

Achieving our low-carbon pathway to 2030

Consultation questions

You can respond online at www.gov.wales/consultation.

1. Are you responding as an individual or on behalf of an organisation? If you're responding on behalf of an organisation, please provide the organisation's name.

Individual

Organisation

Name of organisation: Natural Resources Wales

2. Do you live in Wales?

Yes

No

We've identified some potential actions to reduce emissions between now and 2030 but want to know how you think we should take these ideas forward and what else could be done. We also want to understand where to focus efforts in the short-term and understand how we might enhance the relationships between sectors to reduce emissions.

When we talk about sectors we mean the emission reduction sectors (such as Transport, Power, Waste, Industry, Agriculture, Land use and Forestry, Buildings and Public sector) and cross-cutting areas (such as Innovation, Skills, Planning, Procurement and wider enabling mechanisms).

3. Overall, to what extent do you agree with the potential actions for reducing emissions set out in this document? (1=completely agree, 5=completely disagree)

1

2

3

4

5

Please explain the reasons for your answer:

The actions set out in this consultation bring together in one place the breadth of decarbonisation actions that are either on-going or planned. Based on that alone, this consultation serves a useful purpose in raising the profile of Welsh decarbonisation activity. However, we do not believe that the range of actions reflects the full breadth of issues that require action – we set out some additional suggestions and refinements below (see Q. 5).

Viewing the list of potential actions from the perspective of actions to be set out in the First Low Carbon Delivery Plan (LCDP) in 2019 and the need to strongly steer

the development of the Second LCDP for the 2021-2026 budget period, we consider that these proposals provide a strong basis for progressing decarbonisation. However, this consultation is couched as setting out a 'low-carbon pathway to 2030'. In this context, we consider the proposed actions as likely to drive incremental progress rather than setting out a sufficiently radical plan for delivering the 2030 target. In many sectors it is at present challenging to be clear on what form decarbonisation policy should take beyond the next year or so, for example, in agriculture where Brexit and the uncertainty of leaving the EU Common Agriculture Policy makes anything other than the proposed broad actions to support emissions reduction and removals in any new land management programme difficult to define. Moreover, a significant number of the proposed actions are in effect exploratory or research-focussed enabling actions to further help define mitigation measures. Given this, it would seem appropriate to view the list of potential actions as principally providing input to the First LCDP, which along with collating existing actions and policy, should include those enabling actions as well as setting out the direction of travel for longer-term ambitions and targets. It is quite likely that geopolitical issues, such as the form of Brexit; technological advances, such as the growth of battery storage capacity and smart grids; and greater understanding of growing climate risks and the need for urgent mitigation action; will all drive significant change in the scope of decarbonisation actions over the next few years. Consequently, we view the list of potential actions as the current list of proposals that should be reviewed and updated before the Second LCDP is produced. The proposals currently lack the ambition and breadth required to meet obligations to meet emissions reductions by 2030.

The Climate Change Strategy for Wales (2010) set out, within the Mitigation Delivery Plan, a series of costed actions for which estimates of emission reductions were provided. Further work to understand the costs and carbon reduction benefits of the proposed actions should be undertaken so that the scope and ambition of the Second LCDP is informed by such data.

It is also clear that some actions require considerably more work to focus their delivery, e.g. *collaborate with organisations across all levels of society and involve citizens in achieving our low-carbon pathway*, captures at least two separate actions both of which require refinement to provide clarity in terms of actions and their outcome.

4. Please tell us if you have any ideas for how we should deliver the potential actions for reducing emissions.

NRW is already engaged in working with Welsh Government on potential actions relating to the public sector through the Carbon Positive Project (<https://naturalresources.wales/about-us/corporate-information/carbon-positive-project/?lang=en>) and promoting the organisational net carbon status calculation and mitigation options assessment that NRW has produced for our buildings, transport, assets and land management. To aid progress towards the carbon neutral ambition for the public sector we will continue to share our experience with other Welsh public bodies and the PSBs, along with providing advice to WG on future actions to reduce public sector emissions. We are also actively engaged in informing policy development in relation to the agriculture, waste, energy, land use and forestry sectors where we are seeking to assist delivery of emission reduction targets. We welcome further engagement with the decarbonisation team and other policy teams across Welsh Government to explore ideas that can facilitate the delivery of the potential actions. Given the breadth of actions set out in the consultation and the breadth of NRW's remit, we have not sought to set out detailed suggestions here as we are already engaged in these discussions. But some commentary is set out in relation to the relevant sectors in Q 11.

