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Paper Title:	Climate Change policy and Carbon Positive project update
Paper Reference:	NRW B 31.16
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Purpose of Paper:	Information and decision
Recommendation:	To note and endorse <ul style="list-style-type: none"> - Climate change policy developments - progress in evaluating NRW's net carbon status and mitigation options - priority areas for further consideration within project work programme

Impact: To note – all headings might not be applicable to the topic	<p>How do the proposals in this paper help NRW achieve the Well-Being of Future Generations Act principles in terms of:</p> <p>Looking at the <u>long term</u>: The project's aim is to reduce net carbon emissions in NRW as an exemplar for others to accelerate the move to a low carbon economy in Wales thereby reducing the long-term impacts of climate change.</p> <p>Taking an <u>integrated approach</u>: The project will examine the range of multiple benefits of carbon reduction measures and embed best practice carbon management across NRW.</p> <p>Involving a <u>diversity of the population</u>: We will shortly be holding staff engagement events to consult on the mitigation options and gain organisation wide input.</p> <p>Working in a <u>collaborative way</u>: We are seeking best practice from other organisations and are a stakeholder in the Net Positive Project. We will be sharing our experience with the Climate Change Commission for Wales' members.</p> <p>Preventing issues from occurring: Contributing to reducing global emissions is essential for reducing the impacts of climate change.</p>
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Issue

1. This paper provides an overarching view of recent climate change policy developments and progress with the Carbon Positive Project, following on from the discussion at the December 2015 Board meeting. It provides a framework for the challenges and opportunities to meeting our climate change outcomes and the work within the Peatlands for the Future paper is nested below this Project as it will help deliver the wider objectives set out here. Future Board papers will focus on what we need to do to tackle challenges and take opportunities.

Background

2. **Climate Change Policy Developments.** The UN Framework Convention on Climate Change's Paris Conference of Parties 21(COP21) event in December concluded in an international agreement that provides added impetus to efforts to reduce global emissions and avert the worst impacts of climate change. Among many commentators it has been viewed as 'the end of the beginning' in that it sets out a high level of ambition with not only a clear goal to limit global temperature rises to 2°C, but an ambition to manage them to 1.5°C, with all 195 nations and the EU agreeing to work to reduce emissions rather than the previous focus on developed countries in Kyoto.
3. The agreement does not set legally binding emission reduction targets for nations, instead nationally defined contributions to emission reductions are collated by UN and reviewed every 5 years. While the agreement is clearly a step forward, it is reliant on nation states meeting their contributions which will be both challenging while also (in combination) almost certainly insufficient to meet the 2°C target let alone the 1.5°C ambition.
4. From a Welsh perspective the Natural Resources Minister attended the CoP21 to reinforce the important role of states and regional governments in delivering emission reductions, in particular referencing the Wellbeing of Future Generations Act (2015) (WoFG Act), Environment Act (Wales), as well as NRW's work such as Plant! and the Carbon Positive project.
5. Of particular relevance, from an NRW perspective, was the role of Welsh Government in the drawing up and signing of an international Memorandum of Understanding that commits signatory regional and state governments to ensuring a nature-based approach is a key pillar of their climate action. This is not a new concept with the value of ecosystem-based mitigation and adaptation recognised during previous conferences. Clearly, seeking to embed consideration of climate change in Sustainable Management of Natural Resources (SMNR) and increase carbon storage on the Estate through this project will be key to helping deliver this commitment for Wales.

6. Since December, the Environment Act (Wales) 2016 has become law putting in place a requirement for the Welsh Government to establish statutory emission reduction targets for Wales and 5-yearly carbon budgets to support their delivery. Along with goals within the WoFG Act, this provides a statutory basis for developing the mitigation policies and measures necessary to meet the carbon reduction targets while also delivering wider environmental, economic and social benefits. Within this policy context the Carbon Positive project has an important role to play in leading the shift to a low carbon public sector in Wales by developing a process and approach with wider applicability and capacity for replication across public bodies.

