National Assembly for Wales
Petitions Committee

Summary of evidence

Petition P-05-785 Suspend Marine Licence 12/45/ML to dump radioactive marine sediments from the Hinkley Point nuclear site into Wales coastal waters off Cardiff

May 2018

Introduction

Since November 2017 the Petitions Committee has given detailed consideration to a petition concerning a marine licence for the disposal of material dredged from the seabed in the Severn Estuary, as part of the construction of Hinkley Point C nuclear power station. This report contains an overview of the Committee's consideration of the petition and a summary of the evidence the Committee has received.

1. The petition

1. Petition number P-05-785, Suspend Marine Licence 12/45/ML to dump radioactive marine sediments from the Hinkley Point nuclear site into Wales coastal waters off Cardiff, was submitted by Tim Deere-Jones. It collected 7,171 signatures and was first considered by the Petitions Committee on 27 November 2017.

Petition text:
We call on the National Assembly for Wales to urge the Welsh Government to direct Natural Resources Wales to suspend the licence it has granted to NNB Genco, which permits up to 300,000 tonnes of radioactively contaminated material, dredged from the seabed at the Hinkley Point Nuclear power station site, to be dumped into Welsh inshore waters.

We further request that the suspension of the licence is used to ensure that a full Environmental Impact Assessment, complete radiological analysis and core sampling are carried out under the auspices of Natural Resources Wales, and that a Public Inquiry, a full hearing of independent evidence and a Public Consultation take place before any dump of the Hinkley sediments is permitted.

Additional information:
Marine Licence 12/45/ML, granted by the Welsh Government, permits the disposal of up to 300,000 tonnes of radioactively contaminated marine sediment, dredged from the seabed at the Hinkley Point nuclear site, into the Cardiff Grounds marine dump site close to the South Wales coast. This will allow work to begin on the 2 new Hinkley C nuclear reactor pipelines.

The sediments to be dredged are adjacent to the waste pipes used for the discharges from Hinkley's 4 existing reactors. Analysis, commissioned by UK Government agencies, shows that the sediment is contaminated by radioactive waste discharged to sea over 50+ years of operations at the Hinkley site. Calculations derived from the official data indicate that the proposed dredge sediments may hold at least 7 billion Bqs of aggregated radioactivity, yet reports state that doses to humans would be very low.

Hinkley's radioactive discharges to sea contain over 50 radio-nuclides, but the analysis has only investigated 3 of them. Thus, the actual aggregated radioactivity content of the sediments will be much higher than indicated by the available analysis. The available evidence also implies that only surface samples (0 to 5cms deep) of the sediment have been analysed, despite the fact that core sample research from elsewhere in the Irish Sea demonstrates that, at depths below 5cms, radioactivity concentrations may be up to 5 times higher.

While sedimentary radioactive material is initially likely to disperse, studies prove that it later re-concentrates in coastal and estuarine mudflats and saltmarshes, and is also available for sea-to-land transfer during onshore winds and coastal flooding. We note the absence of research on the fate of such radioactivity in South Wales inshore waters. In this context we are concerned that the environmental and human health (dose) risks from the proposed disposal have not been adequately researched and that any conclusions based on the current incomplete data, are unreliable.

2. The petition gathered a significant level of support in a short amount of time. Whilst the marine licence(s)[1] in question had originally been submitted in 2012 and approved in 2014, the issue only came to public prominence during autumn 2017. The activity covered by the licence – disposal, in the Cardiff Grounds site off the coast of South Wales, of sediment and other material dredged from near Hinkley Point – is due to commence in summer 2018.

3. Therefore, the Petitions Committee has had only a very limited window in which to consider the issues raised by the petition. In the time available, the Committee has sought and received a significant amount of written evidence from parties involved in the licencing process, the Welsh Government and the petitioner. The Committee has held oral evidence sessions with the petitioner, EDF Energy, Natural Resources Wales (NRW) and the Centre for Environment, Fisheries and Aquaculture Science (Cefas).[2]

4. Given the aforementioned timescales, it has been necessary for us to present the evidence we have received with limited commentary and without producing substantive conclusions or recommendations. We have taken this approach in order that a Plenary debate on this evidence can take place in a timely manner.

2. Background

Marine Licence 12/45/ML

5. Marine licence 12/45/ML was issued on 11 July 2014 by NRW acting on behalf of the Licensing Authority (Welsh Ministers) to the licensee, NNB Genco, a wholly owned subsidiary of EDF Energy.

6. The licence is related to the disposal of sediment being dredged as part of the construction of a cooling water system for Hinkley Point C nuclear power station in Somerset, south-west England. EDF Energy is building two new nuclear reactors at the Hinkley Point C site, capable of generating a total of up to 3,260MW of electricity. The site is located beside the currently operational Hinkley Point B, and Hinkley Point A that is being decommissioned.[3]

7. EDF Energy explained the purpose behind the licence in a written briefing:

[1] Two separate applications were submitted due to the dredged material arising from two sites but one licence was issued.

[2] Full details, including correspondence received and transcripts of evidence sessions are available **online**.

[3] Further information: EDF Energy, **Hinkley Point C**

> "As part of the construction of Hinkley Point C, we will be dredging sediment from the seabed off the Hinkley Point C site ahead of the drilling of six vertical shafts for the cooling water system. The cooling water system is a significant piece of infrastructure, which involves tunnelling more than 3km out into the Bristol Channel.
>
> In order to do this, it is necessary to dredge the immediate area where we will be installing the vertical shafts. This process will take in the region of 3-6 months, and we will begin to dredge the area in summer 2018."[4]

8. The dredged material, estimated to be approximately 200,000m^3, will be placed into barges and transported to the Cardiff Grounds disposal site[5] to be deposited.

9. Section 9 of the licence sets out a number of project specific conditions. Several of these have been central to the consideration of this petition, including:

9.1 The Licence Holder must submit a proposal for a monitoring programme of the disposal site and immediate environs to Natural Resources Wales acting on behalf of the Licensing Authority for written approval at least **12 weeks** before any disposal operation. The scheme will include details of pre, during and post disposal operation surveys, and any actions to be taken as a consequence of the survey findings. The purpose of the scheme will be to enable the avoidance of significant build up of material and any consequent shallowing.

[...]

