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# Wales, the journey to net zero: tackling climate mitigation through accelerated infrastructure investment



**By Joe Rossiter**  
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# ARUP

## About the author

Joe Rossiter is the IWA's Interim Co-Director. His work focuses on delivering the IWA's broad portfolio of policy and research, ensuring an impact which helps to create a better Wales for all.

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## About the IWA

We are a think tank and charity, independent of government and political parties.

By bringing together experts from all backgrounds, we conceive ambitious and informed ideas which secure political commitments to improve our democracy and economy.

We provide platforms for debate, opportunities for people to make their voices heard and agenda-setting research. We are funded by our members, our events and training sessions, and supported by trusts, foundations and other funding bodies.

## About Arup

For over 75 years, Arup has been recognised for its vision, talent and tenacity, having been at the forefront of the most ambitious and challenging designs and engineering.

Dedicated to sustainable development, the firm, owned in trust by its members, is a collective of 18,000 designers, advisors and experts working across 140 countries. Founded to be both humane and excellent, the organisation collaborates with their clients and partners using imagination, technology and rigour to shape a better world.

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## Summary

*This paper is based on a roundtable convened in December 2023 by the Institute of Welsh Affairs (IWA) and Arup. It is the first in a series of two delivered in partnership with Arup.*

Through these discussions our aim was to convene key stakeholders in Wales' net zero journey, to put forward evidence-informed recommendations on delivering a timely, cross-sector and socially equitable transition across the economy. In doing so, our intention is to inform the ongoing development of net zero policy and delivery in Wales.

The first roundtable, which informs this paper, brought together 17 key stakeholders in the net zero infrastructure space in Wales (attendees are listed below). The positions set out in this paper are not directly representative of every contributor's views, rather they are an attempt to reflect and conceptualise the key topics of a broader conversation. As such, perspectives and policy positions put forward here are directly attributable to the IWA and no one else. They are, however, directly informed by the interventions of attendees at the roundtable.

The overarching aim of the discussion was to bring together key stakeholders to tackle the challenge of unleashing net zero infrastructure investment in Wales. As noted by many in the room, Welsh Government has, over the past decade, been ambitious in their policy in this area. Yet, delivery of key net zero infrastructure must accelerate as we look to reach Wales' necessary and ambitious target of net zero by 2050. It is notable that this transition must be even quicker in some sectors, such as Welsh Government's target to meet the equivalent of 100% of our annual electricity consumption from renewable electricity by 2035<sup>1</sup>. The establishment of the independent Net Zero 2035 Challenge Group<sup>2</sup>, as part of the Welsh Government's Cooperation Agreement<sup>3</sup> with Plaid Cymru, further highlights the ambition to speed up delivery of net zero.

The roundtable was chaired by IWA Director Auriol Miller and consisted of three hours of substantive discussion on the challenges of delivering infrastructure projects in Wales currently and on unleashing the opportunities ahead. Based on this discussion, this paper makes a number of practical policy recommendations to help address Wales' net zero infrastructure challenge. It is clear, though, that policy on its own is not enough. Adequately equipping all actors to fulfil their role in the transition is vital to enabling effective delivery of the large-scale infrastructure projects ahead of us.

During the day, Arup set out two provocations for attendees. These centred on taking a whole systems view of Wales' net zero journey and on accelerating energy infrastructure specifically. These two distinct discussions will form the jumping off point of this paper.

We stand at a moment of political change: there will be a new Welsh Labour leader by March 2024, a UK General Election at the latest by the end of January 2025, and in 2024 we enter the second half of this Senedd. Our intention is that this paper is a valuable intervention at

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<sup>1</sup> [Welsh Government, 2023. Wales aims to meet 100% of its electricity needs from renewable sources by 2035](#)

<sup>2</sup> [Wales Net Zero Challenge Group](#)

<sup>3</sup> [Welsh Government, 2021. The Co-operation Agreement](#)

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an important moment of political opportunity, as a broad range of actors are sketching out how they can meaningfully contribute to Wales' net zero mission over the vitally important decade ahead.

### **Key recommendations:**

The following 2 key recommendations result from the conversation at the roundtable and an analysis of policy levers and actions available by the IWA as a result. At the end of this report are a list of 10 expanded recommendations (p.16). We have grouped key findings and recommendations together.

#### **1. Supercharge net zero infrastructure delivery through a Welsh Government Cymru Gwrydd reform package**

- a. Welsh Government must co-create a comprehensive vision for Wales' net zero infrastructure needs over the next two decades. This should be a roadmap for delivery.
- b. At the next Senedd, the Welsh Government should ensure closer alignment between economic and energy policy.
- c. Boost public sector capacity and resource to deliver large scale infrastructure projects at the pace required. This should enable consenting, planning and delivery at pace.
- d. Utilise Ministerial Statements and National Policy Statements to enhance private sector confidence in Wales.
- e. Ensure political decisions in approving schemes of key infrastructure reflect Welsh Government goals. If they do not, they should be subject to Senedd scrutiny.
- f. Reinforce the Well-Being of Future Generations Act, ensuring it is used to deliver the scale of change required the Welsh public sector.
- g. Strongly encourage the reallocation of Wales' public sector pension pot towards the net zero mission.

#### **2. Welsh Government should seek powers from Westminster to realise its net zero infrastructure ambitions**

- a. Strongly call for the devolution of the Crown Estate to Wales, as in Scotland.
- b. Seek the devolution of renewable energy project subsidy regimes.
- c. Help establish the mechanisms for a shared net zero strategy shared across all UK nations - underpinned by the Carbon Budget mechanism.