5. What other ideas do you have for reducing emissions between now and 2030?

In reviewing the proposals, we have identified other areas that might be considered in terms of the Second LCDP, notably:

- Considering the role of 'blue carbon' in the marine environment in addition to the objectives around forestry and peatlands as while limited in their extent coastal habitats can act as net sequestering features that also have major co-benefits.
- Considering an additional action in relation to installation of renewables capacity on the public-sector buildings and Estate.
- A more explicit action in relation to consideration of carbon within public sector procurement (see Q7/Q11 responses).
- A more explicit action around energy efficiency and demand reduction in relation to both electricity and heat.
- An action around more efficient use in the homes and buildings could be considered. Making the link to water efficiency and grey water recycling in homes and businesses as treating and pumping water uses energy and adds emissions.

6. Considering the opportunities and challenges in each sector, what are your views on whether action should be prioritised in some sectors over others?

The UKCCC in its advice to Welsh Government on the development of the targets and budgets to 2050 has emphasized how challenging it will be to meet them, particularly given Wales' high proportion of industrial emissions and limited

capacity for CCS. In many respects the modelled emission reduction curves for each sector set out in the consultation reinforces the need to undertake actions in all sectors simultaneously in order to meet the overall Welsh targets. Given that some sectors will need further enabling actions to be delivered before substantial mitigation actions that reduce emissions can be delivered, it will be essential for all sectors that are currently able to deliver reductions in the short-term to do so, with a clear focus on areas of devolved competence as reflected in the consultation. We are clear that any prioritisation should be driven by pragmatic assessment of the feasibility of delivering emission reductions rather than any strategic prioritisation of certain sectors over others.

7. How could we encourage more collaboration and innovation between sectors?

While this consultation and the UKCCC's modelling and advice considers Welsh emissions in relation to the breakdown in the UK Emissions Inventory, it is important to recognise that this is an artificial categorisation that does not reflect the integrated nature of emissions in Wales. For example, while the public sector is identified as producing 1% of emissions, this is a huge underestimate of the scope of public sector emissions that takes no account of the cross-sectoral interactions. Public sector emissions from the Inventory only capture the direct emissions from public sector buildings. A significant proportion of emissions are captured in the power sector (electricity supply), transport sector (fleet vehicles and travel) or business sector (procurement of goods and services). Based on a relatively crude estimate from the Carbon Positive Project's assessment of NRW's emissions, it is likely that the total carbon footprint of the Welsh public sector (if similar to that of NRW) is likely to be around 12-15% of Welsh emissions. In future development of the LCDP, and particularly in its communication, further thought should be given to presenting a more realistic sectoral breakdown to show the relative significance of the sectors for decarbonisation.

In the case of public sector procurement, developing procurement standards, frameworks and guidance that result in reduced emissions will drive more carbon efficient businesses. Given the £6 billion expenditure by the Welsh public sector, NRW through the Carbon Positive Project recognises significant potential for this to drive more cross-sectoral collaboration and innovation. Further join-up between the Welsh Government decarbonisation team and Value Wales and the National Procurement Service, along with other public-sector organisations e.g. NRW and PSBs, could provide a key route to facilitating this objective, such as in relation to enabling roll-out of EV charging infrastructure. Procurement could provide a broader impetus for a non-sectoral approach that looks at a whole-systems approach rather than the sectorally-structured proposals in the consultation. For example, public-sector buildings delivering power generation and acting as EV charging hubs could act as a driver of wider more integrated action.

The role of PSBs in delivering public sector collaboration should be recognised and promoted, and could be captured as a separate action. Our Carbon Positive Project team have experienced an appetite for collaborative working on climate change mitigation, and particularly EV infrastructure in the public sector, however

numerous barriers such as the practicalities of joint funding / siting units / prioritising access seem to be inhibiting action currently. Welsh Government action on this with a focus on information sharing and learning could help to encourage action.

While significant progress has been made in cross-departmental working on decarbonisation within WG, including in the development of this consultation, it remains the case that decarbonisation is a siloed issue seen to be the responsibility of environmental teams/departments within many public bodies and businesses alike. There is a need to make mitigation a component of the remit/priorities for wider sectoral groups and collaborations too. Within the public sector and communities, the PSBs and their networks could provide a key route for collaboration and the mainstreaming of best practice across Wales.