Update

7. **Calculation of NRW's net carbon status.** Work has continued to refine the carbon emissions calculation, expanding the scope of the emissions included and addressing data gaps. The additions have included fuel use by NRW; refrigerant losses from air conditioning and fridges; treatment of water discharged to drains from buildings; waste streams disposed of and livestock for reserve management. The separation of purchased electricity between non-renewable and renewable tariffs will enable the use of appropriate emissions data.
8. Based on provisional calculations of the revised data, NRW's top five emissions sources associated with core NRW activities¹ are:
 - 1) Electricity use,
 - 2) Diesel use in NRW owned vehicles,
 - 3) Diesel use in leased vehicles,
 - 4) Red diesel use in NRW owned plant / machinery,
 - 5) Natural gas for heating.
9. A key focus of improvement has been the estimation of emissions associated with NRW's supply chain to produce a calculation for emissions from goods and services purchased, using a spend-based assessment with Defra Environmental Reporting Guideline emission factors. This has identified the organisation's key supply chain emissions to help target emission reduction efforts for greatest effect as part of the scoping exercise. Based on provisional calculations, NRW's top five emissions sources associated with the procurement of good and services² are:
 - 1) Contractors and services – Forest harvesting,
 - 2) ICT - Contractor and consultant services,
 - 3) Transportation – Haulage (mainly timber),
 - 4) Contractors and services – Engineering,
 - 5) Fleet purchase, hire and maintenance.

¹ Excluding goods and services procured.

² Excluding pension investments, service level agreements and reservoir operating agreements

10. Given the magnitude of the sequestration contribution of the Estate to our net carbon status, two contracts are currently being finalised to improve our understanding of the peatland and woodland carbon storage and sequestration estimates, as these habitats make up approximately 87% of NRW's Estate and are likely to offer the greatest potential for improving sequestration.
11. Forest Research are modelling total carbon stocks and annual sequestration in all NRW estate woodland (commercial forests and woodland on NNRs). This will use the leading forest carbon model in the UK to estimate carbon storage in vegetation and soil, based on NRW's current management regimes - taking into account species composition, age profile, growth rate and soil type.
12. A further contract is being finalised to model carbon stocks and annual sequestration/emissions from the range of peat habitats on the NRW estate. Based on maps of drainage ditches and the best available emissions data for Welsh peatlands, this method will provide a condition based assessment of carbon storage and will help identify areas where peatland restoration projects could enhance carbon storage on the Estate. This work is closely linked to the approach in the Peatlands for the Future work Board paper NRW B 32.16.
13. Work is now underway to refine our calculation of land management emissions associated with forestry harvesting and other operations (including fencing, tree works, haulage, tree planting and forestry civil engineering work) along with work done by staff and contractors on NNRs.
14. Once all data for the 2015-16 year is available a revised baseline calculation will be produced along with guidance for others on the approach.
15. **Scoping Exercise for Mitigation Options.** Research into climate change mitigation measures for NRW is in progress, exploring key opportunities for the organisation to reduce its emissions, increase sequestration and protect carbon stocks within the NRW estate, including:
 - *Electricity supply* – exploring options to switch NRW's electricity supply to a 100% renewable tariff/supplier. The Project is working collaboratively with Facilities and EMS teams to ensure cost is a key consideration.
 - *Building efficiency* – evaluating buildings and technologies to reduce energy use. For example, the project is assisting work to deliver building efficiency measures, such as solar PV, LED lighting and air-source heat pumps, as part of a successful

WG Invest-to-Save bid and exploring opportunities to expand the programme of work to other NRW buildings.