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## Roundtable participants:

<b>Auriol Miller</b>	Director (Chair)	Institute of Welsh Affairs
<b>Joe Rossiter</b>	Policy & External Affairs Manager	Institute of Welsh Affairs
<b>Ben Pritchard</b>	Director and Cardiff Office Leader	Arup
<b>Ann Cousins</b>	Associate Director - Climate and Sustainability	Arup
<b>David Brown</b>	Associate Director - Town Planning	Arup
<b>Nick Tune</b>	Commissioner	National Infrastructure Commission for Wales
<b>Claire McDonald</b>	Deputy Director Economic Policy	Welsh Government
<b>Neil Hemington</b>	Chief Planner	Welsh Government
<b>Guto Owen</b>	Director	Ynni Glân
<b>Ben Burggraaf</b>	Chief Executive Officer	Net Zero Industry Wales
<b>Steven Edwards</b>	Commercial Director	Port of Milford Haven
<b>Rhiannon Hardiman</b>	Change Maker (Nature, Climate Change and Decarbonisation)	Office of the Future Generations Commissioner for Wales
<b>Dr Roisin Willmott</b>	Director of Wales and Northern Ireland and Planning Aid England	Royal Town Planning Institute
<b>Mark Hooper</b>	Special Adviser	Welsh Government
<b>Jonathan Kelley-Edwards</b>	Senior Adviser	Welsh Conservatives Senedd Group

## Background

Like the rest of the UK, Wales is legally obliged to meet a target of net zero by 2050 as part of the Climate Change Act 2008 (2050 Target Amendment). As part of its efforts to hit this target Welsh Government put together Carbon Budgets<sup>4</sup>, each covering a five-year period, which set out how the nation will get to net zero by 2050.

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<sup>4</sup> [Welsh Government, 2021. Net Zero Wales Carbon Budget 2](#)

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To reach such an ambitious target, we require nothing short of a wholesale transformation of our economy, our built environment and the way we live our lives. Such a transition requires buy-in from across the economy, with Welsh, UK, and Local Government each playing a key role in articulating a vision for getting to net zero and delivering it.

Wales has set ambitious policies and targets. The Well-being of Future Generations Act<sup>5</sup> enshrines long-term decision making for public bodies in law. Wales has ambitious targets for reaching 100% of electricity demand to come from renewables by 2035. Welsh Government, in partnership with Plaid Cymru, have established a Net Zero 2035 Challenge Group<sup>6</sup>, its role to produce evidence-informed pathways that highlight how key sectors can reach the stretch target of net zero by 2035. Welsh Government have published key policy documents such as Planning Policy Wales 11th ed<sup>7</sup>, Llwybr Newydd: The Wales Transport Strategy<sup>8</sup> and Future Wales<sup>9</sup>. Welsh Government have also highlighted the importance of tackling the climate emergency by creating - as we called for in 2021 - the Climate Change super Ministry, which amalgamates a number of prior Ministries such as Housing, Transport and Energy<sup>10</sup>. Doing so has highlighted the cross-sector nature of tackling the climate emergency.

Yet, despite its ambitious policies and targets, Welsh Government is failing to meet the scale and pace of change required. The UK Climate Change Committee (UKCCC), the independent body established as part of the Climate Change (2008) Act, has responsibility for advising the UK and its nations on their pathways to net zero by 2050. Their recent reports on emission mitigation<sup>11</sup> and adaptation<sup>12</sup> make for poor reading for Wales. Wales is not on track to meet its second carbon budget, and only met its first largely thanks to the closing of Wales' last coal-fired power station, Aberthaw, in 2019. Few such low-hanging fruit remain. On adapting to climate change, Wales does not fare much better, with the UKCCC Wales report highlighting insufficient progress and limited monitoring on preparing us for a radically altered climate in the decades ahead.

On top of this, climate and net zero policy remains one in which policy levers and investment fall on the so-called *jagged edge*<sup>13</sup> of Wales' wider constitutional settlement with the UK. This is the case for many sectors that require large scale efforts to decarbonise. The power to approve renewable energy projects, for example, is split between UK and Welsh Government. Welsh Government have responsibility for licensing and granting consent for all onshore wind projects and renewable energy projects under 350MW that are developed in Wales in the inshore and offshore regions, alongside the promotion of energy efficiency. UK Government have responsibility for regulating the UK energy industry, including generation, transmission, distribution and supply as well as large scale energy projects over 350MW. This is a case in point for how the devolution settlement is messy and complicated for all involved. Ultimately, all levels of government need to set an aligned vision on reaching net

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<sup>5</sup> [The Well-being of Future Generations \(Wales\) Act](#)

<sup>6</sup> [Net Zero 2035 Challenge Group](#)

<sup>7</sup> [Welsh Government, 2021, Planning Policy Wales 11th ed.](#)

<sup>8</sup> [Welsh Government, 2021, Llwybr Newydd: The Wales Transport Strategy 2021](#)

<sup>9</sup> [Welsh Government, 2021, Future Wales: The National Plan 2040](#)

<sup>10</sup> [Welsh Government, 2021, A stronger, greener, fairer Wales for everyone](#)

<sup>11</sup> [UK Climate Change Committee, 2023, Progress Report: Reducing emissions in Wales](#)

<sup>12</sup> [UK Climate Change Committee, 2023, Adapting to climate change: Progress in Wales](#)

<sup>13</sup> [Independent Commission on the Constitutional Future of Wales, 2023, What is the Jagged Edge?](#)

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zero. In this paper, we are reflective of the different roles of all governments in hitting the 2050 net zero target.

Physical infrastructure, in its widest terms, sits at the heart of Wales' net zero transition. From transport, buildings and housing to energy transition, spatial planning and placemaking, all have delivering infrastructure at their core. Reducing emissions and creating climate resilient places in Wales can only be achieved by targeting infrastructure investment at these challenges.

