7 saw few major developments in the current management practices. However, the NDA's strategy of HAW storage has been clarified and examined and the evolution of spent fuel storage, reprocessing and nuclear materials stocks and storage have also been examined.

2.99 CoRWM recognises the importance of completing the reprocessing of the remainder of the UK stocks of Magnox fuel and its implications for the GDF HAW inventory. CoRWM is also aware of the planned closure of THORP in 2018 and the cessation of oxide fuel reprocessing in the UK. CoRWM notes that the closure of THORP will reduce the options for the UK's long-term management of spent fuel, including geological disposal.

Interim Storage

- 2.100 Examination of NDA's work on HAW revealed that much useful work had been undertaken and a good start has been made towards the development of a single radioactive waste strategy. NDA had published 'NDA Higher Activity Waste Treatment Framework' in October 2015 leading via 'An Overview of NDA Higher Activity Waste' (November 2015) to the 'NDA Higher Activity Waste Strategy' of May 2016.
- 2.101 NDA is challenging exactly what waste is planned to be disposed of to a GDF, what wastes are actually LLW and which wastes could potentially be disposed of 'near surface'. Its drivers are now treatment and storage and application of NDA Waste Management Principles including the Waste Hierarchy, seeking where possible to minimise the creation of HAW. However, NDA noted that there are fewer optimisation opportunities available at the end of the lifecycle of waste arisings.
- 2.102 There are a number of strategic projects underway to look for opportunities to improve NDA's waste strategy by taking a more holistic approach. For example, why are treatment facilities all designed as a one-off? Could they be re-purposed for other wastes? Are there existing facilities that could be re-used?
- 2.103 A number of NDA-led Integrated Project Teams have been established to work together collaboratively to develop better solutions at a national rather than local level, and collaborative efforts also include the Nuclear Waste and Decommissioning Research Forum which has members from across the NDA estate and representatives of EDF, MoD, Capenhurst Nuclear Services and the Government Decontamination Service, with observers from the regulators and CoRWM.
- 2.104 Sellafield has a major part to play in specific aspects of this work including management of a Direct Research Portfolio Project for the NDA exploring a strategic approach to waste encapsulation.
- 2.105 NDA is now consolidating and mapping the various Site Licence Company (SLC) decision calendars to exploit opportunities within the Treatment Framework. The HAW Treatment Programme now contains a Consolidated Waste Treatment Schedule which is periodically updated to identify and exploit opportunities potentially including capabilities being shared across sites.
- 2.106 NDA also plans to oversee a consolidation of HAW storage, where the preferred option is to store waste from Dungeness A and Sizewell A stations in

the Bradwell ILW store and Oldbury waste being stored at Berkeley⁸, while in Scotland, Hunterston B waste will be stored on the A station site.

2.107 NDA is challenging whether material designated PCM is correctly designated, with growing evidence that the amount consigned as ILW could potentially be reduced.

2.108 The options for NDA's storage/disposal of graphite had been examined in 2014⁹. The current strategy views graphite in two broad categories: (1) current operational arisings such as graphite sleeves from fuel assemblies, and (2) arisings from reactor decommissioning activities (core graphite).

2.109 The 2014 strategy envisaged different processes for the three sites with operational arisings (Berkeley, Hunterston and Sellafield), while the management of decommissioning graphite waste by geological disposal provides a robust baseline strategy suitable for planning purposes for wastes arising in England and Wales.

2.110 An Integrated Project Team has been set up to investigate the potential of Near Surface Disposal option(s) for some of the HAW inventory that may not require the level of containment and isolation afforded by a GDF. Typically these wastes could include reactor decommissioning wastes, short-lived ILW and boundary wastes. As well as investigating the possible opportunity for England/Wales this work will also inform the Scottish HAW implementation policy.

2.111 CoRWM concludes that there is convincing evidence of increased 'cross-estate' influence of NDA in working to align the different site radioactive waste strategies, and the move of Sellafield Ltd to 'GOGO' status appeared to be helping this.

Spent Fuel – Magnox

2.112 NDA's strategy remains to reprocess all Magnox fuel, and the Magnox Operating Programme is also on track to complete the reprocessing of all but a few tonnes of fuel by closure at the end of 2019. The defueling programmes at Wylfa are not progressing as well as expected, but there is plenty of spent fuel buffer stored in the Fuel Handling Plant so reprocessing has not been affected.

⁸ See

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508790/Optimising_the_number_and_location_of_FED_treatment_facilities_and_ILW_storage_facilities_on_Magnox_Limited_sites_-_Final_PREFERRED_option_March_2015.pdf

⁹ Higher Activity Waste, Strategic Position Paper on the Management of Waste Graphite, NDA, January 2014

As part of work on the clean-up of legacy ponds at Sellafield, a dry storage technology has been developed. This technology could be used as a contingency option in the event there are any Magnox fuels left over at the end of reprocessing. For example, this approach could be used to store DFR material at Sellafield in the event that it cannot all be reprocessed.

Spent Fuel – Oxide

2.113 Examination of the oxide fuel reprocessing programme confirmed that THORP was on track to complete its planned reprocessing by 2018 and that the subsequent storage capacity of THORP Receipt and Storage will comfortably accommodate the additional fuel generated by AGR reactor life extensions. AGR fuel is to be stored in specially designed containers which isolate it from the pond water. NDA has, through Sellafield Ltd, undertaken studies to optimise storage conditions and has confidence in the longer-term storage of spent AGR fuel but even so is undertaking work into dry storage as a contingency.