While not ignoring the need to innovate, major progress in decarbonisation could be achieved through rolling out existing proven approaches and best practice throughout the country and the public sector, and many of the proposed actions do in effect do this.

While the current consultation and First LCDP have been developed largely in house within WG, with input from UKCCC, there is strong case for the development of the Second LCDP to be undertaken with more engagement externally, and across sectors to help facilitate collaboration and innovation. The recent engagement event for this consultation provided a rare opportunity for a range of sectors to consider decarbonisation in its broader sense. The development of the next LCDP could provide impetus and focus for further cross-sectoral discussions and collaborations within sectors not just within Welsh Government. Consideration should be given to a cross-sectoral fora that could consider decarbonisation collaboration and innovation issues for Wales.

Through our actions to reduce emissions, we want to maximise the wider benefits and minimise adverse effects for the people of Wales, both now and in the future.

When we talk about potential actions we mean the ideas in this document and any other ideas you have mentioned in Question 3.

8. How do you think the potential actions to reduce emissions might affect you or the organisation you work for?

NRW will have a significant role to play in the delivery of a range of proposed actions but particularly those related to the public-sector and land-use and forestry sectors. We also have potentially a role in public sector procurement, along with providing advice and input to various areas of policy development and delivery, ranging from waste to transport. However, the principal impact on NRW will be the need to make progress towards the carbon neutrality ambition for the public sector by 2030. In this regard, we have developed an Enabling Plan to embed the mitigation options identified through the Carbon Positive Project within our business planning. The delivery of the actions identified within this plan will have significant resource implications even though some elements will deliver longer-term savings in cost. The proposed actions set out will provide an additional driver to the programme of measures being proposed within NRW so should support greater uptake of measures. However, the public-sector actions do not provide focus for some of our key areas of work in buildings, land, renewables, and procurement (see additional items suggested in Q. 5).

The action for the public sector on baselining and reporting progress towards carbon neutrality will require NRW to commit to revisiting its net carbon status calculation in future. Currently we have a baseline calculation but cannot commit to periodic reviews in the absence of resources to deliver this. Detailed periodic emissions reporting will require us to develop improved and more efficient data recording and reporting procedures. Progress reporting for scope 3 emissions may require us to develop indicators in the absence of detailed carbon footprints for individual supply chains and products. Examples could include the proportion of spend for which tenders include carbon criteria, number of key frameworks influenced etc. As for NRW, it should be recognised that detailed periodic emissions reporting will require significant resource in any public sector organisation.

The proposed actions for the public sector on renewable energy and ULEVs provide support for NRW's existing work in these areas, and these national targets may help to expedite delivery, reducing our scope 1 and 2 emissions sooner than may have otherwise been the case. However, the loss of FITs for new installations will hamper PV roll out. The low-carbon heat ambition may be challenging for NRW in some buildings e.g. where biomass and ASHPs are not feasible. Energy audits of NRW offices by the Carbon Trust have typically recommend conventional boiler upgrades to increase efficiency rather than low-carbon fuel options. Our ability to meet the ULEV ambition will be dependent on technological

developments within the period and whether there are viable vehicle or fuel options to replace plant and specialist vehicles.

9. How do you think the potential actions to reduce emissions might affect the following?

- Public health

- Communities

- The Welsh language

- Equality

- Children's rights

The potential actions to reduce emissions will not affect the Welsh language directly, but there are opportunities to use the Welsh language in communicating, influencing and encouraging people to adopt low-carbon behaviours and technologies. The use of the Welsh language with people, children, communities and stakeholders of Wales to help understanding of the aims and objectives of *Achieving our low-carbon pathway to 2030* should give them the opportunity to participate and receive information in their language of choice.

The actions also address creating training opportunities for the new skills that will be required for low-carbon economy, participants should be able to access training through the medium of Welsh if they so wish.

In addition to the Welsh language opportunities, we see the potential actions being strengthened by good communications with other communities. Not so much geographical communities but those of minority groups who are seldomly positively engaged with. Here we are asking that when seeking opinions from minority groups, decision makers look to speak wider than disability, race and religion and actively listen to those from groups, such as the lesbian, gay, bisexual and transgender community, as well as children – as explicitly done for this consultation. Many of the children of today will be twelve years older in 2030 and likely be in employment and taking advantage of training in a low-carbon economy. The above actions would help in the delivery of several the Well-being goals.