Indeed, as the National Infrastructure Commission for Wales clearly articulate<sup>14</sup>, the impact of climate change on our communities is already perceptible today. In recent years, the new climate reality has been clear to see. In just one example, flooding has been<sup>15</sup> getting worse, bringing the need to ensure that our communities are flood resilient much further up the policy agenda. With a capital city at severe risk from sea level rise<sup>16</sup>, these arguments are particularly pertinent to Senedd Members in our parliament overlooking Cardiff Bay. The need to create infrastructure which is not only net zero, but is equipped to be resilient for a climate disrupted future is clear. They are two sides of the same infrastructure coin.

Net zero infrastructure is a large and pressing challenge for Wales. It is one that requires the mobilising of a number of actors: government, business, communities and people. This is also a transformatory moment, which comes with more economic opportunities than it does challenges if empowered by the appropriate vision and direction of travel from government.

Below, we break down our roundtable discussion into two elements: taking a whole systems view to Wales' net zero challenge and accelerating infrastructure investment, with a particular focus on energy infrastructure.

### **Net Zero - A Whole Systems View**

The challenge and opportunity of reaching net zero is a complex and multifaceted one, touching on every part of our economy and everyday life. In policy terms this encompasses transport, industry, buildings, energy and economy to name but a few.

We stand at a moment of profound and transformational change. In such moments it is crucial that the scale of the challenge is met by the scale of the solution. The climate crisis will impact every element of life in Wales: solutions must be cross-cutting, leveraging change right across our economy.

We must, then, take a whole systems approach. This means identifying the multiple components within a system and ensuring that we account for the links, relationships and interdependencies between them all.

Only by taking this approach can we meet the scale of the challenge required.

When taking this whole system approach, it is important to acknowledge that, whilst the net zero transition will necessarily bring multiple challenges, it is also a substantial opportunity to improve the socio-economic outcomes of people across Wales.

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<sup>14</sup> [National Infrastructure Commission for Wales. 2022. Annual Report 2021/22](#)

<sup>15</sup> [Friends of the Earth. 2023. Is flooding in Wales getting worse?](#)

<sup>16</sup> [2050 Climate Change City Index](#)

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There are also substantial benefits of the transition in terms of enabling a more just economic system. For example, the transition to an energy system driven by renewables opens up the opportunity for emerging models of ownership of energy generation. Community ownership, local and shared ownership, Community Benefit Funds, local energy cooperatives all bring substantial benefits for communities from a more geographically dispersed energy system. Such a system would enable communities to retain the wealth created from renewable energy schemes, contributing to increasing wealth across communities in Wales.

At the roundtable, stakeholders considered that the Well-being of Future Generations Act provided a useful framing device for taking this broader whole systems view. Their view was that the Act is useful to private, public and third sector alike in planning their organisation's role in meeting net zero. As one example, Wales and West Utilities, in their sustainability strategy<sup>17</sup>, map their plans against the Act and the wider UN Sustainable Development Goals. Or, for the public sector, the National Infrastructure Commission for Wales' Annual Report<sup>18</sup> also maps their long term outcomes to the Act. The Act has a key role to play in providing the framing for organisations' activities against net zero, taking a longer-term approach to all of their work. Yet it is clear that some felt that there is much more that organisations across the board could do to use the Act more effectively.

When taking a whole systems approach there is a dual need to mitigate carbon emissions and also to adapt our communities for the realities of climate change. More disrupted and unpredictable weather patterns are likely to provide a number of challenges for communities across Wales. Heightened sea levels, flooding, more persistent heatwaves and cold snaps, all will have a direct impact on our key infrastructure. As the UKCCC highlights, Wales is currently not measuring or acting at the pace needed to prepare our infrastructure for these changes. As we plan what comes next for Wales' infrastructure, climate resilience is key. The National Infrastructure Commission's work in this area, extending our collective gaze to ensure that infrastructure is focused on the needs of 100 years from now, is a useful approach for a broader range of stakeholders too.

Nature and nature-based solutions to emissions reduction and climate adaptation also need to play a part in discussions regarding Wales' infrastructure of the future. The State of Nature Wales 2023 Report<sup>19</sup> makes clear the severe threat that wildlife and nature face. It highlights that 18 percent of species in Wales are at risk, and that there has been an average 20 per cent fall in the abundance of species and a 42 per cent fall in flora since 1970. Infrastructure has to play its role in abating nature loss, protecting the environment for current and future generations.

A key element in the roundtable discussion focused on the role of all levels of government in setting the direction for the net zero transition. A number of participants highlighted how Wales lacks an overarching action plan to support its net zero delivery. The answers to key questions such as 'Is Wales to be a net exporter of energy?' remain unclear. These are key principles which will shape the transition. Equally, some participants highlighted how this lack of direction leads to uncertainty for a number of delivery partners. A plan for net zero

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<sup>17</sup> [Wales and West Utilities, 2023, Sustainability Strategy](#)

<sup>18</sup> [National Infrastructure Commission for Wales, 2022, Annual Report 2021/22](#)

<sup>19</sup> [State of Nature Partnership, 2023, State of Nature Wales 2023](#)



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should clearly articulate who needs to do what, and by when. It should describe a route map of where we need to get to and by when. Importantly, such an approach should highlight not only the activities of Welsh Government and the public sector, but should also encompass how private and third sector activities will fit into the picture, acknowledging these sectors as equally important delivery partners. Such a route map should be co-created with private sector delivery partners. Government can't do it all on its own, but what it should do is: effectively set the direction, providing certainty of policy support whilst leaving space for innovation and agility in delivery.