LWR Spent Fuels

2.114 The cessation of THORP reprocessing at the end of 2018 is likely to leave around 20-25 te HM overseas fuel, including 16 te of spent MOX which is not in any case scheduled for reprocessing. This fuel will be stored with a view to eventual disposal in the UK GDF.

Plutonium

2.115 NDA reported that Government is considering NDA's advice regarding options for dealing with the UK's civil plutonium stocks. The NDA is continuing to take forward further work including investigating technical and commercial risk reduction, immobilisation options, and re-use options in line with government funding following the Spending Review settlement. A public position paper will be published by the NDA in due course.

2.116 The current expected inventory remains at around 140 te Pu, and over the past few years NDA has carried out successful negotiations to deal with European owned material with a series of 'ownership swaps', whereby material in the UK belonging (or owed) to European utilities was reallocated to UK ownership under suitable commercial arrangements. Some further reallocations are likely to close out the remaining European material and reach commercial settlements with customers.

2.117 The recent development in US work on a 'dilute and dispose' approach was discussed. This approach now looks as if it is likely to become the baseline option in the US. This approach consists of diluting some 40 te plutonium oxide with diluent material in drums to the extent that it can be accepted into the WIPP disposal facility. This is against the background of poor progress in, and weak commitment to, the USA MOX plant. NDA has considered the US 'dilute and dispose' approach and whether it would work in the UK, but the 'fit' with the UK situation is nowhere near as compelling as in the US. Problems include the space required in the GDF (the waste would take up to 300K drums), the heat output of the wastefrom, and criticality problems. However, a watching brief is being kept and some further work to better understand constraints, especially around the disposability of the product will be undertaken.

Uranium

2.118 NDA is engaged in implementing their Uranics Strategy, which includes the aim of consolidating all material on the Capenhurst and Sellafield sites. Discussions were held, inter alia, on recycling MDU, highly enriched uranium (HEU) exchanges, conditioning for disposal, and disposal of DNLEU.

2.119 A notable innovation has been the NDA-brokered shipment of the bulk of Dounreay's HEU inventory in various forms to the US. This has enabled the US to release a corresponding quantity of HEU for use in European test and isotope-producing reactors.

2.120 Work commissioned by NDA with RWM has shown that uranics are potentially disposable in a GDF in the forms (generally oxide) and packaging contemplated for very long term storage (though simple overpacking may be necessary for transport and emplacement). Some 'void filling' (typically cement or sand) may be necessary to increase the structural stability of the emplaced oxide.

2.121 In the short term the contribution of uranics to the radioactivity in a UK GDF would be small in comparison with that in the Higher Activity Wastes. However, its radioactivity will increase with time, as radioactive decay products accumulate and the extremely long 4.5 billion year half-life of ^{238}U will mean that at very long times (greater than a million years) it is the ^{238}U and its associated decay products that will dominate the residual radioactivity in a GDF. By this time the effect of the engineered barriers on predicted long-term performance of a GDF will become insignificant, and the calculated risk to people in the far future (hundreds of thousands or millions of years from now) will come to depend only on the host geology and the external assumptions (glaciations, etc.). Current dose predictions are comparable with the

Regulatory Risk Guidance Level, though these may be considerably less than exposures from naturally occurring uranium deposits. The significance of the predicted risks arising from the radiation exposure is being examined, together with the changes which would take place if an alternative approach such as Near Surface Disposal (NSD) was contemplated.

2.122 The NDA is also undertaking high level work to investigate whether Near Surface Disposal of uranic material is technically feasible, desirable or cost effective when compared with disposal in a GDF.

2.123 Another element of current study is the timescale and rate of conversion of uranium hexafluoride stocks into an oxide form that is more suitable for long – term storage or disposal, termed ‘deconversion’. This involves balancing the hazard potential reduction that is achieved by de-conversion, with the potential increased cost of alternative disposal or re-use options.

CoRWM Outreach Activities

CoRWM members have attended a number of events organised by others as listed in Table 1.

Table 1 Member Activities

Member	Activity
Laurence Williams	RUSI/PONI Session on Radioactive Waste Management, London, 2 June 2016 Institute of Physics, Keynote Speech on Geological Disposal of Radioactive Waste, Warrington, 13 July 2016 OECD-NEA National Advisory Bodies to Government on Radioactive Waste Management (ABG), Paris, 9 Dec 2016
Brian Clark	Launch of Andrew Blowers book, The Legacy of Nuclear Power, Royal Asiatic Society, 11 Jan 2017 Talk to Aberdeen Deeside Rotary Club on Nuclear Waste: Bury, Store or Ignore, 15 March 2017
Paul Davis	International Meeting on Deep Borehole Disposal of High-Level Radioactive Waste, University of Sheffield, 13-15 June 2016
Melissa Denecke	International Conference on Geological Repositories (ICGR) 2016: Continued Engagement and Safe Implementation, OECD Paris, 6-9 December 2016
Campbell Gemmell	International Conference on Geological Repositories (ICGR) 2016: Continued Engagement and Safe Implementation, OECD Paris, 6-9 December 2016
Richard Shaw	Meeting with Posiva and visit of surface facilities at ONKALO, 2 Feb 2017
Janet Wilson	Launch of Andrew Blowers book, The Legacy of Nuclear Power, Royal Asiatic Society, 11 Jan 2017