9.3 The Licence Holder must submit a proposal for a sediment sampling scheme of the source sites and immediate environs to Natural Resources Wales acting on behalf of the Licensing Authority for written approval at least 6 months before any disposal operation to occur after 4th March 2016. The scheme will include details of sampling grid, analyses suites (including any appropriate radiological assessment) and proposed format of a report determining the suitability of the material for disposal at site LU110 along with timescales for carrying out these actions.

9.4. The Licence holder must ensure the sediment sampling must be undertaken in line with the agreed scheme, as referenced in paragraph 9.3. Sampling scheme reports must be submitted to Natural Resources Wales acting on behalf of the Licensing Authority within the timescales agreed within the scheme.

[4] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

[5] The location of the Cardiff Grounds can be seen at: Welsh Government, **Marine Planning Portal**

9.5. The Licence Holder must ensure that no material is deposited after 4th March 2016 without written confirmation from NRW, acting on behalf of the Licensing Authority, that they are satisfied the material is suitable for deposit at site LU110.

Marine Licensing

10. The key legislation covering the marine licensing regime is contained within Part 4 of the Marine and Coastal Access Act 2009 (the Marine Act).[6] Under Section 66 of the Marine Act, licensable marine activities include:

- Depositing any substance or object, in the sea or on or under the sea bed, from:
  - Any vehicle, vessel, aircraft or marine structure;
  - Any container floating in the sea; or
  - Any structure on land constructed or adapted wholly or mainly for the purpose of depositing solids in the sea.
- Use a vehicle, vessel, aircraft, marine structure or floating container to remove any substance or object from the sea bed; and
- Carry out any form of dredging, whether or not involving the removal of any material from the sea or sea bed.

11. Welsh Ministers are the licensing authority for Welsh waters. The operation of marine licensing in the inshore region was delegated to Natural Resources Wales (NRW) in April 2013, via the Marine Licensing (Delegation of Functions) (Wales) Order 2013.[7] Prior to the creation of NRW, marine licensing was administered by the Welsh Government's Marine Consents Unit.

12. When determining an application, Section 69 of the Marine Act sets out that the licensing authority must have regard to:

- (1a) The need to protect the environment,
- (1b) The need to protect human health,
- (1c) The need to prevent interference with legitimate uses of the sea,

and such other matters the authority thinks relevant.

[6] ***Marine and Coastal Access Act 2009***

[7] **Marine Licensing (Delegation of Functions) (Wales) Order 2013**

13. With respect to 1c, the licensing authority may carry out an Environmental Impact Assessment under the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)[8] and Habitat Regulations Assessment under the Conservation of Habitats and Species Regulations 2010.[9] In the absence of a marine plan for Wales, a draft of which was recently the subject of a public consultation, regard must be given to the UK Marine Policy Statement.[10] Activities must also be compliant with, inter alia, the European Marine Strategy Framework Directive[11] and the European Water Framework Directive.[12]

The role of Welsh Ministers

14. Whilst marine licensing is the delegated responsibly of NRW, legislation does contain powers for Welsh Ministers.

15. In England, under the Marine Licensing (Delegation of Functions) (Amendment) Order 2015, a licensing application can be called-in by the Secretary of State.[13] Such a call-in (recovery) process does not exist within the Welsh Delegation Order.

16. Section 72 of the Marine Act provides a procedure for "varying, suspending or revoking" a licence. There are numerous grounds for suspension of a licence to include where there has been a change in circumstances relating to the environment or human health (3a), or because of an increase in scientific knowledge relating to either of those two matters (3b). Section 102 of the Marine Act allows the enforcement authority (Welsh Ministers) to issue a notice to stop activity, subject to satisfying a number of criteria.

17. Section 100 of the Marine Act gives a specific direction making power to Welsh Ministers as the licensing authority with regards to performance of delegated functions under the Act. Article 11 of the Natural Resources Body for Wales (Establishment) Order 2012 gives the Welsh Ministers a general power to direct NRW as to the exercise of its functions.[14]

[8] **Marine Works (Environmental Impact Assessment) Regulations 2007**

[9] **The Conservation of Habitats and Species Regulations 2010**

[10] **UK Marine Policy Statement.** UK Government, September 2011

[11] **Marine Strategy Framework Directive**

[12] **Water Framework Directive**

[13] **Marine Licensing (Delegation of Functions) (Amendment) Order 2015**

[14] **Natural Resources Body for Wales (Establishment) Order 2012**

3. Timeline of consideration by the Committee

18. The Committee considered the petition for the first time on 21 November 2017. A submission by the petitioner summarised the petition's aims:

> "The Campaign to re-assess the decision to permit the disposal of 300,000 tonnes of radioactively contaminated sediment at the Cardiff Grounds disposal site is concerned that the environmental and human health (dose) risks from the proposed disposal have not been adequately researched and that any conclusions based on the current incomplete data, are unreliable."[15]

19. The Committee also considered a response to the petition from the Cabinet Secretary for Environment and Rural Affairs, Lesley Griffiths AM. The Cabinet Secretary expressed her concern about the public perception of this issue and provided a written statement she had issued on 29 September. This noted that the purpose of the licence is not for the disposal of nuclear waste and provided detail about the background to marine licensing and this licence specifically.[16]

20. In her letter to the Petitions Committee, the Cabinet Secretary also stated that the conditions of the licence required sampling and testing of the material to be disposed of and that further approval was required from NRW before any disposal could take place. She emphasised that the material would only be disposed of if the results of that sampling meant that the material was considered safe and suitable for disposal.[17]

21. The Committee also considered a letter that had recently been sent by the Chair of the Climate Change, Environment and Rural Affairs (CCERA) Committee to NRW[18], following a presentation that Committee had received from EDF Energy. The letter asked a number of detailed questions of NRW and, as a result, the Petitions Committee agreed to await a copy of NRW's response. The Petitions Committee also agreed, in light of the significant degree of public concern expressed through the petition, to invite the petitioner to give oral evidence at the next available meeting.

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[15] **Petitioner to the Committee**, 13 November 2017 (PDF, 38KB)

[16] **Written Statement by the Cabinet Secretary for Environment and Rural Affairs**, 29 September 2017

[17] **Cabinet Secretary for Environment and Rural Affairs to the Committee**, 24 October 2017 (PDF, 505KB)

[18] **The Chair of the Climate Change, Environment and Rural Affairs Committee to Natural Resources Wales**, 13 November 2017 (PDF, 182KB)

22. The evidence session with the petitioner was held on 5 December 2017. At the same meeting the Committee took oral evidence from EDF Energy, having received a request for an opportunity to do so from the company.