More broadly speaking, working in a context which requires the buy-in of multiple sectors for transformational change necessarily requires the involvement of a number of stakeholders, and levels of government. This is especially so given Wales' constitutional arrangements with different levels of government responsible for delivering different elements of the net zero pathway, and the private sector being key delivery partners in them all. The approach taken by the Welsh Government Social Partnership and Public Procurement (2023)<sup>20</sup> Act could be instructive here in how to engage multiple stakeholders with decision making processes. The co-creation of a shared vision for net zero would therefore be a valuable approach.

The constitutional set up of Wales and its devolution settlement inherently set the conditions for the net zero transition. This will affect how Wales aims to hit net zero and who has responsibility and oversight for what. As the UKCCC Wales progress reports usefully highlight, many of the levers that will enable Wales to hit net zero by 2050 are reserved to Westminster. A collaborative relationship between the two governments is vitally important over the next decade. However, work by the Institute for Government<sup>21</sup> has made clear that inter-ministerial meetings between Welsh and UK Ministers are sporadic at best in the climate and net zero space. There is little information as to their efficacy. Whatever the different approaches of the respective governments at both ends of the M4, an open, collaborative partnership based on shared values and achieving a shared mission for the betterment of their shared constituents' lives will be critically important. Importantly, for the private sector, receiving the same consistency of message from both governments is essential in a policy area and investment climate in which powers, finance and responsibility are shared.

Many of the key sectors that require transition, including key infrastructure such as energy and transport, are those in which Wales is part of a wider UK network. The need for intergovernmental relations to be guiding the transition is important as much politically, in terms of governance, as tangibly, in the infrastructure which builds our communities now and in the future. We cannot therefore take an insular and inward-looking approach to these challenges. Taking a whole systems approach is the only response.

However, it is not just Welsh Government's relationship with the UK Government that is vital for delivering net zero, but also Welsh Government's (and others') relationship with regions and local authorities in Wales. Again, a shared vision in communities and regions across Wales, one that ties into a Wales-wide plan for net zero infrastructure is important, to coalesce a diffuse set of actors on a shared mission. Doing so requires providing long-term

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<sup>20</sup> [Welsh Government, 2023, Social Partnership and Public Procurement \(2023\) Act](#)

<sup>21</sup> [Institute for Government, 2022, Intergovernmental relations](#)

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certainty on the direction of travel and prioritisation of actions, investment and policy. Providing a vision for what Wales aims to deliver by when, across the whole planning and infrastructure space, is essential not just for local authorities, but for all delivery partners. Participants stated that whilst Wales has positive policy ambitions, Team Wales is slow to deliver. Yet delivering the net zero transition must be done at pace. A shared vision which can act to create halo effects of infrastructure projects can support the development of wider economic and social benefits for communities. Without this comprehensive shared vision, we will continue to deliver at a slower pace. Engaging with communities and shaping a shared vision at every level will be vital for bringing communities on board and creating community consent and involvement in the future development of their areas.

It is important also to state that in many areas Wales does not have the legal powers or finances to fund the net zero transition to the scale and pace required. Indeed, as highlighted above, many of the levers through which Wales will hit net zero lie somewhere between UK and Welsh Government. Wales must therefore ‘do more with less’ in terms of exercising its powers to accelerate decarbonisation across its economy. What is certainly the case is that unless there is a vision and plan for hitting net zero which is shared across both governments then they - and Team Wales more broadly - will fail to meet our obligations.

Roundtable participants were supportive of the decision by the Welsh Government to establish a Climate Change super Ministry at the start of this Senedd in 2021<sup>22</sup>. The IWA had called for this at the time<sup>23</sup>. This decision is an example of a whole systems approach to tackling the climate crisis. It was, however, highlighted that the close alignment between the activities sitting under the Economy portfolio and the Climate super Ministry was vital for driving forward future success. Taking a whole systems approach means recognising that social, environmental and economic justice are all sides of the same coin. This closer alignment between economic and energy policy is important as we look forward to a decade of accelerated transition and change ahead in both areas.

As established by the IWA’s paper *Fiscal Firepower*<sup>24</sup>, despite having fairly strong powers and a budget of over £20 billion, Wales is severely limited in its financial ability to kickstart major projects that could transform its economy. The vast majority of Wales’ budget comes from the UK Government Block Grant and is allocated to the provision of public service delivery, particularly health services. Beyond that, Wales has a limited ability to raise additional finance to start major projects. This has a distinct and negative impact when it comes to financing the net zero transition. Wales is thus more reliant on utilising financial support from the private sector in order to deliver its transition. This is expressly the case when it comes to investment in capital projects, and in particular in large scale infrastructure projects. To meet the scale of change required, Welsh Government must therefore do two things: manage to achieve a collaborative and productive relationship with UK Government when it comes to the allocation of finance to enable large-scale projects, and provide the market conditions which make Wales a supportive and stable climate for the private sector to deliver projects that align with Welsh Government aims.

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<sup>22</sup> [Welsh Government, 2021. A stronger, fairer, greener Wales for everyone](#)

<sup>23</sup> [IWA, 2021, IWA Economic Priorities for the Next Welsh Government](#)

<sup>24</sup> [Institute of Welsh Affairs, 2022. Fiscal Firepower: Effective policy-making in Wales](#)

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Taking a whole systems approach also means wider discussions on how the journey to net zero can help to create the conditions for a sustainable and just economy. The Future Generations Commissioner has made it one of his priorities to help to transition Wales to an economy which puts people and planet first<sup>25</sup> which means better alignment between what our economy is delivering and what our nation's goals and values are. To enable this, the net zero transition must be seen to help Wales to deliver on this mission to create an economy which works to increase the wellbeing of its people rather than merely creating economic outputs. The Well-Being of Future Generations Act helps with articulating the vision of what is important, but more needs to be done to align investment, policy and action with that vision. With the historical outflow of energy, wealth and resources from Wales, this new industrial revolution must help us all to not repeat the mistakes of the past, making sure that investment in Wales is investment *into* Wales.