3 Forward Look

Implementing Geological Disposal

Working with Communities – Subgroup (1)

- 3.1 “Volunteerism” is at the heart of both the BEIS proposals for Implementing Geological Disposal and those of the Welsh Government. Consultation with the public on these proposals over the coming months is aimed at encouraging potential host communities to come forward to find out more and work in partnership to establish whether their location has the potential to host a GDF and enable a community to volunteer. CoRWM believes that success of both the consultations and the process going forward hinges upon effective communication. CoRWM will engage with BEIS, Welsh Government and the developer, RWM to closely scrutinise the engagement process, communication strategy, the material used to communicate and its delivery during the consultation period and beyond and offer constructive advice in a timely manner.
- 3.2 Post consultation, CoRWM will continue to scrutinise the effectiveness of both BEIS and RWM in working with communities and provide advice as the process goes forward.

National Geological Screening – Subgroup (2)

- 3.3 CoRWM plans to monitor the finalisation of the NGS TIRs and Narratives and pay close attention to their use in the launch of the siting programme

Development of GDF Safety Case – (Subgroup 2)

- 3.4 CoRWM plans to monitor the development of RWM’s public facing documents that provide indicative designs for a GDF and their associated safety characteristics and scrutinise their use in the launch of the GDF siting process.
- 3.5 CoRWM will need to develop a familiarity with RWM’s 2016 gDSSC to gain an understanding of what is known about each candidate rock type, RWM’s approach to safety assessment, and their manner of presenting safety arguments to the regulator and the public.
- 3.6 CoRWM will investigate the linkage between what is known now about each rock type (as presented in the 2016 gDSSC) and assumptions that RWM is

making with regard to the degree of site characterisation needed for a repository in any of the three rock types.

Planning and Regulatory Framework – Subgroup (3)

- 3.7 CoRWM will monitor progress of publication of the National Policy Statement for a GDF and will provide input to the process as required.
- 3.8 CoRWM will also monitor progress on the legislative changes needed to apply site licensing to a GDF and advise BEIS as appropriate on this.
- 3.9 CoRWM will also liaise with ONR and the environmental regulators to ensure that the regulatory regimes for a GDF are clearly formulated so as to provide a sound basis for public engagement and thus members of the public can have confidence and clear understanding of how the regulatory processes will operate and inter-relate.

RWM Organisational Development – Subgroup (4)

- 3.10 CoRWM will continue to scrutinise the further development of RWM into the planned status as an SLC. In particular, meetings are planned to explore further the development of long-term plans for the GDF through to closure and how the organisation might develop over this time. Additionally, RWM's plans for supply-chain management, capability development and training, succession planning and plans for assisting with the implementation of Scottish Government policy will be of particular focus during the coming year.

RWM Letter of Compliance Process – Subgroup (4)

- 3.11 RWM currently manages the 'LoC' process for the benefit of waste producers/packagers. This appears to fulfil a potential quasi-regulatory function. CoRWM will be interested to ascertain how this area of work will progress or evolve over the medium- to long-term and, particularly, how this task will be accomplished as the organisation transitions into a full-blown delivery organisation and as the impact of potential site geology becomes clearer.

Scottish Government Activities – Subgroup (5)

- 3.12 CoRWM will continue to provide advice to Scottish Government and scrutiny of relevant plans and activities. Progress on the approach to NSNS waste management will be of particular interest, including RWM's role. The value of visits to related facilities will be considered, as will the progress of relevant regulation.

Welsh Government Activities – Subgroup (6)

3.13 CoRWM will continue to provide scrutiny of, and comments on, the Welsh Government activity in taking forward its policy on the Management and Disposal of Higher Activity Radioactive Waste.

Management of Radioactive Wastes, Spent Fuel and Nuclear Materials – (Subgroup 7)

3.14 Activity in 2017/8 will consist largely of following the progress of the work reviewed in this report, particularly spent fuel inventories as reprocessing nears its end, and the rationalisation of waste sentencing, treatment and storage. A major increase in activity would be expected if the Government responds to the NDA's recommendations on plutonium disposition.

Withdrawal from Euratom – Subgroup (8)

3.15 CoRWM will develop advice on the implications of the UK withdrawal from the Euratom Treaty. This advice will be based upon evidence gained from

- analysis of EU legislation relating to the management of radioactive waste;
- mapping of EU legislation into UK law relating to the management of radioactive waste;
- analysis of UK implementation of the IAEA Conventions;
- discussion with UK regulators.

3.16 CoRWM will aim to identify requirements for additional legislation to cover any identified gaps.

CoRWM Outreach

3.17 CoRWM's outreach activities in 2017-18 will be limited owing to the need to focus its resources on scrutiny of the BEIS, Welsh Government and RWM's activities leading up to the launch of the Implementing Geological Disposal siting programme. Requests to engage in outreach activities will be dealt with on a case-by-case basis but the Committee will look at the possibility of visiting the Finnish GDF. It is hoped that planned improvements in the secretariat will enable the Committee to reinstate its bulletin and quarterly report communications.