23. The Committee took oral evidence from NRW and Cefas at a meeting on 9 January 2018. Following this, the Committee wrote to NRW on 12 January 2018 to make several recommendations and request additional information.

24. Subsequently the Committee considered further written submissions, including responses from NRW, at meetings held on 6 February and 17 April 2018, leading to the publication of this report.

25. The rest of this report summarises the evidence received by the Committee.

4. The evidence received by the Petitions Committee

4. 1. The material

26. The concerns behind the petition primarily centre upon the contents of the material to be dredged and disposed of. The petition was driven by concern that the sediment had not been tested sufficiently and a suggestion that it is:

> "[…] contaminated by radioactive waste discharged to sea over 50+ years of operations at the Hinkley site."[19]

27. Giving evidence to the Committee, EDF sought to refute this and other statements that had been made about the content of the sediment:

> "It has been referred to, inaccurately, as radioactive, nuclear and toxic waste, and that there may be risks to human health or the environment. The petition also claims that the testing is insufficient.
>
> I want to be completely clear today: all these claims are wrong, alarmist, and go against all internationally accepted scientific evidence. It is not radioactive and it poses no threat to human health or the environment. We know this because we have tested it independently three times using world-leading equipment to highly conservative standards. These standards are supported by Natural Resources Wales, Public Health Wales, the Environment Agency, the Centre for

[19] Petition text

> Environment, Fisheries and Aquaculture Science, the UK Government and the United Nations."
>
> The petition fundamentally challenges the expertise of all these organisations. It takes issue with internationally accepted scientific practice, applied by international organisations and leading research and academic institutions. I would urge the committee to look at the scientific facts and the rigorous testing and licensing process we've been through."[20]

28. Written evidence received from EDF stated that:

> "The sediment we and others are dredging in the Bristol Channel is typical of the sediment found anywhere in the Bristol Channel, and as such it is no different to the sediment already at the Cardiff Grounds. It is not classed as radioactive under UK law and poses no threat to human health or the environment."[21]

29. The company also stated that the levels of radioactivity found in the sediment are:

> "[…] predominantly naturally occurring (over 80%), with a small amount of artificial radioactivity, which will have originated from legacy discharges from hospitals, medical isotope manufacturing facilities (including those formerly based in Cardiff) and nuclear facilities. Whether the radioactivity is naturally occurring or artificial this has no impact on how it interacts with the human environment.
>
> […]
>
> Taking the naturally occurring and artificial radioactivity together, the levels are so low they pose no danger to human health or the environment."[22]

4. 2. Sampling and testing

30. Much of the discourse and debate during the Committee's consideration of the petition has related to the sampling, testing and analysis of the sediment.

[20] Record of Proceedings – **5 December 2017**, para. 137-8

[21] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

[22] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

31. Evidence the Committee has received from EDF, NRW and Cefas has detailed the sampling and testing regime followed in relation to the application and determination of the licence.[23] EDF described the process as following "a highly conservative, internationally recognised (International Atomic Energy Agency) assessment methodology" and provided details about this:

> "The methodology conservatively assumes a member of the public spends around four hours per day every day on the shore near the Cardiff Grounds and consumes 50 kg of fish and 15 kg of crustacean and molluscs every year, all sourced from near the Cardiff Grounds. Exposure to the radioactivity in the sediment is also considered from inhaling any sediment that may accumulate on the shore.
>
> [...]
>
> Taking account of the natural and artificial radioactivity together, the dose received would be equivalent to:
>
> - Eating 20 bananas each year (bananas contain potassium-40, a naturally occurring radionuclide)
> - 10,000 times less than an airline pilot's annual dose
> - 750 times less than the average dose received by a resident of Pembrokeshire (due to Radon)
>
> [...]
>
> This is an infinitesimally small level of exposure to radiation, far below the threshold requiring a more detailed assessment or even close to approaching a radiation dose that could impact human health or the environment."[24]

32. The petitioner has challenged the conclusions of the testing on a number of grounds, which are outlined in the following sections. Overall, this amounts to a contention that the testing has:

> "[...] failed to provide sufficient, coherent, conclusive and precise scientific data for the assessment of radiological impacts to the

[23] For example, on page 3 of the **Hinkley Point C Sediment Briefing** supplied by EDF Energy and expanded upon during oral evidence sessions with EDF, NRW and Cefas.

[24] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

> inhabitants and users / stakeholders of the south Wales inshore waters and coastal zone."[25]

The types of radiation tested for

33. One of the central concerns is the range and type of radioactivity that has been tested for. The petitioner has stated that the reported results of sampling analysis indicates that only a small range of radiation has been tested for:

> "[...] [a]cross the three surveys, only 3 of the 50+ Hinkley derived radionuclides known to have been discharged into the Bridgwater Bay sedimentary environment have been analysed for."[26]

34. NRW told the Committee that the 2013 report they had contracted Cefas to produce as part of the marine licence determination process covered a full range of gamma-emitting radionuclides:

> "Samples were collected and analysed by gamma-ray spectroscopy to determine the levels of gamma emitting radionuclides (both man-made and naturally occurring) and results were reported for Am-241, Co-60, Cs-137, K-40, Ra-226, Th-232, U-238. In addition to these, the Am-241 data was used to derive estimates for Pu-239,240, Pu-241 and Pb-210. The activities of these alpha-emitting radionuclides were included in the same assessment."[27]

35. EDF had informed the CCERA Committee that the technique used would detect all man-made radionuclides present, as well as those that are naturally occurring:

> "The analysis techniques used detect the presence of alpha, beta and gamma emitting radionuclides, rather than just testing for a few select radionuclides. Simply put, if a radionuclide is present it will be detected by the testing equipment."[28]

[25] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

[26] **Petitioner to the Committee**, 2 January 2018 (PDF, 407KB)

[27] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

[28] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

36. Cefas, who carried out the testing, also described the process[29] when the petitioner's point about testing only having been carried out on three radionuclides was put to them:

> "That's not correct. We've reported three or four. The gamma spectrometry analyses all of the gamma-emitting radionuclides, so things like iron-59, manganese-54—all of those—but they would be below the detection limit. There is no point in doing a dose coefficient of a less than value that then results in no dose, so we only specifically report those radionuclides that are radio-sensitive and likely to give a dose. We analyse all gamma-emitting radionuclides."[30]

37. Cefas emphasised that the "dose" calculation is a more important measure of risk from radioactivity than the presence of specific radionuclides themselves:

> "[…] in terms of the radiological significance, it's not the number of nuclides nor the activities, it's the impact of those in terms of risk, which we call 'dose'. We have to convert that concentration into a dose unit and this is all agreed internationally as to how we do this, using dose coefficients. When we do the assessment, we look at the most radiologically significant radionuclides that are going to give the most significant dose. So, the assessment in total is not on the radionuclides that are present, per se; it's on the effect of dose. That is the internationally agreed way of doing it."[31]

38. NRW also referred to the "dose" calculation and the fact that this had found that radiation was *de minimis* as crucial in the decision to award the licence:

> "The Cefas report concluded the total radiation doses to individual members of the public and (dredging) crew, and collective doses, were within de-minis criteria using assessment methodology developed by IAEA. The results of which were reviewed by NRW with support from the Environment Agency to support our decision to issue a marine licence. […]
>
> Our radioactive substances regulation specialist was also consulted on the 2013 radiological assessment. The specialist liaised with Environment Agency's lead regulator for Hinkley. Both agreed that the

[29] A full description of the process used was provided by Dr Kins Leonard of Cefas during an oral evidence session: Record of Proceedings – **9 January 2018**, paras. 325-330

[30] Record of Proceedings – **9 January 2018**, para. 333

[31] Record of Proceedings – **9 January 2018**, para. 196

> Cefas report was an adequate assessment of the radiological impacts and agreed with its conclusion."[32]

39. However, the application of the *de minimis* criteria in this context has been questioned. For example, Friends of the Earth, Barry and Vale have claimed that these criteria were developed by the IAEA for disposal at sea and that they are not suitable in the context of an estuary.[33]

40. Some of the initial dispute in relation to the safety (or not) of the material could therefore have been caused by the way in which the results had been reported. The three radionuclides reported were those that returned results above a minimum threshold. This approach would also have reported other radionuclides had they been present in significant enough values:

> "[...] the data that give the raw results, include all of the gamma-emitting radionuclides, which are analysed and determined. Obviously, they're all less-than values, which are not in the report."[34]

41. In response to this misunderstanding, the Committee put it to NRW and Cefas that there may be value in ensuring that this was clear in future reporting. Cefas responded:

> "We can do that in the future, or we can make the comment that a list of other nuclides are below detection limits. I accept the point."[35]

42. The petitioner informed the Committee in December 2017 that his campaign had requested a copy of the results of the gamma spectrometry data produced by Cefas to seek to verify them. The petitioner informed the Committee that he had received this information during January 2018.[36] In a later update he stated that software compatibility problems had meant that the campaign had been unable to fully interrogate the data.[37]

43. However, additionally, the petitioner has suggested again that not all radionuclides released from the existing Hinkley Point nuclear power stations emit Gamma radiation, and would therefore not all be identified by the use of Gamma ray spectrometry:

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[32] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

[33] **Friends of the Earth, Barry & Vale to the Committee**, 16 April 2018 (PDF, 630KB)

[34] Record of Proceedings – **9 January 2018**, para. 211

[35] Record of Proceedings – **9 January 2018**, para. 335

[36] **Petitioner to the Committee**, 31 January 2018 (PDF, 29KB)

[37] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

> "The Campaign notes that Gamma Spectrometry did not, and could not, identify the presence or concentrations of Plutonium in the Hinkley sediments.
>
> The Campaign draws attention to the fact that CEFAS were compelled to use the 'derived estimate' process to conclude that average Plutonium content of the Hinkley sediments for all 3 surveys exceeded all of the 'positive' findings for Americium 241 recorded by Gamma Spectrometry. The Campaign concludes that this fact alone is evidence that Gamma Spectrometry cannot and has not identified ALL of the radio nuclides present in the sediments."[38]

44. A report produced by the petitioner has stated that other non-Gamma emitting radionuclides would also not have been directly detected by the testing methodology used:

> "Non gamma emitters consist of a range of radio nuclides including a number of alpha and beta emitting Plutonium isotopes, Tritium (H3) and organically bound Tritium [...], Strontium 90, Carbon 14, Phosphorus 32 and a number of others. These radio nuclides must be analysed by other means such as radiochemistry, alpha analysis or liquid scintillation counting for extremely low-energy beta emitters."[39]

45. The Committee wrote to Cefas on 19 April 2018 to seek a response to these statements. In their response, Cefas confirmed that Gamma spectrometry analysis does not measure pure alpha- and beta-emitting radionuclides. They state that the "Internationally accepted guidelines" for radiologically assessing *de minimis* operate on a tiered approach. This means that:

> "Cefas initially undertakes a generic radiological assessment ("first tier") using the measured gamma-emitting radionuclide concentrations to determine a conservative level of risk from the gamma radionuclides (man-made and natural).
>
> Conservative estimates are also calculated for alpha-emitting radionuclides (^{239,240}Pu and ^{241}Pu, calculated from ^{241}Am measured data, and ^{210}Pb calculated from ^{226}Ra measured data) in the "first tier" assessment. Should the level of risk be determined as sufficient to have potential concern, furthermore detailed case specific assessments are undertaken.

