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Future Energy Wales

Dyfodol Ynni Cymru

The Critical Role Of Welsh Wind Power

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Foreword

‘Plug the gap’ is the clear warning from RenewableUK Cymru’s latest snapshot into the Welsh wind sector. Now that the Welsh Government has formally adopted a target of meeting 100% of electricity consumption from renewables by 2035, we need a bold, laser sharp focus on a clear delivery plan to achieve that ambition.

Power generation from Wales’ diverse renewable sources is at the heart of our net zero ambitions, with the potential to deliver 9GW from wind power. This is made up of current capacity and the pipeline of projects under construction, consented, in planning or under development. Wales is set to become increasingly reliant on wind energy as the backbone behind our energy transition away from fossil fuels.

Yet the evidence shows we are not working hard enough to nurture the growth of that critical backbone, and as a result, risk falling short of Wales’ power generation demand. For years the constraints of poor grid connectivity and a sluggish and under-resourced planning system have hampered progress and deterred developers from pursuing the ambitious wind energy projects Wales so desperately needs to succeed. Unless we address these issues our potential capacity risks stagnating as a pipedream rather than a pipeline.

Rhagair

‘Llenwch y bwlch’ yw’r rhybudd clir gan ymchwil ddiweddaraf RenewableUK Cymru am sector ynni gwynt Cymru. Nawr bod Llywodraeth Cymru wedi datgan targed ffurfiol i 100% o ddefnydd trydan ddod o ffynonellau adnewyddadwy erbyn 2035, mae angen ffocws clir ar gynllun i gyflawni’r uchelgais hwn.

Mae cynhyrchu pŵer o ffynonellau adnewyddadwy amrywiol Cymru wrth wraidd ein huchelgeisiau sero net, gyda’r potensial i gyrraedd 9GW o bŵer gwynt. Mae hyn yn cynnwys capasiti presennol a’r piblinell o brosiectau sy’n cael eu hadeiladu, wedi eu cydsynio, yn y broses gynllunio neu mewn datblygiad. Mae Cymru ar fin dibynnu’n gynyddol ar ynni gwynt fel craidd ein trawsnewidiad ynni o danwyddau ffosil.

Er hyn, mae’r dystiolaeth yn dangos nad ydym yn gweithio’n ddigon caled i feithrin y ffynonellau craidd hollbwysig hyn, ac o ganlyniad, mae perygl y byddwn yn methu â diwallu anghenion cynhyrchu pŵer Cymru. Ers blynyddoedd, mae cyfyngiadau o gysylltedd grid gwael a system gynllunio araf heb ddigon o adnoddau wedi rhwystro cynnydd ac wedi atal datblygwyr rhag canlyn prosiectau ynni gwynt uchelgeisiol mae Cymru ei gwir hangen i lwyddo. Oni bai ein bod yn mynd i’r afael â’r materion hyn, mae perygl bydd ein capasiti posib yn aros fel breuddwyd yn hytrach na phiblinell all gael ei gwireddu.

Jess Hooper

Director, RenewableUK Cymru

Cyfarwyddwr, RenewableUK Cymru

Summary

The bulk of the Welsh Government's estimated electricity demand for Wales will come from wind power; with solar, tidal, hydro and other sources making up the remainder. The estimated electricity demand for Wales in 2035 has been set at 29TWh in the Welsh Government's recent consultation document. However, when compared to the individual renewable technology projections for each of National Grid ESO's Future Energy Scenarios, the 29TWh renewable electricity generation target is most closely aligned with the 'Falling Short' scenario. For this reason, the target for 29TWh in 2035 should be considered a minimum target.

Renewable UK Cymru's collated data suggests that onshore wind could deliver in excess of 3GW of clean power by 2035. Coupled with the predicted capacity from fixed offshore wind in North Wales and floating offshore wind in the Celtic Sea, Wales has the potential to generate 9GW of wind power, producing 27.5TWh of electricity a year to meet Welsh demand by 2035 if the right enabling actions are taken. It has never been clearer that a diverse and resilient energy mix is the right solution, with wind contributing the lion's share and cheapest electrons.

Yet there is an enormous distance to cover. More than three quarters of this capacity has not yet been built, and from our research of public domain projects, more than half are in the early stages of development, and yet to enter the planning system. **This requires a giant leap in our deployment rate, from shy of 2GW of operational capacity today to 9GW in just over a decade.**

Planning and consenting remains a significant barrier to development in Wales and this report highlights serious concerns over the lack of progress to date.

Since the Welsh Government took over the consenting reins for all energy projects of national significance the situation has not markedly improved. In seven years since the Developments of National Significance (DNS) regime was introduced, only one onshore wind farm at Upper Ogmore in South East Wales has been approved. Results show that 41% of applications[1] through the DNS regime have been refused, with no onshore projects above 50MW granted planning permission.