4 Conclusions and Recommendations

- 4.1 2016-17 has been a busy and challenging year. The Committee has undergone significant change with nine new members just as the policy in such key areas as Working with Communities and the other four IGD workstreams were nearing completion. To help with the transition, CoRWM retained the services of Professors Warren and Clark to help support the new members.
- 4.2 CoRWM's activities during the year have reflected those outlined in the 2016-17 Work Programme. Work focused on the following areas:
- GDF siting issues arising from the Implementing Geological Disposal (IGD) White Paper, including National Geological Screening, Working with Communities, Access to Learned Societies National Policy Statement, Developer Led Communications, public and stakeholder engagement and the Regulatory Framework;
 - Welsh Government activities relating to the GDF siting process;
 - Scottish Government HAW activities;
 - RWM's GDF safety case development and LoC application to GDFs in all three geological settings namely; hard rock, clay and salt;
 - RWM's transition; and
 - NDA's strategy for the interim the treatment and storage of radioactive waste and other nuclear materials.
- 4.3 The main focus of CoRWM's work, however, was the scrutiny of the five IGD workstreams. The Committee recognises the challenges officials have faced in the delivery of these workstreams and understands the time it has taken to address them. The Committee is, in general, satisfied with the progress being made and with the quality of the work being done. However, there are areas where improvements can be made and the Committee makes the following recommendations for Ministers to consider:

Recommendation 1: National Geological Screening Outputs

Part 1 of RWM's National Geological Screening output should comprise the British Geological Survey's Technical Information Reports; Part 2 should show the relationship of this information to the safety of a GDF and Part 3 should contain information on areas that have been screened out from further consideration.

Recommendation 2: Communication Roles and Responsibilities

BEIS should ensure that the respective roles and responsibilities of BEIS and RWM relating to GDF communication activities are clearly defined and implemented.

Recommendation 3: Access to Independent Third Party Expert Views

The UK Government, the Welsh Government and the Northern Ireland Executive should ensure that any proposed mechanism to provide independent third party expert views to communities that are engaged in the GDF siting process is independent of RWM.

Recommendation 4: Role of the Regulators on the GDF Siting Process

The UK Government, the Welsh Government and the NI Executive should request the nuclear safety, security and environmental regulators be available during the GDF siting process to explain that the regulatory framework will control the design, construction, commissioning, operation and closure of a GDF, and their roles in the permissioning process.

Recommendation 5: Applicability of the Letter of Compliance Process to all Three Rock Types

RWM should ensure that the Letter of Compliance process is applicable to GDFs in all three rock types.

Recommendation 6: Independent External Review of RWM Business Model

CoRWM's 2016 recommendation has not been fully addressed and remains valid:

BEIS should initiate an independent external review of RWM's Business Model to assess its fitness for purpose in relation to the need for the UK to have an effective GDF delivery organisation.

References

- CoRWM doc 3275 (2016) CoRWM Work Programme 2016-19
- CoRWM doc 3281 (2016) Minutes of CoRWM's Plenary Meeting April 2016
- CoRWM doc 3313 (2016) Minutes of CoRWM's Plenary Meeting September 2016

Annex A: CoRWM Expenditure 2016-17

Table 2 shows CoRWM's budget out-turn for the year, broken down by main spending areas. The budget was initially set at £250,000 and an additional £70,000 was allocated for recruitment, bringing the total budget to £320,000. The recruitment line came in under budget and the funds were transferred to cover CoRWM's work in other areas, as shown in the table below. The slight overspend was agreed by BEIS.

Table 2 CoRWM's budget out-turn 2016/17

Budget Items	Budget (£k)	Out-turn (£k)
Members' Fees ¹	250	202
Members' Expenses ²		51
Meetings and Visits ³		38
Website		0
Technical Support		0
Recruitment ⁴	70	32
Total	320	323

¹ Members' fees include Employer National Insurance Contributions.

² Members' expenses include transport costs and incidental expenses when travelling to meetings, visits or other venues.

³ Meetings and visits include venue and members' accommodation costs for Plenary Meeting, visits and other meetings.

⁴ Budget allocated to cover costs of recruiting nine new committee members in July 2016.

CoRWM is not required to report the fees that individual members received, but it publishes this information in the interests of transparency. These are shown in Table 3.

The standard fees are those paid at the rates specified in Members' terms of appointment. These state that the Chair can claim £450 a day for up to 78 days per year, the Deputy Chair can claim £380 for up to 52 days per year and Members can each claim £300 a day for up to 52 days in a year.

Table 3 Fees Paid to CoRWM Members

Name	Standard Fees (£k)
Laurence Williams (Chair)	34.1
Gregg Butler	15.4
Brian Clark	13.0
Paul Davis	15.7
Melissa Denecke	5.2
Campbell Gemmell	13.8
Andy Hall	6.3
Simon Harley	9.5
Joanne Hill	6.0
Francis Livens	4.9
Stephen Newson	10.2
Helen Peters	7.3
Simon Redfern	5.6
John Rennilson	4.0
Richard Shaw	2.8
Stephen Tromans	2.0
Andrew Walters	6.4
Lynda Warren	19.5
Julia West	7.0
Janet Wilson	12.9
Total	201.6