[38] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

[39] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

> Since the generic radiological assessment (first tier) procedure for sediment samples assessed from Hinkley Point indicated that doses received were well below the Internationally recommended limits, a subsequent more detailed case specific assessment was not necessary (including the measurement of alpha- and beta-emitting radionuclides)."[40]

46. The petitioner argues that this approach is flawed. He states:

> "Had Alpha analysis been deployed on the Hinkley sediments proposed for disposal at the Cardiff grounds site, the precise concentrations of alpha emitters in the sediments could have been quantified."[41]

47. Cefas has stated that it uses other methods, such as "radiochemistry separation method, followed by alpha counting" in other circumstances but that for "an initial generic radiological assessment, to determine '*de minimis*'" this was not required.[42]

48. The petitioner has also questioned the "counting times" element of the testing methodology and proposed that longer count times could have improved the accuracy of results:

> "The Campaign notes that Gamma Spectrometry 'counting' times deployed during the CEFAS analysis are reported as approximately 15 hour duration.
>
> The Campaign references recent scientific studies which advise that research demonstrates that, for maximum efficiency of ID and quantification of lower level rates of radio activity concentration, count times exceeding 24 hours and up to 72 hours provide a far greater degree of identification and quantification accuracy."[43]

Depth of sampling

49. A further, related, point raised during the Committee's consideration of the petition has been a perceived lack of sampling of the material at depth. This

[40] **Cefas to the Committee**, 30 April 2018 (PDF, 433KB)

[41] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

[42] **Cefas to the Committee**, 30 April 2018 (PDF, 433KB)

[43] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

relates to concerns expressed that historical data from nuclear power stations indicates that discharges have previously been higher than is permitted today.[44]

50. In the early stages of the petition's consideration, the petitioner stated that:

> "The available evidence also implies that only surface samples (0-5cms deep) of the sediment have been analysed, despite the fact that core sample research from elsewhere in the Irish Sea demonstrates that, at depths below 5cms, radioactivity concentrations may be up to 5 times higher."[45]

51. However, the Committee has heard that samples have been taken and tested in 2009, 2013 and 2017. The 2009 samples were taken to a depth of 4.8m. NRW had told the CCERA Committee that:

> "NRW is satisfied that no further analysis of samples from beneath the surface is necessary, because of the sampling that was undertaken at various depths in 2009.
>
> There is no scientific evidence of higher radioactivity residing at depth in sediments in the Hinkley Area [...] Analysis of the monitoring provided by the application as well as the ongoing trend analysis of the results of the annual RIFE[46] monitoring programme, shows no indication that deeper sediment layers have higher levels of radioactivity than the surface layers at Hinkley Point."[47]

52. In evidence to the Committee on 5 December, the petitioner acknowledged that data he had seen in the intervening period indicated that samples up to a depth of 4.8m had been analysed:

> "So, I agree that samples have been taken, samples have been analysed. I would not have expected, necessarily, the great depth—the bottom half—to have given significant man-made radioactivity, because that, indeed, would have been heavily consolidated with long-lived sediments that probably predate the Hinkley nuclear discharges. But

[44] Record of Proceedings – **5 December 2017**, para. 62

[45] **Petitioner to the Committee**, 13 November 2017 (PDF, 38KB)

[46] The Radioactive in Food and the Environment (RIFE) annual report is produced in collaboration between environment and food standards agencies across the UK. This report includes radiological monitoring of sediments at Hinkley Point.

[47] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

> certainly, I think that report confirms that in the top metre, you've got the bulk of the available man-made radioactivity."[48]

53. This was confirmed by Dr Kins Leonard, Head of Radiological Protection at Cefas, who also provided a perspective on the comment by the petitioner (quoted above) that, in other locations, higher concentrations of radioactivity can be found below the surface:

> "There is no reason why there should be significant amounts of radioactivity in the sub-surface.
>
> I would add, because it's mentioned in the paper, that activity has been found in the sub-surface in other areas, but this is specific to Sellafield. And I, and lots of other people, have done work to determine what those activities are and how they've originated, and they're basically from historical Sellafield discharges that are not the same as those of Hinkley. So, the 2009 data demonstrate that there is no significant amount above the surface. Caesium-137, which is positive, is less than the surface. That is a conservative nuclide, meaning it probably goes through the water column and therefore is being diluted as it goes down into the surface.
>
> [...]
>
> The Environment Agency do a lot of sediment sampling of the Hinkley area. If we were to see remobilisation, i.e. sediment is brought from the bottom to the top through natural processes, you would have irregular results. We see that in areas in Sellafield through the erosion of various parts of the surrounding areas. We haven't seen that ever at Hinkley, so, again, there is no evidence to suggest that there are significant amounts of artificially produced radionuclides in the sub-surface sediments."[49]

54. Correspondence from Friends of the Earth Barry and Vale disputed the assertion that there is no evidence of higher radioactivity in deeper sediments:

[48] Record of Proceedings – **5 December 2017**, para. 73

[49] Record of Proceedings – **9 January 2018**, paras. 187-9

> "The evidence is clear in the 2009 data for U238 and Radium, [...] the numbers show 3 out of the 5 samples were significantly higher at depth (up to 3x for Radium – Ra)."[50]

55. The Committee put this concern to Cefas and received the following response:

> "[...] in environmental sediments, activity concentrations (both man-made and natural) are known to vary (sometimes by up to orders of magnitude) at depth, and also spatially, due to the heterogeneous nature of sediments.
>
> Concentrations of uranium-238 and radium-226 at depth, from EDF's sediment data (collected in 2009), were also included in the most recent dose assessment (undertaken in 2018). Furthermore, hypothetically, if the maximum measured values of uranium-238 and radium-226 (at depth) were the only values used to re-run the 2009 assessment again (i.e. no uranium-238 and radium-226 surface data were used) the resultant dose would still be below the "*de minimis*" criteria. This is because the magnitude of activity concentrations is not directly proportional to the estimated dose."[51]

56. The petitioner has expressed concern that not enough samples have been taken at depth to provide a fully accurate picture and about the analysis carried out:

> "Now, unfortunately, that was a very generalised survey, and what they seem to have done is take the top metre, stir it all up and then analyse it. So, we've got no profile through that top metre about the difference between the top 5 cm and the bottom 95 cm. So, it's not very discrete, but it does give you a very loose average, and I'll agree on that."[52]

57. EDF told the Committee that the analysis done on the samples was reflective of what would happen during dredging:

> "The dredging will mix it all up, so, effectively, you're analysing, you're modelling, exactly what is going to happen to that sediment, because

[50] **Friends of the Earth, Barry & Vale to the Committee**, 16 April 2018 (PDF, 630KB)

[51] **Cefas to the Committee**, 30 April 2018 (PDF, 433KB)

[52] Record of Proceedings – **5 December 2017**, para. 73

> the dredging isn't going to take it off millimetre by millimetre, it's going to take it off in a big lump."[53]

58. As the 2009 testing included the only set of samples that had been collected at depth, the petitioner has questioned why only five cores were analysed. Cefas told the Committee that this sampling was carried out by another company on behalf of EDF and, although Cefas did the analysis, they were not involved in developing the sampling plan.[54]

59. In light of these concerns, the Committee wrote to NRW in January 2018, after the completion of oral evidence gathering, to recommend that NRW consider requesting the licence holder to arrange for further samples to be taken at depth and analysed.