10. How do you think the potential actions to reduce emissions might contribute to achieving the national well-being goals? You can read descriptions of the goals at <https://futuregenerations.wales/about-us/future-generations-act>.

The proposed actions have the ability to reach across many of the Wellbeing goals as has been recognised at various points within the consultation, particularly in relation to the globally responsible, prosperous and resilience goals. The application of the ways of working to the process of delivering the actions should help realise the maximum co-benefits against the goals. Further potential exists to highlight the opportunities for co-benefits and how decarbonisation is supporting wider well-being goal delivery.

For example, in reference to decarbonisation contributing to ecosystems and resilience, this could be further linked to maintaining or enhancing their benefits and services to wider well-being, thus showing the link of how decarbonisation is supporting wider well-being goal delivery.

PSBs do include voluntary sector representation and many have set objectives relating to decarbonisation that while the sector may not be required legislatively to play a role, they have a key part to play in delivering on decarbonisation and the wider well-being goals – and some will do this in collaboration with PSBs.

11. Do you have any other comments about this consultation?

In this section we provide more detailed responses to specific issues or sectors covered within the consultation, providing further context to NRW's role in relation to decarbonisation, and some further appraisal of the sectoral proposals.

Planning and decarbonisation

Planning Policy Wales (PPW) also refers to the Renewable Energy targets covered in the consultation which will help decarbonise energy supply from Wales, but clarity is required on how WG intend to deliver this e.g. whether by strategic large-scale schemes of preferred technologies, or by prioritising domestic generation or by a mix of options. We suggest that this needs a strategic direction that considers the environmental effects/ benefits of each approach.

We welcome the inclusion of policy provision that supports the delivery of appropriately located renewable energy schemes. This is consistent with the NRP priority to increase renewable energy and the wider target to reduce greenhouse gas emissions. However, it is not clear within PPW how the Welsh Government aspires to strategically deliver the target for 70% electricity consumption from renewable energy direction by 2030. It should be clarified that the preferred strategy for delivering this target requires supporting large scale renewable energy schemes, local schemes, improving energy efficiency, and/or supporting domestic generation and that this is delivered by a mix of specific technologies. We feel this direction is necessary to better ensure that the planning system can support the delivery of this target whilst ensuring the sustainable use of natural resources.

Marine planning and decarbonisation

We welcome the acknowledgement of the role of marine planning in supporting decarbonisation in Wales. The marine planning process has identified the potential for growth of the marine renewable energy sector, putting in place planning policy to support marine renewable developments and also encourage reductions in emissions of greenhouse gases across all sectors. The first Welsh National Marine Plan provides a high-level framework for decision making and we therefore look to the marine planning process to support the development of more prescriptive policy and actions over time. An immediate priority is the development of additional guidance and evidence to support decision-making on the best areas for deploying different types of renewable technologies in the marine area.

In addition, the plan also supports the development of the offshore oil and gas sector. We have noted in our response to the current Petroleum Extraction Policy consultation that the proposed onshore approach differs to that set out in the draft Welsh National Marine Plan for offshore oil and gas. In time, we would strongly support better alignment of offshore and onshore policy to support the decarbonisation process.

National Development Framework

The NDF's strategic policy direction to support transition to a low carbon economy and decarbonisation focuses on renewable energy deployment is welcomed and supported. We consider that the NDF presents an opportunity to give direction on spatial decisions on the location, layout, and connectivity of development, communities, business and infrastructure that are reflective of the need to improve energy efficiency and reduce resource use, e.g. district heating, smart grids, and supporting and connecting areas of growth with transport infrastructure which focuses on sustainable transport modes. This would involve developing an approach which spatially considers the demand as well as the supply of energy (including electricity, heat and transport), and to ensure consistency with the proposed approach in the consultation draft of PPW, reflective of the energy hierarchy.

We anticipate that the NDF will provide a framework for nationally important energy generation, storage and distribution infrastructure, including grid infrastructure. This should be informed by the SMNR approach to ensure that it directs the right development to right locations.

Transition to a decarbonised energy system

The proposed action to develop regional and local energy planning to address the supply, distribution, and use of energy is strongly supported as it enables the energy system to be tailored to locally available renewable resources and local demand with an understanding of local opportunities and constraints. It would also give the opportunity for more co-operative development of the energy system with potential for integration of contributions from agricultural, commercial, public sector and domestic sectors to maximise use of local resources. There is considerable potential in Wales for use of microgrids that would benefit local energy generation and potentially increase national resilience of energy supply in the face of extreme weather events.