Making the link between our net zero infrastructure transition and the rest of the economy is equally important. For example, how are renewables being used to power industrial development in communities across Wales, not merely creating energy to export? This is a means through which we can add value to energy generated in Wales.

Skills and jobs remain both an enabler and inhibitor of Wales net zero transition. When taking a whole systems approach, equipping the labour market in Wales for the green economic future is a tough one. There are a number of skills gaps and the retraining of people from 'brown' jobs to 'green' jobs is not being undertaken at anywhere near the speed required. Without the right mix of skills, Wales will be unable to deliver on its net zero commitment. Failing to deliver a widespread green skills investment programme, one that is aligned to place-based opportunities and our national policy priorities, is hamstringing the transition before it even substantially gets under way. Embedding skills to enable opportunities that could harness the best of emerging technologies such as Artificial Intelligence is also important, especially considering how new technologies can create value across the public and private sector and substantially contribute to enhanced productivity, a perennial challenge both across Wales and the rest of the UK.

Taking a whole systems approach also must consider the substantial challenge presented by behaviour change in Wales, or the lack thereof. It is critical that people are not only brought along on the net zero journey, but are active participants in shaping what it looks and feels like for them. So many of the challenges that Wales faces in decarbonising its economy are reliant on behaviour change across all areas of life. With the rollout of the 20mph policy<sup>26</sup> (called for in an IWA paper in 2017<sup>27</sup>) proving controversial, despite appearing as a manifesto commitment before its routine passage through the legislative process, it is unclear how the public communication and involvement of net zero (or net-zero adjacent as the 20mph policy is) is being undertaken. The scale of change needed across all areas of life in Wales is not being sufficiently clearly articulated currently, and with the pace of change only increasing over the coming years, a longer-term vision for our shared mission must be established, and soon. Such storytelling inherently takes political leadership and courage across all levels of government and can't only sit with the Future Generations Commissioner. Without this courage, resistance from communities is inevitable and will remain a challenge

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<sup>25</sup> [Future Generations Commissioner for Wales, 2023. A Well-being Economy](#)

<sup>26</sup> [Welsh Government, 2023, Introducing default 20mph speed limits](#)

<sup>27</sup> [IWA, 2017. Re-energising Wales: Decarbonising Transport in Wales](#)

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unless people are sold on the positive aspects of the net zero transition and the value it delivers to people, in its broadest terms.

The roundtable discussion on taking a whole systems approach to tackling the climate emergency and delivering future-proof net zero infrastructure was a fascinating and multifaceted one. It took into account intergovernmental relations, economics, behaviour change, governance and much more. Given this discussion and the evaluation provided above, there is little argument that taking a whole systems approach provides the only means through which Wales can deliver a net zero transition that truly delivers positive impact for people and places. Without taking into account the complexity of the multiple systems change endeavours we need to see over the coming decades, we will fail to meet our climate ambitions. Stakeholders in this space need to be cognisant of the scale of the challenge facing us, but equally aware of the benefits and opportunities of the transition and, crucially, able to communicate them in a way that cuts through. Taking a whole systems approach enables us to embrace complexity, and to face the challenges and opportunities head on.

### **Accelerating Infrastructure Investment**

Delivering a consistent and ambitious pipeline of net zero infrastructure projects will be vital to enabling Wales to meet its net zero commitments. In recent years, such projects have been in short supply. As we are not on track to meet the nation's climate obligations, accelerating net zero infrastructure investment will be critical to getting delivery on track.

But with powers sitting at different levels of government, what is needed to develop a pipeline of infrastructure projects which will enable us to get to net zero by 2050 at the latest?

In 2023, the Infrastructure (Wales) Bill<sup>28</sup> was laid before the Senedd. The Bill will reform the consenting process for infrastructure consenting, establishing a unified process for infrastructure projects that are 'significant infrastructure projects' or SIPs<sup>29</sup>. The Bill aims to simplify the current regime and reduce the number of authorisations required for a large infrastructure project. Importantly, the Bill includes various types of infrastructure, such as that related to energy, transport and water. At the roundtable, participants reflected that the Bill in theory takes the right approach, making infrastructure projects easier to consent and deliver. Participants hoped that this approach would help with overcoming issues with a lack of anticipatory investment. The Bill provides more transparency and consistency in decision-making, attempting to provide a 'one-stop shop' for permissions and decision making for infrastructure projects. The Bill is essential for the delivery of vital infrastructure in Wales which could enable net zero by 2050.

Energy infrastructure projects are a vital element of the new Bill and the wider need to decarbonise Wales' economy. Given this, roundtable participants discussed at length the means to accelerate energy infrastructure more specifically.

Wales has two key inhibitors and enablers for the effective transformation of the nation's energy infrastructure: the grid and consenting of renewables projects. If governments can work together to crack these two significant issues, then this would enable an accelerated

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<sup>28</sup> [Welsh Government, Infrastructure \(Wales\) Bill 2023](#)

<sup>29</sup> [Senedd Research, Infrastructure \(Wales\) Bill, Bill Summary](#)

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energy transformation to be delivered, primarily (although not exclusively) by the private sector.

However, there are other issues associated with the administration and consenting of infrastructure projects. A key issue was identified in relation to the lack of skills and resources in Welsh Government to deal with the number of applications for energy infrastructure developments. Welsh Government is understaffed and under-skilled to meet current demands, let alone those we know will be required to deliver at the increased pace required by our net zero ambitions. More investment in upskilling and adequately resourcing Welsh Government to meet the private sector's desire for pace is essential.