60. The idea of additional testing of the material at depth had been acknowledged during the Committee's evidence session with NRW and Cefas. Cefas commented:

> "Well, if that is a requirement to allay public perception, we would be very happy to do that. We would follow the guidelines that are set out by the International Atomic Energy Agency in the way in which we do it and in which we assess the dose. We could make it more transparent in terms of how that assessment is done in the report, and we would be very willing to participate in that if it helps public perception.
>
> [...]
>
> However, from a scientific point of view, I think we'd be content that the need for that was public relations, rather than additional evidence or scientific data."[55]

61. NRW responded on 30 January stating that it had asked the licence holder "to consider further voluntary sampling at depth for further reassurance", "acknowledging the public interest in the matter", and that it was awaiting a response. NRW emphasised that:

> "[...] in our view there is no scientific basis to conduct further sampling at depth, relating to the above disposal licence: The 2009 sampling

[53] Record of Proceedings – **5 December 2017**, para. 197

[54] Record of Proceedings – **9 January 2018**, paras. 193

[55] Record of Proceedings – **9 January 2018**, paras. 259-61

> results were sufficient for us to conclude that this material was suitable to dispose at the Cardiff Grounds Site."[56]

62. On 27 March 2018 NRW provided a further response to the Committee, stating that the licence holder had rejected the idea of additional sampling and testing at depth:

> "Following your request, we also asked the licence holder to consider further voluntary sampling at depth. However, following the results of the samples taken in 2009, 2013 and 2017, it is not considered necessary as there is no scientific basis for any additional sampling. Unfortunately, this is not something that we can re-visit through the licence or its conditions."[57]

63. Information provided by EDF in late 2017 had also covered the issue as to whether sufficient testing of the material at depth has been carried out:

> "The sediment has been tested at depth. In 2009 CEFAS obtained sediment samples at depths up to 4.8 m to support the HPC Planning Application. No artificial radioactivity was observed below 2 m This is likely because any sediment at a depth of greater than 2 m depth will have accumulated hundreds if not thousands of years ago, prior to the start of industrial activity in the area. As a consequence repeated testing to greater depth is not required."[58]

64. EDF had also suggested to the Committee that this was unnecessary during their oral evidence, and would likely not resolve the issue in any case:

> "The bottom line is the results won't be any different. I think one of the issues we're talking about here is the assessment process itself. If we were to reassess it, we'd be using exactly the same process, so the results wouldn't be any different and we'd still have that conflict in terms of whether the assessment process itself is acceptable."[59]

65. The company also referred to the importance of the testing being carried out to agreed standards and methodologies:

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[56] **Natural Resources Wales to the Committee**, 30 January 2018 (PDF, 130KB)

[57] **Natural Resources Wales to the Committee**, 27 March 2018 (PDF, 133KB)

[58] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

[59] Record of Proceedings – **5 December 2017**, para. 235

> "To get the answer to your question, you need to make sure you've asked the right question and make sure those studies are properly scoped."[60]

66. Having been told that the dose calculation was the critical element of the analysis, the Committee learned during its evidence session with NRW and Cefas that this analysis had not been carried out on the 2009 depth samples because Cefas had only been requested to provide concentrations data:

> "We didn't work out a dose; that wasn't part of our remit at that time. I could do an assessment of that dose now with those numbers, but it hasn't been done to date.
>
> [...]
>
> We could do a dose assessment on that data, but I can guarantee that they will be de minimis values, mostly because the values at depth are, as I say, less-than values—and when we do an assessment, we include the less-than values as a positive value, i.e. we overestimate the activity concentrations for the dose assessment—and they are no larger than, or are in the same ballpark as, the 2013 and 2017 data at surface, and less at bottom."[61]

67. The Committee considered this to be a key part of the assessment and requested that NRW should ensure that this assessment was made. NRW responded on 27 March 2018:

> "For public reassurance, we requested that Cefas undertake radiation dose analysis of the 2009 samples, as this analysis had been carried out on samples from 2013 and 2017; this has now been completed. In addition to the specialist advice provided by Cefas, we consulted Public Health Wales and NRW's own internal expert in relation to the dose analysis results. The assessment concluded that the values for individual dredger crew members, the public, and the total collective dose were within the de minimus criteria according to the generic radiological assessment procedure developed by the IAEA (International Atomic Energy Agency). Therefore, the results, based on Cefas' analysis and the

[60] Record of Proceedings – **5 December 2017**, para. 288

[61] Full discussion of this point within Record of Proceedings – **9 January 2018**, paras. 300-314

> IAEA criteria, show that the material possesses no radiological risk to human health or the environment."[62]

Other contaminants

68. The Committee has also received concerns in relation to other chemical contaminants potentially present within the sediment.

69. However, the Committee heard that testing for other substances had also been part of the licensing process. NRW wrote to the CCERA Committee in November 2017 stating that chemical contaminants would be assessed against the Cefas action levels, but that these were guidelines which:

> "[...] are not statutory contaminant concentrations for dredged material but are used as part of a weight of evidence approach to decision-making on the disposal of dredged material to sea. [...] Cefas will provide us with their advice on the suitability for deposit in the Cardiff Grounds site based on the results of those assessments."[63]

70. EDF stated that:

> "In terms of the non-radio, so the organics and the trace metals as well, there are different processes. There are what are called 'action levels' by CEFAS, which set thresholds for these. There's an action level 1, below which, typically, the concentrations are deemed to be entirely safe, above 2, absolutely not, and, between 1 and 2, there is the potential to take further investigation. [...] certainly, some of the ones from the Hinkley dredge site are above the action level 1, but considerably below the action level 2, and also reflective of other concentrations elsewhere in the estuary. So, the assessment was made, looking at that, those that did go beyond the action level 1, but, in terms of that further assessment, the concentrations are still in orders of magnitude below the action level 2.
>
> [...] obviously the Severn estuary has a long legacy of industrial development and sediments moving around within the estuary, and therefore it's not really anything like a pristine estuary because of all of the development that takes place along the coast."