The proposed innovation and commercialisation of new products, processes and services in the energy system is necessary and should be regarded as an ongoing process. It is equally important not to overlook that established technologies that can help us to meet our carbon targets are readily available and actions must be taken now and not delayed pending any future innovation that may or may not happen.

In terms of accelerating the deployment of renewable generation whilst encouraging local ownership, the individual actions set out in the consultation provide a strategic approach but don't really address the fundamentals of how a significant and rapid deployment of renewable technologies will actually be achieved. The FiT showed that considerable change can be achieved if some form of capital funding or revenue stream to make installations viable is available. Total reliance on the market to deliver the conditions that make installations viable without subsidy means there is complete uncertainty as to if and how many schemes may be developed without any control over the time scales of their deployment. The market also fails to internalise many of the wider socio-economic benefits of a low carbon energy system and it is unlikely to do so with the current approach to economics. It would be worth considering investigating the public benefit of distributed, renewable energy installations to develop a system that monetises these benefits and can be used to top up income streams from energy sales to make schemes viable.

Surveys have shown that there is considerable public interest in the installation of battery storage technology but again the cost remains a barrier. Smart Energy technology is already available, and uptake would accelerate further if some form of incentive mechanism were in place. There may however be grid constraints that restrict the potential of battery use on a larger scale in distributed locations, such as farms, where they could otherwise play a role through aggregation in providing grid balancing services.

Transport

Together with replacing fossil-fuel powered vehicles with ULEVs, there is considerable potential to reduce road transport for passengers and freight by transferring mileage onto the existing rail network – this could be considered as a further action. It is important that the change of transport mode is given equal priority as promotion of EVs and Active Travel.

In the consultation hydrogen fuel and references to hydrogen fuel cell buses need to overtly recognise the pre-requisite requirement for a network of dedicated hydrogen fuelling stations to facilitate this element of the transition. It may well be that the lack of an available network rather than the shift in vehicles is the main challenge. Biofuels use is also challenging due to the need to be used in dedicated fuel bunkers which could severely constrain uptake.

In terms of the action around transition to EVs, there is a clear priority on reducing emissions from cars, so we would question if 65% of new vehicle sales to be electric is ambitious enough over the proposed timescale to 2030. The

consultation contains no reference to plug-in hybrids or range extended vehicles and their role in a transition which could be important.

We suggest that a specific target for installation of EV charging infrastructure, particularly in public sector buildings, is required to provide sufficient infrastructure to facilitate ambitions for ultra-low emission vehicles. There needs to be greater quantification of the ambition and who will be targeted to deliver it, e.g. workplace charging is recognised as necessary, framing a requirement around all work places providing EV charging facilities for staff and visitors by 2025. But based on the Carbon Positive project, it is currently feasible to meet delivery of an extensive network of EV charging infrastructure and so this could be delivered potentially well before 2030.

Public Sector

Focussing on building emissions alone has led to the lack of an overarching action on public sector procurement. This is a significant omission considering the UKCCC's recommendation for this sector. NRW's experience through its Carbon Positive Project also supports the prioritisation of an action on public sector procurement - purchased goods and services are the organisation's single biggest source of emissions considering both its direct and indirect emissions impact. Through tackling supply chain emissions, the Welsh public sector can potentially make a greater contribution to decarbonisation than exclusively tackling its own direct emissions.

In reviewing potential procurement related mitigation options for NRW, we identified that developing a reference list of priority carbon criteria to be included in tender documents, targeted at types / groups of contracts, could ensure that carbon is considered in every contract and framework. For example, criteria aimed at promoting a circular economy in contracts involving the purchase of recyclable goods such as workwear or office furnishings. Whilst NRW may look to develop and trial this approach in future, a potential action for Welsh Government could be to develop such a list at the national level for use in all public-sector procurement. This could ensure consistency of approach, avoid duplication of effort between public sector bodies and expedite the use of procurement procedures to drive emissions reductions. The existing Public-Sector Sustainability Risk Assessment (SRA) completed for all purchases over £25,000 in value could be used to help develop such a list. This action could help to deliver on the UKCCC recommendation that "Welsh Government should develop a strategy to ensure that climate change is fully reflected in public procurement". The Dutch Government has a 100% target for inclusion of green criteria in public procurement contracts and has developed a library of environmental criteria for 45 different product groups that can be incorporated into tenders as appropriate. This may be a useful national case study to inform consideration of this suggested action.