In its recent publication 'Future Energy Wales: The Critical Role of Welsh Wind Power,' RenewableUK Cymru highlight how there has been no improvement<sup>30</sup> since Welsh Government took over powers for consenting for energy projects of national significance. In the seven years since this regime was introduced, only one offshore wind farm has been approved. RenewableUK Cymru note that 'results show that 41% of applications' through this regime 'have been refused, with no onshore projects above 50MW granted planning permission'. The current consenting arrangements offer an illustration of failure to meet the speed of the energy transition challenge. This is a significant concern as the report highlights a potential pipeline of 9GW of potential in wind projects in Wales (made up of current capacity and pipeline of projects under construction, consented, in planning or under development). Importantly, 59 percent of this pipeline is made up of offshore wind capacity.

The RenewableUK Cymru report also highlights the shortcomings of the current makeup of Wales' consenting regime for infrastructure projects. Since Wales took more control of its consenting regime in 2016, 22 applications under planning legislation have been through the so-called Developments of National Significance process (DNS). Of these 22 applications, 41% were refused, as set out above. And of the nine refusals, 44% were refused by the Welsh Government Minister responsible against the Inspector's recommendation and only six of the applications met the specified statutory timeframe of 10 months. The majority of said applications were for renewable energy projects. Given this context, is it any wonder why private sector investment is uncertain in Wales? This is despite Welsh Government's stated intention to accelerate our energy sector transition and meet an equivalent of Wales' electricity usage exclusively by renewables by 2035. Its action does not reflect the rhetoric. If projects have been refused due to other policy conditions, such as biodiversity or ecological considerations, such decisions are matters of debate rather than a yes/no decision. Without publicly acknowledging reasoning for overruling projects, private sector developers' confidence in Wales is eroded, and therefore slowing the pace of energy transition.

As it currently stands, planning and consenting is therefore acting to cool private sector confidence in Wales as a market. Indeed, participants were clear that private sector confidence in Wales was poor in comparison to England, with the process there being seen as quicker and with fewer Ministerial over rulings. As discussed previously, with Wales financially dependent to a large extent on the private sector to deliver large-scale infrastructure projects, this is a worrying signal to be sending. Roundtable participants stated that there is considerable private investment available and investors looking for opportunities to deliver infrastructure projects, but this will only materialise if industry has the confidence to invest in Wales. Governments at all levels therefore have a key role to play

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<sup>30</sup> [Renewable UK Cymru. 2023. Future Energy Wales: The critical role of Welsh wind power](#)

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in creating favourable conditions for private investment in renewables specifically, and for net zero infrastructure more broadly.

Participants also highlighted that there are other ways to make the money already in the system work better for people in Wales. Welsh Government has set up a renewable energy developer Trydan Gwyrdd Cymru<sup>31</sup>, in so doing looking to generate on the public estate. But beyond that there remain other levers to pull. One potential pot of money put forward by a roundtable participant as being potentially transformative if put to good use was public sector pension funds in Wales. The IWA has looked into this before as a standalone paper in our *Re-energising Wales* series<sup>32</sup>. In Wales, £22.5 billion is invested by the Wales Pension Partnership on behalf of eight local authority pension funds<sup>33</sup>. According to a 2023 report by Size of Wales, at least 10 percent of this money ‘is financing clients/holdings with a high risk of being linked to deforestation’<sup>34</sup>. In 2017 we called for Wales’ pension funds to divest from fossil fuels, catalysing the Future Generations Commissioner to ask pension funds to set divestment targets. What if this investment was proactively put to good use aligned with our shared mission, for instance to drive forward Wales net zero infrastructure as well as renewables? It would certainly contribute to accelerating infrastructure investment, and deliver greater public value to people across Wales.

There is a broader need for all stakeholders to consider whether Wales requires further devolution of powers over renewable energy subsidy setting to create optimum market conditions to attract private investment. Importantly, such subsidy schemes should derive real terms value to communities in Wales from large scale infrastructure investment. Wales cannot repeat the mistakes of past energy generations, where wealth and value was extracted from communities. These discussions take place at a moment where Wales is considering its constitutional future, as part of the Independent Commission on the Constitutional Future of Wales<sup>35</sup> set up under the aegis of the Cooperation Agreement. Energy is one of the key pressure points that the Commission reported on in January 2024<sup>36</sup>.

Roundtable participants agreed on one particular area, and this was in favour of the devolution of the Crown Estates to Wales. Given the importance of floating offshore wind for Wales’ renewable energy future, not having control over these substantial assets could prove costly. Again, we have already articulated this clearly in our *Re-energising Wales paper*<sup>37</sup> and are pleased with the growing consensus around the need for this to happen.

There were reflections at the roundtable of how the Well-being of Future Generations Act and the Commissioner’s Office could be working harder to engender change at pace. The Act highlights the need to take a generational approach to issues such as planning and investment. Yet when planning infrastructure investment, we do not have to plan for another *single* generation, but *generations* ahead. All stakeholders need to make a step change in how we plan long term infrastructure investment, including Welsh Government.

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<sup>31</sup> [Welsh Government, 2023, Written Statement: Update on Trydan Gwyrdd Cymru](#)

<sup>32</sup> [IWA, 2019, Re-energising Wales](#)

<sup>33</sup> [Wales Pension Partnership, 2023, Sub-Funds](#)

<sup>34</sup> [Size of Wales and Global Canopy, 2023, Saving for the Future: A report into Wales’ public pension exposure to global deforestation](#)

<sup>35</sup> [The Independent Commission on the Constitutional Future of Wales](#)

<sup>36</sup> [The Independent Commission on the Constitutional Future of Wales, 2024, Final Report](#)

<sup>37</sup> [IWA, 2019, Re-energising Wales](#)

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However, some of the very mechanisms used for attracting investment into projects inherently run against those values set out in the Well-being of Future Generations Act. The UK Contracts for Difference process<sup>38</sup> essentially leads the private sector, who submit applications for projects, to compete with each other. This leads to a warped sense of how best to deliver value for the public, leading to evaluations and projects that are based on delivering at lowest cost rather than greatest long-term value. Could the Act help to reframe this process in Wales by realigning our sense of ‘value’ to one that matches its vision for delivering long-term well-being for future generations? It is certainly one that would work within the public sector remit of the Act itself.