[62] **NRW to the Committee**, 27 March 2018 (PDF, 133KB)

[63] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

71. Therefore the evidence we received was that the substances which were above the Cefas action level 1, were "quite a small breach" and "reflective of concentrations across the estuary".[64]

72. However, it has been suggested that there is no evidence that the contaminants that were identified above action level 1 have been subject to further consideration.[65]

4. 3. The location of disposal

73. An issue that has been raised throughout the Committee's consideration of the petition is the selection of the Cardiff Grounds site for disposal of the sediment.

74. The petitioner told the Committee that, in his opinion, the safest option would be to leave the sediment where it currently is, because it is away from exposure to human beings. If the sediment was moved, he proposed that it would be preferential for it to be buried on land or offshore, where "it would be more widely dispersed into a bigger sea area, like the Atlantic rather than the Bristol channel".[66]

75. EDF informed the Committee that the area being dredged (and in fact, a significant area of the Severn Estuary) is a Special Area of Conservation (SAC). This means that sediment removed must be put back into the same area for reasons of ecology and conservation. Furthermore:

> "Within this SAC, the Cardiff Grounds are the largest and only suitable grounds to deposit sediment from EDF Energy and other companies conducting dredging in the Channel."[67]

76. The Committee was told by EDF that, as a result of the need for sediment to remain within the estuary, land disposal had not been considered.

77. In relation to the Cardiff Grounds site, EDF told the Committee that:

> "Cardiff Grounds has been a licensed disposal site since the 1980s, and takes on average 1,500,000m3 of sediment each year. It is important to emphasise that EDF Energy is not the only company licensed to use the

[64] Record of Proceedings – **5 December 2017**, para. 163-8

[65] **Friends of the Earth, Barry & Vale to the Committee**, 16 April 2018 (PDF, 630KB)

[66] Record of Proceedings – **5 December 2017**, paras. 102-5

[67] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

> Cardiff Grounds - the site will have received several million cubic meters of dredged sediment from other parts of the Bristol Channel over several decades."[68]

4. 4. The potential fate of the material following disposal

78. The petitioner has outlined concern over the potential dispersal of the sediment once it is disposed of within the Cardiff Grounds site:

> "We note that although sedimentary radioactive material is initially likely to disperse, a number of studies carried out in Wales have proved that it later re-concentrates in coastal and estuarine mudflats and salt marshes, and is also available for sea-to-land transfer during episodes of coastal flooding.
>
> Two studies at Welsh coastal sites have demonstrated sea to land transfer of marine radioactivity, one has clearly shown the entry of marine radioactivity into coastal terrestrial food chains (dairy/meatstock) up to 10 miles inland, evidence which further implies the entry of marine radioactivity into arable and horticultural food chains and hence dietary doses (via terrestrial foodstuffs) of marine radioactivity. The presence of airborne marine radioactivity in terrestrial coastal zone environments plainly also implies the potential for inhalation doses."[69]

79. Evidence the Committee received from NRW and EDF recognised the phenomenon of sea-to-land transfer, but stated that this is included within the modelling and analysis done by Cefas on the samples taken.[70]

80. Cefas confirmed that dispersal had been considered as part of its advice to NRW on the results from testing of the material. It also confirmed that the Cardiff Grounds site means that material will ultimately be dispersed across a wider area:

> "So, our advice would look at the natural conditions occurring in any site that's licensed for disposal. Cardiff Grounds has been licensed for many years, so our assessment would take into account, and indeed did take into account, the natural processes associated with the Cardiff Grounds site, both in terms of its physical nature, its dispersive nature,

[68] EDF Energy – **Hinkley Point C Sediment Briefing**, received by the Petitions Committee 17 November 2017 (PDF, 241KB)

[69] **Petitioner to the Committee**, 13 November 2017

[70] Record of Proceedings – **5 December 2017**, paras. 174 and 227-8

> but also things like fisheries and other potential contaminants that may be within the sediment to be disposed. All of that assessment forms a weight of evidence and allows us to make a judgment and provide advice to the regulator as to whether or not we felt, from an environmental point of view, that disposal of that material to that particular site was appropriate, and indeed, in this instance, we suggested that it was."[71]

81. The petitioner has expressed concern about a lack of baseline data for the "receiving area" i.e. the Cardiff Grounds disposal site and surrounding area:

> "Full and detailed baseline data on the radio-activity in the sedimentary material proposed for the disposal/dump will permit a fuller understanding of the potential risks, potential pathways of exposure and potential doses of radioactivity to the public."[72]

82. He has called for further research so that the behaviour of sediments within the Bristol Channel and Severn Estuary can be better understood prior to the disposal of the sediment.

83. In March 2018, following a request from the Committee, NRW submitted a paper produced by Cefas, which provided some further detail about the movement of sediment disposed of at Cardiff Grounds. This found that "the general net transport of sands within the estuary is upstream, driven by […] strong tidal currents". But that:

> "[…] the area in the vicinity of the Cardiff Grounds disposal site has been identified as being in equilibrium, meaning that sediment within this area is more likely to remain in the sediment cell, rather than being characterised by erosion or deposition."

84. The paper concluded:

> "[…] sediment within the estuary is highly mobile, with sediment being frequently resuspended, and rarely settling out permanently. Therefore, if any sediment disposed of to the area is found to contain contaminants (within acceptable levels for disposal), it is likely that this

[71] Record of Proceedings – **9 January 2018**, para. 299

[72] **Petitioner to the Committee**, 22 December 2017 (PDF, 454 KB)

> contamination will be further diluted over time through mixing in the water column."[73]

85. The petitioner has disputed the value of the information provided and its conclusions. This is on the basis that the research papers that informed its production "are Severn Estuary in scope and none report any site specific (Cardiff Grounds) data investigations", and that fine sediments were generally of little interest to the studies.[74] The petitioner has also expressed dissatisfaction that two of the research papers referenced by Cefas have not been made available. One, which is a Conceptual Process Model for the potential development of a Cardiff tidal lagoon, was provided to the Committee but has not been published as it is marked as a draft and "commercial in confidence". The other has not been received but was a research paper dating from 1984.