As stated in the consultation, NRW are working with Welsh Government to support the development of a method to enable the public sector to monitor and report progress, and therefore agree that this will be central to public sector decarbonisation. NRW's experience of emissions accounting has shown that data requirements for organisational emissions accounting can be considerable and

time consuming and suggest that the time needed to develop baselines and methodologies for accounting should not delay mitigation action. Alongside an action to support public sector emissions reporting, there should arguably be an action to enhance support for public sector delivery. Crucially we suggest a gap analysis of current National Procurement Service Frameworks to simplify the process of procuring low carbon technologies and advisory services for public sector estates e.g. a framework for the procurement of electric vehicles and charging infrastructure. Writing technical specifications for work and securing competent contractors was a challenge in the delivery of our Carbon Positive demonstration projects such as installation of EV charging infrastructure and installation of solar PV panels. Having pre-existing NPS frameworks would have helped overcome a lack of internal expertise on these technologies and reduced the procurement demands.

We agree with the action for public sector buildings to be supplied by renewable electricity and heat, however perhaps this should be a broader ambition recognising the contribution of energy efficiency and renewable energy generation in the public sector. NRW have recently migrated to 100% renewable electricity supply through the NPS and we are aware that providing we have Renewable Energy Guarantees of Origin certification to prove the renewable nature of our supply, we could now report our electricity emissions as zero, potentially disincentivising energy efficiency measures and renewable generation on our estate. However, on the other hand, uptake of renewable energy supply should be recognised so there is a need to consider further the implications of electricity emissions reporting guidelines for the public sector.

We agree with and support the action for the expansion of ULEVs in public sector fleets. Given the scale of ambition for the public sector, i.e. carbon neutrality by 2030, a greater number of actions on transport could be beneficial e.g. around business travel and commuting which are both significant emissions sources for NRW. The consultation document recognises the role of the public sector in leading by example, and to fulfil this role, there are opportunities for some of the actions identified for other sectors to include a sub-action aimed at the public sector e.g. the transport action on increasing cycling and walking journeys.

Forestry and land use

If the objectives outlined for this sector are to be achieved, in particular the aim to increase tree planting (from ca. 500ha/year) to 2000-4000ha/year, then it is essential that this consultation is linked to the *Brexit and our land* consultation, as without clear integration between regulations, policy, incentives and the different areas of 'land-use' this is unlikely to be successful given past experience. It also suggests the need for a fundamental change in our approach to land-use change as currently there is limited scope or agreement on change, which is clearly a blocker to a large increase in woodland creation rates.

It is good to see the focus also on planting large and medium scale woodlands as well as farm woodlands, including commercial woodlands, since these will all meet

UKFS guidelines and may exceed them if supported by the new incentive schemes. However, it is important that regulation, policy and incentives work together to encourage and support the right schemes as currently the average size of woodland creation scheme is very small, and landowners and forest agents frequently cite the regulatory environment as a blocker to large scale commercial woodland, as mentioned in the consultation. The Woodland Opportunities map hosted by Welsh Government is also not sufficient for supporting this sort of woodland creation. The Woodland Opportunities map combines opportunities, constraints and information and is a scoring mechanism as an entry pathway to an oversubscribed grant scheme. It is a decision support tool for a specific purpose and is not a decision-making tool or a general information tool. Therefore, if it is to be used to support wider woodland creation and not just proposals that happen to be high scoring in the Glastir scheme, it needs to be redesigned and improved. It would be good if the Woodland Opportunities map, or any successor, is to be used in this way, for it to recognise the trade-offs implicit in land-use change and the significance in any decision of the relative benefits (in particular carbon) and 'disbenefits' of any proposal in order to support a balanced decision.

The consultation makes the statement that meeting the UK Forestry Standard means that "at least a quarter of the area will be devoted solely to the provision of public goods". This is an oversimplification. The UKFS has guidelines on diversity of the forest management unit that includes: 10% open ground or ground managed for the conservation or enhancement of biodiversity as the prime objective, 10% other species, 5% native broadleaved trees or shrubs. These are for a range of benefits, including climate change mitigation and biodiversity, however it is incorrect to say this is solely for public goods provision as there is nothing preventing this land being commercially managed (for example the 10% other species could, and would normally, be a commercial species) or indeed any statement restricting the use to public goods (i.e. those with no market value that are non-excludable and non-rivalrous). It is also important to note that it is likely that the whole forest will provide some public goods as well as the commercial returns too. For example, recreation and access, biodiversity, carbon sequestration, etc. This is a fundamental principle of sustainable forest management and multiple objectives in forest management that underpins the UK Forest Standard.