Projects like Mentor Môn’s Hydrogen Island project<sup>39</sup> with Toyota and EDF is an example of the private sector in Wales working with global players while also shaping projects on their own terms. Gaining international investment in their project to further explore the opportunities for hydrogen infrastructure on Ynys Môn has substantial opportunities for the community going forward, with Menter Môn clearly highlighting the need to retain economic and social benefits in North Wales.

It was also clear from the roundtable that, from an energy perspective, Wales must aim to deliver a mixed network. Participants were frank that there is not one solution that is suitable everywhere. Local energy projects, for example, may work in certain contexts but not others. The solutions for urban and rural settlements are inherently different. Devolving decision making, including through enhanced community dialogue, will be essential for delivering energy infrastructure which fits the different needs of communities and different places across the nation.

A couple of roundtable participants put forward Ministerial Statements and National Policy Statements as examples of mechanisms not used in Wales which are seen to have an impact at UK Government level. Ministerial Statements and National Policy Statements, such as the 2023 UK Government statement on Renewable Energy Infrastructure<sup>40</sup>, can help to provide clarity and certainty to the private sector. Providing direction through policy statements and Ministerial statements can provide a direction of travel for those external to government, enabling them to tailor their work within clearly defined government priorities and parameters. At the roundtable some participants considered that such statements could play a useful part in strengthening private sector confidence in Wales when it comes to opportunities to deliver net zero infrastructure projects. Aligning applications to Welsh Government goals and values should enable for stronger applications that provide more value to communities in Wales and should act to minimise Ministerial overrules that can prevent key infrastructure being approved.

Linked to the first discussion on taking a whole systems approach to the net zero transition, participants were clear that people in Wales must feel the benefit. It is critical that people in Wales gain tangibly from investment in net zero infrastructure projects. For example, renewable energy infrastructure should lead to cheaper, more abundant and local energy, alleviating the pressures that all too many in Wales currently face when it comes to paying their energy bills. At the moment large scale infrastructure projects, especially those for

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<sup>38</sup> [UK Government, 2023. Contracts for Difference](#)

<sup>39</sup> [Mentor Môn, 2019, Hydrogen Island Stage 1 Report](#)

<sup>40</sup> [UK Government, 2023. National Policy Statement for Renewable Energy Infrastructure \(EN-3\)](#)

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renewable energy, are communicated as a cost that communities have to bear. For this narrative to shift, people in Wales need to feel the benefits of the change beyond ‘just’ tackling the climate emergency. This links into discussions around designing a socially and economically just transition.

Finally, roundtable participants agreed on how language and the communication of the transition will play a vital role in fostering confidence in delivery. How we communicate the benefits and requirements for net zero infrastructure is vital in bringing local communities along on the journey to net zero with the private and public sector. All too often, infrastructure investment means high costs and little benefit to communities. But we must find a better way of communicating the scale of the challenge and opportunities of the rollout of net zero infrastructure across the nation over the coming decades. With the pace and scale of change only set to increase, we need to start painting a much clearer, brighter picture of what the Wales of the future can look like, in a way which aligns with the ambitions set out in the Well-being of Future Generations Act. Poetry alongside the prose, carrots alongside the sticks, and - why not - with TV dramas<sup>41</sup> providing cut through alongside reasoned and evidenced-informed policy papers.

## Conclusion

As a small nation, Wales needs to max out the benefits of being one. The relatively small ecosystem of key stakeholders should enable so-called ‘Team Wales’ to be agile and speedily consultative in its approach to reaching net zero. We know that being small also comes with costs - Wales can’t afford to ‘do it all’. This means there are key advantages to be had by picking priority areas and sticking to them. We have said this before. Providing clarity to all comes with advantages, not least in ensuring that private sector investment can buy into a wider economy with long term confidence.

The reality is that Wales, and the UK more broadly, are already in a global race for the leadership of the green economy. As the IPPR’s 2023 paper on the green economy highlighted, ‘the transition to net zero is the economic opportunity of the 21st century’. We need to align our environmental gains with economic ones<sup>42</sup>. With the European Union and the United States taking forward ambitious targeted strategies to invest in the net zero transition across their respective economies, the race for global leadership is well underway. Whilst Wales cannot compete with this scale of investment, we can chart a vision for a future that delivers jobs, investment and opportunity.

And as we are in a global race for the green economy, so must we meet this challenge with a global race mentality. This means being honest about whether we are using everything we can to make change, pulling every lever available to us. Are we doing this today? No. Can we do so over the next decade? Absolutely. Accelerating the delivery of net zero infrastructure sits at the heart of this ambitious green economy.

Participants at the roundtable highlighted that floating offshore wind remains a key economic opportunity for Wales as we have already highlighted in *Re-energising Wales*. An

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<sup>41</sup> [Politico, 2024, How a TV drama blew up British politics](#)

<sup>42</sup> [IPPR, 2023, From Missed Chances to Green Advances](#)



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opportunity to get ahead in the race for delivering floating offshore wind comes with a host of potential economic benefits that outstrip the economic output of the projects themselves.

There are international examples of other small nations ramping up net zero infrastructure investment and reaping the economic benefits. One roundtable participant noted the example of Finland who, in response to the Russia-Ukraine conflict, increased its wind power by 75% in 2023<sup>43</sup>. In doing so they brought €2.9 billion in investments to the country. On top of that almost half of Finland's wind power is domestically owned, retaining economic benefit which are spread across its municipalities. This shows that a small nation can attract investment, deliver at pace, and bring economic benefit whilst delivering its net zero infrastructure.