Annex B CoRWM Membership

Professor Laurence Williams FREng - Chair



Laurence is an Emeritus Professor of Nuclear Safety and Regulation. He is a Senior Research Fellow at Imperial College London; Visiting Senior Fellow at the National Nuclear Laboratory; Chair of the Defence Nuclear Safety Committee; Chair of the High Level Panel to Review the 2007-13 Euratom FP7 Nuclear Fission and Fusion Research programme; Member of the Nuclear Innovation and Research Board; UK Member of the High Scientific Council of the European Nuclear Society; Chair of the Nuclear Institute's Editorial Committee for Nuclear Future; Member of the European Bank for Reconstruction and Development's International Advisory Group on Chernobyl. Laurence has been a Visiting Professor at Kings College London. Prior to entering academia Laurence was the Chief Engineer and Director for Nuclear Safety, Security and Environment at the Nuclear Decommissioning Authority; Her Majesty's Chief Inspector of Nuclear Installations; Director for Nuclear Safety and a member of the Board of the Health and Safety Executive; Chairman of the IAEA Commission on Safety Standards, where he was responsible for overseeing the development of international standards in the areas of nuclear safety, radiation protection, radioactive waste management and the transport of nuclear materials. Laurence is an international authority on nuclear safety and security regulation. He is a Fellow of the Royal Academy of Engineering, a Fellow of the Institution of Mechanical Engineering and a Fellow of the Nuclear Institute.

Current term of office ends: **October 2017**

Professor Francis Livens – Deputy Chair until 31 May 2016



Francis is the Director of the Dalton Institute at the University of Manchester. He has held a radiochemistry position at the University of Manchester since 1991. He worked for over 25 years in environmental radioactivity and actinide chemistry, starting his career with the Natural Environment Research Council, where he was

involved in the response to the Chernobyl accident. At the University of Manchester, he has worked in many aspects of nuclear fuel cycle research, including effluent treatment, waste immobilisation and actinide chemistry. He was the founding director of the Centre for Radiochemistry Research, established in Manchester in 1999 and is now Director of the University's Dalton Nuclear Institute and Director of the EPSRC-funded, Next Generation Nuclear Doctoral Training Centre. He has acted as an advisor to the nuclear industry both in the UK and overseas.

Term of office ended: **31 May 2016**

Professor Lynda Warren – Deputy Chair 1 June to 25 November 2016



Lynda is Emeritus Professor of Environmental Law at Aberystwyth University and Honorary Professor at Bangor University. She was a member of the Board of Natural Resources Wales and Defra's Science Advisory Council. She was a member of the Royal Commission on Environmental Pollution until its closure in March 2011. She has postgraduate degrees in marine biology and law and has pursued an academic career first in biology and latterly in environmental law. She has over 100 academic publications, including a number on radioactive waste management law and policy. Lynda has over 15 years' experience of radioactive waste management policy. She has been a member of CoRWM since 2003 and, before that, was a member of the Radioactive Waste Management Advisory Committee, chairing its working group on Dounreay. She was on the Board of British Geological Survey until the Board was disbanded in April 2011 and is an associate of Integrated Decision Making Ltd, a consultancy engaged in environmental policy advisory work, mainly in the nuclear sector.

Term of office ended: **25 November 2016**

Professor Campbell Gemmell - Deputy Chair



Campbell is current CoRWM Deputy Chairman. He is a Partner in Canopus Scotland Consulting, Professor of Environment Policy, Regulation and Governance at the University of Glasgow, Honorary Professor in the Faculty of Natural Sciences at the University of Stirling and an Adjunct Professor in the Future Industries Institute at UniSA, Adelaide. Campbell has collaborated with the CRC CARE at UniSA, now at University of Newcastle, NSW. He is former CEO of the South Australian EPA (2012-14) and was CEO of SEPA 2003-12 and SEPA Strategy Director 2001-3. Campbell is a qualified mediator. Campbell also chaired the South Australian State Radiation Protection Committee and was a member and Chair of the Dounreay Particles Advisory Group 2001-11. He was an Independent Advisor to Scottish Government on Underground Coal Gasification October 2015-September 2016 producing a Report to Ministers.

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

Professor Gregg Butler



Gregg is Co-Director of Integrated Decision Management Ltd, Head of Strategic Assessment for the Dalton Nuclear Institute at the University of Manchester. He has a BSc and PhD in metallurgy from Swansea University, and over 50 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: **30 November 2018**

Professor Brian D Clark



Brian is Professor of Environmental Management and Planning at Aberdeen University. He was a Board Member of the Scottish Environment Protection Agency (SEPA) and Chairman of the North Region Board and the Planning & Finance Committee of SEPA from 2000 to 2008. He has served on CoRWM since 2003. With forty years' experience, he is a specialist in environmental impact assessment (EIA), strategic environmental assessment (SEA), urban and rural planning and public and stakeholder engagement (PSE). He was honoured in 1987 by being made a founder member of UNEP's Global 500 Award. He is a governor of the James Hutton Institute, a member of the Scottish Government Local Boundary Commission from 2007-2013 and a founder member of the Institute of Environmental Assessment (IEA), now the Institute of Environmental Management and Assessment (IEMA).

Term of office ended: **31 May 2016**

Paul Davis



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**

Melissa Denecke



Melissa is Scientific Director of the Dalton Nuclear Institute at The University of Manchester and holds a Chair in the University's School of Chemistry. Previously she was department head for "Actinide Speciation", Institute for Nuclear Waste Disposal, Karlsruhe Institute of Technology, Germany, following positions held at the School of Engineering, Offenburg, Forschungszentrum Rossendorf e.V. (FZR), and Universität Hamburg. She has over two decades experience in nuclear fuel cycle R&D, notably in disposal of radioactive waste and legacy clean-up. She is an internationally recognised expert in application of state-of-the-art techniques for radionuclide characterisation on a molecular scale and champion for Materials for Nuclear Energy of the Henry Royce Institute. Her research interests focus on actinide separations, immobilisation processes at interfaces, numerous aspects of radioactive waste disposal and assessment of legacies, nuclear fuels and combining spectroscopic speciation with modelling. Melissa is also active in a number of national and international management and advisory roles, presently including Executive Board Member of Women in Nuclear Global and Board of Governors, Fedoruk Canadian Centre for Nuclear Innovation.