We support the inclusion of the Ministerial commitment on peat and suggest extending this ambition to include the more modified peatlands which no longer support semi-natural vegetation, as these emit more carbon per unit area than semi-natural areas. This is essential in order to realise the statement in the consultation concerning increasing "the total area of semi-natural habitats on peat". In the short-term, we would advocate the development of an action plan to support the Ministerial commitment, with clear actions identified for each component of the peatland resource and a commitment to utilise external funding sources more widely than at present. The inclusion of specific measures for peatlands in Area Statements and PSB work plans will also be essential. Pilot projects linked to existing PES initiatives are also needed to demonstrate to private land owners/managers the economic viability of restoring semi-natural peatland habitats in highly modified contexts such as deep-drained improved lowland grassland and afforested peatlands.

Waste sector and decarbonisation

The waste sector both represents a significant contributor to carbon emissions and offers several opportunities for reducing carbon emissions. The principle of the 'Circular Economy' forms the basis for 'Towards Zero Waste', the Waste Strategy for Wales. A circular economy keeps resources in use as long as possible and seeks to recover and regenerate products and materials at the end of their life, rather than making, using and then disposing of them. This results in significant reduction in carbon emissions from manufacturing, as products remain in use for longer, and also offers significant reductions from waste disposal. Crucially, changes in waste policy means waste is no longer simply discarded in landfill. This has resulted in the following:

- Waste remains longer in the management process requiring sorting, treatment and reprocessing. The value of that waste is often set at point of entry into a site not output.
- Costs of management have increased, coupled with limited appropriate destinations for waste.
- Absence of a robust market for secondary outputs and fluctuation in secondary markets alongside higher costs can create an incentive in particular for stockpiling wastes, illegal disposal through burning, dumping or export.

We see that an important part of NRW's role is to ensure practices and operating standards within the waste management industry lead to better management of resources. This in turn then helps drive the 'circular economy' and emission reductions. We also seek to influence and align our regulatory framework in such a way that we seek to support treatment of waste further up the waste hierarchy and remove obstacles to the safe recycling of waste. We also will seek to challenge approaches that drive perverse outcomes such as supporting food waste prevention and reuse over provisions for relaxations for the biowaste treatment sector.

Key areas recognised by NRW to increase waste minimisation and reduce emissions are:

- Maximising resources extraction and value so that more waste is separately collected and going to Materials Recycling Facilities. This will simplify the storage, handling and treatment routes of materials. Source segregation also reduces the contamination of the stream and hence supports easier and cheaper recycling.
- Understanding how waste flows from point of production – to improve our understanding of the flow, by auditing waste from the point it becomes waste through to recovery, recycling and ceasing to be a waste. This will help us identify where wastes leak from the system and are handled outside the regulatory framework – either domestically or for export. Ensuring the right waste is in the right place.
- Assess risk from specific wastes – we can also use this approach to better assess risk from specific waste streams from fires or abandonment of sites – with associated potential cost to the public purse. We can focus on what options there are for recovery and we'll advise Welsh Government on issues such as when markets do not appear to exist, or when wastes are being mis-handled. The combination of intelligence from understanding

waste flows, site specific behaviours, incidents and markets can help identify and flag emerging issues and hence the likelihood of abandonment.

- The need to focus on all waste arising's – policy drivers to date have focused mainly on municipal waste but this is only 16% of the total waste arising's. Greater emphasis, perhaps through additional proposed actions in the LCDP, needs to be placed on targeting sectors that produce other wastes in high volumes e.g. the health sector.

In order to help deliver the low carbon objectives of these various themes, we need to ensure that our regulatory duties are not compromised, and every effort is made to help compliant operators deliver their environmental benefits. Application of NRW's Regulatory Principles provides a framework that supports our aim to be risk based, outcome focused, flexible and support innovation and novel approaches to waste management. Recognising that the current legislative framework may not support some of the work required on waste streams further consideration should be given to the need for other policy drivers.