86. NRW also told the Committee:

> "Environmental sampling of the Severn Estuary for radionuclides is also conducted as part of the joint UK regulators Radioactivity in Food and the Environment (RIFE) programme. This is an extensive monitoring programme measuring radionuclides in air, water, soil and foodstuffs and is an independent check-monitoring programme, supplementing the environmental monitoring that the regulators require of permitted nuclear sites to carry out and report to us in the UK. NRW are partners in this programme."[75]

4. 5. The handling of the marine licence

87. The petition calls directly for the suspension of the marine licence.

88. In November 2017, the CCERA Committee asked NRW whether the grounds for suspension outlined in section 72 of the Marine and Coastal Access Act 2009 had been met. NRW responded:

> "There is no need to consider licence suspension. Licence condition 9.5 prohibits the licence holder from depositing any material after 4th March 2016 without our written confirmation that we are satisfied that

[73] **NRW to the Committee Annex: Cefas information summary**, 20 February 2018 (received 27 March 2018) (PDF, 324KB)

[74] **Petitioner to the Committee**, 9 April 2018 (PDF, 50KB)

[75] **NRW to the Committee**, 27 March 2018 (PDF, 133KB)

> the material is suitable for disposal. We will not give this approval unless we are satisfied that the material is suitable for disposal."[76]

89. NRW also explained the process for confirming the activity permitted under the licence. At that point, NRW was awaiting the results of analysis of samples that had been collected in May 2017 (these were provided in late 2017):

> "It is the applicant's responsibility to arrange for the samples to be collected from the locations identified in the approved sample plan. We understand that the licence holder has also commissioned Cefas to collect and then analyse the samples. […] Cefas will provide us with their advice on the suitability for deposit in the Cardiff Grounds site based on the results of those assessments.
>
> We will then consider the conclusions of this advice in consultation with our internal technical experts (our internal radiological experts will liaise with Environment Agency (EA) nuclear regulatory contacts in providing comments) and Public Health Wales.
>
> NRW will then determine if it is satisfied that the material is suitable for disposal in the Cardiff Grounds site. The licence holder will require prior written approval from NRW before it commences any disposal activities."[77]

Environmental Impact Assessment

90. The petition also calls for a full Environmental Impact Assessment (EIA) to be conducted. The CCERA Committee asked NRW if an EIA had been undertaken in relation to this marine licence, and if not, why not. NRW's response indicated that an EIA had not been requested on this specific activity, though an EIA was conducted on the development of Hinkley Point C overall. They explained that this decision had been taken by the Welsh Government's Marine Consents Unit, which was responsible for administering the marine licensing system at the time the applications were received:

> "Significant progress had been made on both applications when they were transferred to NRW on vesting day (1 April 2013), when NRW was delegated the Welsh Marine Licencing function on behalf of Welsh Ministers.

[76] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

[77] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

> We understand that the Welsh Government, as appropriate authority, took the decision that it was not necessary to determine this application under the Environmental Impact Assessment process. We therefore, in good faith, continued the determination of the marine licence application on that basis.
>
> When NRW issued the marine licence in July 2014 we were satisfied that a robust process had been followed to ensure that the licence fulfilled its requirements of preventing pollution of the environment, harm to human health or impact to legitimate users of the sea."[78]

91. The petitioner has suggested the perceived lack of baseline data as a reason that a full EIA should be conducted.

Public consultation.

92. Though the initial consideration of the licence had taken place some years prior to the petition, it included a call for a public consultation on the issue. When asked by CCERA if it was satisfied that the public had been sufficiently consulted, NRW responded:

> "We are satisfied that a public consultation was undertaken during the determination of the licence application in accordance with our procedures and legal obligations. The consultation period commenced on 13th September 2012 and lasted for 28 days. This included the advertisement of public notices in the Western Mail. The notices directed the public to the application documents which were held at Cardiff Central Library."[79]

93. The petitioner commented on the time period that had been available for people to respond to this:

> "It's a terribly short time. I mean, we had three months to respond to the generalised Hinkley C development application. And I know that the people who wrote that spent five or six years doing that, and then we were given three months to respond to it, having seen the documentation. So, that's another thing I would say to regulators, 'Please, can we have more notice and can we have a longer consultation period?', because it's ridiculous. You've got highly paid organisations doing all of this work and then it's put out to the public

[78] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

[79] **NRW to Chair of CCERA Committee**, 21 November 2017 (PDF, 224KB)

> and we have to work that on a shoestring financially and on an extremely compressed timescale."[80]

94. NRW explained to the Committee that the original licence applications were received in 2012, prior to the establishment of NRW and when the Welsh Government's Marine Consents Unit was responsible for their scrutiny. NRW suggested that if a similar application was received by NRW today the public communications element may have been dealt with differently:

> "[...] if we were to receive the application today, the approach would probably be very different, and there are plenty of examples where we do that with permit applications, to engage with local communities and perhaps beyond, if we realise the level of public interest that's there."[81]

Current position

95. NRW's letter to the Committee of 27 March 2018 provided an update in relation to its consideration of the licence:

> "We have also completed our assessment of the suite of samples that were submitted to us in November 2017. The report and conclusions were produced by Cefas and we also conducted a technical consultation with Public Health Wales and NRW's experts using the same international guidelines as for previous samples. The chemical and radiological results were within acceptable limits and we are satisfied that there is no risk to human health or the environment.
>
> [...]
>
> We have therefore formally discharged condition 9.5 of the marine licence [which required further testing for any material to be deposited after March 2016]. However, there is a further condition regarding site monitoring that the licence holder needs to discharge before NRW will provide written approval before the disposal activity can commence."[82]

96. This suggests that the dredging and disposal activity could be set to proceed from summer 2018 as outlined the intention of EDF in December 2017, hence the

[80] Record of Proceedings – **5 December 2017**, para. 95

[81] Record of Proceedings – **9 January 2018**, para. 255

[82] **NRW to the Committee**, 27 March 2018 (PDF, 133KB)

decision of the Petitions Committee to publish this summary and seek time for a Plenary debate on the petition.

97. Recent submissions from the petitioner have concluded that the evidence received from those involved in the marine licencing process has not provided the reassurance that the campaign against this activity is seeking.[83]

98. However, Cefas has stressed to the Committee that:

> "[…] the scientific methods used by Cefas to advise NRW on the application to dispose of dredged material at Cardiff Grounds, are appropriate, internationally recognised methods. Furthermore, the data derived from these methods suggest the material to be disposed is suitable for disposal at sea offering no cause for concern on either environmental or human health grounds."[84]

[83] **Petitioner to the Committee**, 13 March 2018 (PDF, 482KB)

[84] **Cefas to the Committee**, 30 April 2018 (PDF, 433KB)