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

Professor Andy Hall



Andy 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, 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**

Professor Simon Harley



Simon is Professor of Lower Crustal Processes in the School of Geosciences at the University of Edinburgh. An international expert on the evolution of continental crust, his research integrates geological mapping with experimental and microanalytical studies of the stabilities of minerals and their behaviour at high temperatures and pressures. He has conducted geological mapping projects in diverse and complex

basement areas in Australia, India, Norway, Greenland, Scotland and Antarctica. Professor Harley is a Fellow of the Royal Society of Edinburgh. In 2002 was awarded the Imperial Polar Medal in recognition of his contributions to Antarctic Earth Science, and in 2014 the Schlumberger Medal of the Mineralogical Society in recognition of his contributions to mineralogy and petrology related to the deep continental crust.

Term of office ended: **31 May 2016**

Dr Joanne Hill



Joanne 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 Technical Director at Hydrock NMCL. 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



Stephen 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 tunnelling 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**

Helen Peters



Helen is a Legal Director at Pinsent Masons LLP. She is a solicitor specialising in all aspects of UK, EU and international environmental law and policy with significant experience in nuclear regulation and waste management. Helen is recognised as a leading UK environmental lawyer by Chambers Legal Directory and Legal 500. She is a member of the WNA Licensing and Permitting Task Force. She is also an active member of the UK Environmental Law Association. Helen has been engaged in many of the leading nuclear transactions in the UK in recent years and advises owners, operators, contractors and public bodies on environmental and nuclear regulatory matters.

Term of office ended: **25 November 2016**

Professor Simon Redfern



Simon 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 2020**

John Rennilson



John is a Chartered Town Planner and a Chartered Surveyor with over 37 years' experience in local government. He served as County Planning Officer of North Yorkshire County Council (1984-1996) and as Director of Planning & Development for Highland Council (1996-2008). His career has involved balancing development needs and environmental issues. Public involvement has been at the heart of all development considerations from the local to the strategic level. He has had considerable experience of the energy industry, including development of the Selby Coalfield, coal-fired electricity generation at Drax and Eggborough, and decommissioning Dounreay, as well as renewable electricity generation and transmission issues across the Highlands.

Term of office ended: **31 May 2016**

Dr Richard Shaw



Richard is an exploration and mining geologist (CGeol; EurGeol) 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



Stephen is a barrister practising at 39 Essex Chambers, London. He was Joint Head of Chambers from 2011-2015. He 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 2020**

Andrew Walters



Andrew 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**

Professor Julia West



Julia is Principal of West Consult having spent most of her career at the British Geological Survey (BGS). She is also an Honorary Research Associate at BGS and 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**

Dr Janet Wilson



Janet 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 CoRWM's Terms of Reference

Purpose

1. The purpose of the Committee on Radioactive Waste Management (CoRWM) is to provide independent advice, based on informed scrutiny of the available evidence, to UK Government and Devolved Administration Ministers (hereafter called 'sponsor Ministers') on the long-term management of radioactive waste, arising from civil and where relevant defence nuclear programmes, including storage and disposal.
2. CoRWM will provide strategic oversight of radioactive waste management in the UK, in such a way that does not duplicate the role already fulfilled by the statutory independent safety, security and environmental regulators.

Objectives

3. The primary objectives of CoRWM are to:
 - a) provide independent evidence based advice to sponsor Ministers on the Government's and Nuclear Decommissioning Authority's (NDA) and Radioactive Waste Management Ltd's (RWM) proposals, plans and programmes to deliver geological disposal (excluding Scotland), together with robust interim storage, for the UK's higher activity wastes as set out in the work programme agreed annually between CoRWM and sponsor Ministers; and
 - b) provide independent, evidence based advice on other radioactive waste management issues as requested by sponsor Ministers, including advice requested by Scottish Government in relation to its policy for higher activity radioactive waste.

In fulfilling its remit to provide independent and evidence based advice, CoRWM is expected to maintain an independent overview of issues relevant to the delivery of government's radioactive waste management programmes. It should bring to the attention of sponsor Ministers issues that it considers to be either: a) positive and worthy of note or b) concerns that, in the Committee's opinion need to be addressed.

Responsibilities

4. CoRWM will have a collective responsibility for:
 - recognising the policy framework within which it will operate, including the roles and responsibilities of Government, the NDA, RWM and the various statutory independent regulators in relation to CoRWM's own advisory role;
 - delivering its evidence-based advice to sponsor Ministers in accordance with agreed work programmes. It will be for sponsor Ministers, with appropriate reference to their respective Parliaments and Assemblies, to take decisions on the evidence based advice they receive and to give directions to the NDA/RWM as necessary on any subsequent changes that they deem to be required in the

delivery of radioactive waste management programmes;

- delivering the work programme within the agreed budget, although the Chair may request sponsor Ministers for an adjustment to this budget should this be considered necessary; and
- submitting an annual written report to sponsor Ministers, by 30 June of each year. The report will include CoRWM's progress with the agreed work programme, advice deriving from it and costs incurred. It will be made available in the libraries of the UK and Scottish Parliaments, the National Assembly for Wales and the Northern Ireland Assembly.