- *Reducing emissions from land and assets* – exploring opportunities to reduce energy use through activities on our land and the operation of our assets. For example, exploring opportunities to retrofit pumping stations with energy efficient pumps and solar installations to reduce energy consumption, like at Greenmoor pumping station.
- *Transport* – investigating sustainable transport options for NRW, including ecodrive training for staff and a trial of electric vehicles and charging points to reduce diesel use in our fleet. Working with Sustrans we are also considering the potential for promoting active travel (walking, cycling) both for commuting and some short business journeys.
- *Renewable energy generation* - currently finalising a contract to assess the renewable energy potential on NRW's estate, as a means to reduce the organisation's dependency on electricity from the grid, which will reduce both our emissions and costs.
- *Procurement of goods and services* – emissions associated with goods and services purchased by NRW are approximately three times greater than all of our emissions from direct operations. The project is exploring what measures can be implemented in NRW procurement policy to improve the carbon credentials of the goods and services we procure. This could include, influencing frameworks, widening the use of 'carbon calculators' to promote substitution of materials, encouraging our suppliers to adopt carbon reduction measures, strengthening weighting of carbon criteria and improving guidance on reducing the carbon impact of contracts.
- *Peatland restoration* – restoring degraded (net carbon emitting) habitat which has high carbon sequestration potential on the NRW estate. Work to rewet an area of peat on NRW land within the Dyfi NRM trial area is being considered, to increase its carbon sequestration potential, provide wider environmental benefits and act as a demonstration for local landowners. Restoration of eroding peat and other degraded habitats on the NRW estate is also being considered.
- *Increasing sequestration of the forest estate* – opportunities to increase sequestration on the forest estate are being explored. This could include influencing the management of forest areas and/or woodland creation, along with influencing product use where we have a degree of control.

- *Protecting carbon stocks on our landholdings* – NRW’s landholdings (e.g. habitats on our NNRs) also represent a very large carbon stock (the carbon stored in soils and vegetation). The maintenance and protection of these stocks is important as degradation/loss can lead to habitats becoming net emitters of carbon. The project is exploring options for NRW to protect its carbon stocks.

16. Prioritising mitigation options and delivering demonstration projects. The outputs of the scoping exercise research will be refined by:

- further investigating the feasibility of proposals on the Estate;
- identifying best practice carbon management that we can learn from (e.g. BT, Crown Estate);
- undertaking a Marginal Abatement Cost Curve assessment of those options suitable for such quantitative analysis to establish the likely financial benefits;
- qualitatively evaluating mitigation options for additional benefits that might be achieved in relation to the WFG goals;
- presenting proposed options and identifying other mitigation opportunities through staff engagement events to be held in early May.

17. A key element of the project will be to demonstrate delivery of mitigation options across NRW’s activities. Project proposals will be drawn from the Scoping Exercise. Several options have been proposed for priority action, with detailed investigations and discussions in progress to deliver renewable energy supply for NRW’s electricity, installation of LED lighting, trial use of electric vehicles and restoration of a case study area of degraded peat.

18. **Project deliverables.** The prioritisation of mitigation options will identify measures to be delivered or trialled as part of the project during 2016/17 (*Demonstration Projects*) and others that will form part of a long-term delivery plan (*Future Implementation Plan*). Along with the *Net Carbon Status calculation* and a comprehensive *Carbon Positive project report* on our approach, these four project outputs will provide the resources that we will share with other organisations.

19. **Working with others.** We have agreed with WG the reframing of the project to improve our net carbon status rather than the original aim of becoming net carbon positive. A Communications Strategy for the project has been produced and the project was promoted at the CoP21 event in Paris, the *Climate Change: Commitment to Action* event held in December in Cardiff and at the Climate Change Commission for Wales.

20. To date the focus has been on internal delivery of the project but there is considerable interest amongst Commission members to engage with the project going forward. The project is also liaising with a range of public and private organisations to identify best practice and learning. Once the scoping exercise has

concluded the intention is to organise a public sector stakeholder event to help facilitate wider implementation by public sector organisations and PSBs.

Recommendation

21. To note progress to date and endorse and comment upon the mitigation options being prioritised for further consideration and delivery through demonstration projects or inclusion in a Future Implementation Plan.

Key Risks

22. Failure to assess the options and undertake the proposed mitigation measures will lead to reputational issues, will prevent long-term financial savings from energy and resource efficiency measures being achieved and undermine NRW's ability to act as an exemplar in carbon management for the wider Welsh public sector. As part of the project management process a comprehensive risk register has been produced to help mitigate risks that will be reviewed by the Steering Group.

Financial Implications

23. This project has been funded by WG with a ring fenced £825K budget to run up until March 2017. A project plan and budget profile has been produced to monitor delivery and spend overseen by a Project Steering Group.

Equality impact assessment (EqIA)

24. Not relevant, although it is possible that as detailed mitigation actions emerge they may require EqIA to ensure they are equitable and provide equality for all.