In Wales, the Well-being of Future Generations Act sets the vision for enshrining long-term decision making. Providing a shared and unified long-term vision of what Wales needs for the future is vital in ensuring that all stakeholders can deliver at pace and deliver value to people in Wales. All activities to reinvigorate our economy must have social and economic justice at their heart, aiming to raise living standards and opportunity across Wales.

Because the costs of not future proofing our infrastructure will weigh heavily. Indeed, standing still and not taking action costs people in Wales every day. Every day we don't act to accelerate the transition we need also puts us further behind in the global race for the green economy. These are heavy costs to push on to future generations and inherently contradict the long-term thinking set out in the Well-being of Future Generations Act.

Broadly speaking, roundtable participants highlighted the need for Welsh Government to set out a far clearer shared vision for the green economy. Such a vision needs to be comprehensive, setting out the direction of travel for infrastructure investment, and a vision with which all stakeholders can connect and engage. The current gaps between businesses, the key deliverers of infrastructure, and people across Wales should be bridged by this overall vision. Such a vision should be a single unifying roadmap that describes who should deliver what and by when. Not piecemeal policy announcements, or just goals and targets, but backed up by action and investment opportunities. Communicating this vision clearly would act to close the delivery gap and help to develop private sector confidence in Wales as a welcoming market for net zero infrastructure development.

## **Full Recommendations**

### **1. Welsh Government must co-create a comprehensive vision for Wales' net zero infrastructure needs over the next two decades. This should be a roadmap for delivery**

Wales has lots of overlapping policy and goals - too many of them. We vitally need a simple yet comprehensive roadmap which lays out what our infrastructure needs are over the coming decade. Such a plan should be co-created with stakeholders and put forward key roles for private and public partners alike to play in delivering infrastructure.

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<sup>43</sup> [Euronews. 2023. Finland: Wind power increased by 75% last year, boosting energy security and climate goals](#)

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**2. At the next Senedd, the Welsh Government should ensure closer alignment between economic and energy policy**

Taking a whole systems view of net zero means a closer alignment between the Economy Ministry in Welsh Government and the Climate super Ministry. So many of the decisions which will enable or inhibit the journey to net zero go directly through Wales' economic missions. This is especially the case for energy and infrastructure. Importantly, this means reallocating resources and capacity to achieving the economic opportunities open to Wales as part of a fair and just transition.

**3. Boost public sector capacity and resource to deliver large scale infrastructure projects at the pace required. consenting and planning**

The public sector in Wales lacks the resources, expertise and funding to effectively manage the massive expansion of net zero energy infrastructure projects required to meet its net zero commitments. Welsh Government must increase and boost capacity in this regard, particularly in relation to unblocking consenting regimes and the planning process.

**4. Welsh Government should utilise Ministerial Statements and National Policy Statements to enhance private sector confidence in Wales.**

Welsh Government should use all levers at their disposal to communicate clearly, consistently and regularly how and where private sector investment can help deliver on their net zero goals.

**5. Political decisions in approving schemes should reflect Welsh Government goals - and be subject to Senedd scrutiny**

As highlighted by RenewableUK Cymru's Wind Energy in Wales report, the consenting regime for infrastructure projects is unfit for purpose, with Welsh Government Ministers refusing applications (especially for wind energy). Refusing applications directly inhibits Wales meeting its net zero goals, goals the government are committed to. Ministerial overrule is being overused and is undermining confidence in the Welsh market. Ministers' decisions need to reflect their policy platform and goals. Without good reason, Ministers should not be able to overrule Inspector recommendations at the end of the application process, without Senedd scrutiny.

**6. Equip the Well-Being of Future Generation Act to deliver change across the Welsh public sector**

The Act is a key differentiator from competitor nations and sends a clear global signal as to what Welsh values are. But many decisions taken seem to be contrary to its aim, values and goals. Embedding the Act effectively across the public sector could have a transformative effect on our ability to reach our net zero goal. Whilst some progress has been made in relation to communicating its intent and potential, Welsh Government should consider any means through which the Act can be strengthened.

**7. Reallocate public sector pension funds in Wales to enable the nation to meet its national net zero infrastructure needs**

We call again for the reallocation of Wales' pension funds towards Wales' net zero transition, to be proactively invested in renewable energy generation that retains wealth in Welsh communities, and in other net zero infrastructure investments in line with the National Infrastructure Commission for Wales' priorities.

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## **8. Devolve the Crown Estate to Wales**

Offshore wind off Wales' coasts represents a key part of the renewable energy pipeline over the coming decade and a key economic opportunity for Wales. The Crown Estate owns and manages marine (and significant land) assets in Wales. To enable Wales to fully capitalise on our offshore wind potential, amongst other economic opportunities, management of the Crown Estate should be devolved to Crown Estate Wales and managed on behalf of Welsh Government Ministers, as in Scotland it is managed by Crown Estate Scotland on behalf of Scottish Government.

## **9. Welsh Government should seek the devolution of subsidy regimes for renewable energy projects**

Wales needs to be able to set attractive market conditions for renewable energy projects. Welsh Government should explore the possibility of the devolution of net zero infrastructure subsidy regimes within the capability of the Internal Markets Act.

## **10. Establish a vision for net zero shared across all UK nations**

Intergovernmental relations between UK and Welsh Government are at breaking point, especially when it comes to the direction of travel on net zero. Reaching net zero requires both buy in and aligned action from UK and Welsh Governments. This is bigger than politics. We need a shared vision to enable us to reach the pace and delivery of change needed across the economy. Those looking to deliver infrastructure investments need to be sure of government long term support. This vision could be achieved through aligning legally binding Carbon Budget mechanisms.

**Ends**

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