5. The Chair, supported by one or more CoRWM members when appropriate, will generally meet every two months with sponsor officials to report progress on the work programme and to discuss advice being provided at official level.

6. The Chair will meet sponsor Ministers on appointment, and then at least annually along with other members as appropriate. The Chair may also be required to present the position of CoRWM to Parliamentary or Assembly committees and representatives as appropriate.

Deliverables

7. CoRWM's deliverables will be set out each year in a proposed three-year rolling work programme.

8. The work programme will be submitted to sponsor Ministers by 31 March each year for discussion and agreement. Any in-year changes will be the subject of agreement by CoRWM and sponsor Ministers.

9. The work programme will include details of specific areas of work, reports which the Committee intends to produce, the proposed role of sub-groups and any other activities or events, including proposals for stakeholder engagement.

10. In delivering its annual work programme, and where there is a common interest, the Committee should liaise as appropriate with regulators and any other relevant bodies that advise Government and the regulators.

11. With the agreement of CoRWM's sponsor Ministers, other parts of Government, the NDA/RWM and the regulators may request independent advice from CoRWM. Relevant Parliamentary / Assembly Committees may also propose work to sponsoring Ministers, for consideration in the work programme. Any additional work would need to be funded by the requesting party.

Membership

12. The Committee is jointly appointed by sponsor Ministers and appointments will be made following the Code of Practice for Ministerial Appointments to Public Office published by the Commissioner for Public Appointments.

13. Appointments will usually be for four years and sponsor Ministers retain the right to terminate appointments at any time in light of individual members' performance, changes in CoRWM's work requirements, or completion of the work required of CoRWM.

14. CoRWM shall consist of a Chair and up to eleven members, one of whom will be appointed by sponsor Ministers as Deputy Chair on the recommendation of the Chair. Members will not be mandated representatives of organisational or sectoral interests.

15. The skills and expertise which will need to be available to the Committee will vary depending on the programme of work. Sponsor Ministers may review the membership of the Committee, and the skills and expertise required.

16. CoRWM is set up by, and answerable to sponsor Ministers and is funded by the taxpayer. It must therefore comply with the Cabinet Office guide for Departments <https://www.gov.uk/government/publications/public-bodies-information-and-guidance>

17. These and other relevant procedural requirements will be set out in CoRWM's Code of Practice which members will agree to, prior to appointment.

Sub-groups

18. Members of CoRWM itself may not have all the skills and expertise necessary to advise Government. The Committee will need to decide how best to secure access to other appropriate sources of expert input during the course of its work. It will have the option of setting up expert sub-groups containing both CoRWM members and other appropriate co-opted persons. The engagement of consultants will be dependent on sufficient funds being available to CoRWM and the necessary business cases being approved by sponsors as appropriate and, if required, Cabinet Office.

19. A member of CoRWM will chair any sub-group of this nature and ensure its effective operation, as well as provide a clear line of responsibility and accountability to the main Committee. It will be for the main Committee to assess and decide upon the advice it receives from such sub-groups. CoRWM may also utilise other appropriate means of securing expert input, such as sponsored meetings and seminars. The Chair will ensure that sub-group work and all other activities are closely integrated.

Engagement and transparency

20. CoRWM shall undertake its work in an open and consultative manner in order to secure the confidence of stakeholders in the advice it provides. It will engage with stakeholders and it will publish advice (and the underpinning evidence) in a way that is

meaningful to the non-expert. It will comply, as will sponsoring departments, with *'The Government Chief Scientific Advisor's guidelines on the Use of Scientific and Engineering Advice in Policy Making²³'*, as well as other relevant Government advice and guidelines. Government will respond to all substantive advice. Published advice and reports will be made available in respective Parliaments and Assemblies, as will any Government response.

21. To secure stakeholder confidence in its activities and advice, CoRWM's work will be characterised by:

- a published reporting and transparency policy;
- relevant stakeholder engagement as required;
- clear communications including the use of plain language, publishing its advice (and the underpinning evidence) in a way that is meaningful to the non-expert;
- making information accessible through its website;
- encouraging people to ask questions or make their views known and considering their concerns;
- providing opportunities for people to challenge information, for example by making clear the sources of information and points of view on which the Committee's advice is based.

Review

22. CoRWM will be subject to Triennial Review in accordance with Cabinet Office requirements and under a timetable agreed between DECC and the Cabinet Office.

Annex D Meetings held during 2016-17

Date	Meeting	Attendance Capacity
12 April 2016	Geological Disposal Programme Board	Observer
24/25 May 2016	RWM TAP meeting	Observer
25 May 2016	CoRWM & DECC meeting	Participant
28 May 2016	CoRWM & Welsh Government meeting	Participant
21/22 June 2016	CoRWM plenary meeting	Participant
7 July 2016	CoRWM & DECC meeting	Participant
17 August 2016	CoRWM & BEIS meeting	Participant
22 August 2016	CoRWM & RWM meeting	Participant
13/14 September 2016	CoRWM plenary meeting	Participant
15 September 2016	CoRWM & RWM meeting	Participant
16 September 2016	Geological Disposal Programme Board	Observer
26 September 2016	CoRWM, ONR and EA meeting	Participant
29 September 2016	Scottish Nuclear Sites Group meeting	Participant
5 October 2016	CoRWM & BEIS meeting	Participant
10/11 October 2016	CoRWM plenary meeting	Participant
13/14 October 2016	CoRWM & RWM meeting	Participant
17/18 October 2016	RWM TAP meeting	Observer
20 October 2016	Geological Disposal Programme Board	Observer
4 November 2016	CoRWM & Scottish Government meeting	Participant
11 November 2016	CoRWM & RWM meeting	Participant
22 November 2016	NDARB	Observer
24 November 2016	BEIS Partners Meeting	Participant
28 November 2016	CoRWM plenary meeting	Participant
20 December 2016	Geological Disposal Strategic Coordination Group (GDSCG)	Observer
6 January 2017	Welsh Government Stakeholder Workshop	Observer
10 January 2017	CoRWM & BEIS meeting	Participant
11/12 January 2017	CoRWM plenary meeting	Participant
18 January 2017	CoRWM Chair and Scottish Ministers meeting	Participant
18 January 2017	Meeting with Scottish Government Chief Scientific Advisor	Participant
24 January 2017	Workshop for the Environment Agency Consultation on the assessment of Hitachi-GE's UK ABWR nuclear power station	Participant

Date	Meeting	Attendance Capacity
1 February 2017	CoRWM, Welsh Government and Natural Resources Wales meeting	Participant
2 February 2017	Meeting with Scottish Enterprise	Participant
9 February 2017	Geological Disposal Programme Board	Observer
22/23 February 2017	RWM TAP meeting	Observer
24 February 2017	CoRWM & RWM meeting	Participant
27 February 2017	Geological Disposal Strategic Coordination Group (GDSCG)	Observer
28 February 2017	RWM Board	Observer
5 March 2017	CoRWM & Scottish Government meeting	Participant
7 March 2017	SEPA/SG Workshop on Integrated Authorisation Framework	Participant
21/22 March 2017	CoRWM plenary meeting	Participant
23 March 2017	Geological Disposal Strategic Coordination Group (GDSCG)	Observer
23 March 2017	Scottish Nuclear Sites Group	Participant

Annex E List of Acronyms

AGR	Advanced gas cooled reactor (A type of reactor with a graphite core, and Uranium oxide fuel in steel cladding with a graphite sleeve).
AoS	Appraisal of Sustainability
BEIS	Department for Business, Energy & Industrial Strategy
BIS	Department for Business, Innovation and Skills
CoRWM	Committee on Radioactive Waste Management
CRWG	Community Representation Working Group
DECC	Department of Energy and Climate Change
DFR	Dounreay Fast Reactor
DNLEU	Depleted, Natural and Low Enriched Uranium
EA	Environment Agency
EIA	Environmental Impact Assessment
GDF	Geological disposal facility
gDSSC	generic Disposal System Safety Case
HAW	Higher Activity Waste
HAW-IS	HAW Implementation Strategy
HEU	Highly Enriched Uranium
HM	Heavy metals
HRA	Habitats Regulations Assessment
IAEA	International Atomic Energy Agency
IEA	Institute of Environmental Assessment
IEMA	Institute of Environmental Management and Assessment
IGD	Implementing Geological Disposal
ILW	Intermediate level waste
INLA	International Nuclear Law Association
JAEA	Japan Atomic Energy Agency
LoC	Letter of Compliance (previously Letter of Comfort)
LLW	Low Level Waste
LTP	Life Time Plan
LWR	Light Water Reactor
MDU	Magnox Depleted Uranium
MOD	Ministry of Defence
MOX	Mixed Oxide Fuel
NDA	Nuclear Decommissioning Authority
NDARB	NDA Research Board
NEA	Nuclear Energy Agency of OECD
NERC	Natural Environment Research Council
NGS	National Geological Screening
NIEA	Northern Ireland Environment Agency
NPS	National Policy Statement
NSD	Near Surface Disposal
NSNS	Near-Site Near-Surface Storage policy in Scotland

NRW	Natural Resources Wales
OECD	Organisation for Economic Co-operation and Development
ONR	Office for Nuclear Regulation (the regulator of safety, security and safeguards at nuclear facilities and transport of radioactive materials)
ORR	Organisational Readiness Review
PCM	Plutonium Contaminated Material
PSE	Public and stakeholder engagement
Pu	Plutonium
RATE	Radioactivity and the Environment (a NERC research programme)
R&D	Research and development
RRP	Readiness Review Panel
RW	Radioactive Waste
RWM	Radioactive Waste Management Limited, a wholly owned subsidiary of the NDA charged with delivering Geological Disposal, created on 1 April 2014.
SE	Scottish Enterprise
SEPA	Scottish Environment Protection Agency
SG	Scottish Government
SKB	Svensk Kärnbränslehantering AB (Swedish Nuclear Fuel and Waste <i>Management Company</i>)
SLC	Site licence company (a company that runs an NDA site, under contract to the NDA, and holds the nuclear site licence)
SNS	Scottish Nuclear Sites meetings, hosted and chaired by Scottish Government
SNSC	Scottish Nuclear Supply Chain
SRO	Senior Responsible Owner or Officer
TAP	Technical Advisory Panel
THORP	Thermal Oxide Reprocessing Plant
U	Uranium
WIPP	Waste Isolation Pilot Project
WNA	World Nuclear Association