By comparison, Awel y Môr (576 MW), an offshore wind farm off the North Wales coast was consented under the UK's Development Consent Order process[2] in 2023 in 16 months, within the statutory period. Similarly, Wales' first floating offshore wind farm, Erebus (100MW), was consented in 15 months under a Marine License by Welsh Ministers. With the significant number of potential energy projects on the horizon, **the need for sufficiently resourced consenting bodies is more critical than ever.**

It is evident from the data that the Welsh Government appears to be relying heavily on offshore wind, particularly the Celtic Sea, to deliver the bulk of its energy generation capacity by 2035. Yet onshore wind is the cheapest and most shovel-ready technology we have. It is important that governments do not limit the growth of any viable renewable technology, or overly rely on one technology specifically to meet their targets – recognising the respective contribution each can play. It is also worth recognising the differing timescales by which various renewable technologies can be brought on-line and start making a contribution to Wales' power mix – with onshore wind and solar projects generally able to deploy in a quicker timeframe than, for example, floating wind in the Celtic Sea – which isn't expected to come online at significant scale until the mid to late 2030s at the earliest.

Wales has a fantastic offering for renewables. It is also encouraging to see a more positive environment for development emerging in recent years, with the introduction of Future Wales: the National Plan 2040 in 2021 - a planning framework which places an onus on decision-makers and the industry to deliver renewable energy targets. It is hoped improvements will continue with the introduction of the Infrastructure (Wales) Bill in 2025, but there is a lot of ground to cover if we are to shift from fossil fuels and power the nation with clean electricity by 2035. The priority for policymakers now must be on **speeding up delivery** for our climate and energy security to provide the clean jobs and cheaper energy both present and future generations deserve.

To kickstart the journey to net zero, we need more than just supportive rhetoric in Wales. The Welsh Government must work with industry to overcome significant barriers around consenting and grid constraints to have any hope of meeting the 2035 target. We require unwavering policies and decisive actions. It's time for policymakers to create a stable environment with timely and consistent decisions. We need leadership with a clear vision, collaborating with industry to stimulate private sector investment. This approach will drive more renewable energy projects, benefiting our communities, economy, and environment through nature recovery programmes. Let's power up our future with actions, not just intentions.

[1] DNS planning applications determined under the Town & Country Planning Act 1990. Excludes marine licences and Harbour Revision Orders.

[2] Since its first decision in 2011, by August 2022, the NSIP regime established by the Planning Act 2008 has considered 113 major transport, energy, and wastewater infrastructure projects. 95% of projects have been approved.

Crynodeb

Bydd y mwyafrif o ddefnydd trydan Cymru, a amcangyfrifwyd gan Lywodraeth Cymru, yn dod o bŵer ynni gwynt; gyda solar, llanw, hydro a ffynonellau eraill yn bodloni'r gweddill. Yn nogfen ymgynghoriad diweddar Llywodraeth Cymru, amcangyfrifir y bydd galw Cymru am drydan yn 2035 oddeutu 29TWh. Fodd bynnag, o'i gymharu â'r amcanestyniadau technolegau adnewyddadwy unigol ar gyfer pob un o Senarios Ynni'r Dyfodol National Grid ESO, mae'r targed cynhyrchu trydan adnewyddadwy 29TWh yn cyd-fynd agosaf â'r senario 'Falling Short'. Am y rheswm hwn, dylai'r targed ar gyfer cyrraedd 29TWh erbyn 2035 fod yn darged minimwm.

Mae data wedi'u casglu gan RenewableUK Cymru yn awgrymu y gallai ynni gwynt ar y tir gynhyrchu dros 3GW o bŵer glân erbyn 2035. Gyda'r capasiti a ddisgwylir o wynt ar y môr yng Ngogledd Cymru a ynni gwynt arnofiol yn y Môr Celtaidd, mae gan Cymru y potensial i gynhyrchu 9GW o bŵer ynni gwynt a 27.5TWh o drydan y flwyddyn i gwrdd â galw Cymru erbyn 2035 - os cymerir y camau galluogi cywir. Nid yw erioed wedi bod yn fwy clir mai cymysgedd ynni amrywiol a gwydn yw'r ateb cywir, gyda ynni gwynt yn cyfrannu'r rhan fwyaf a'r electronau rhataf.

Er hynny, mae llawer o waith i'w wneud. Mae dros dri chwarter o'r capasiti hwn heb ei adeiladu eto, ac o'n hymchwil o brosiectau cyhoeddus, mae dros hanner ohonynt yn y camau cynnar o ddatblygu ac heb ddechrau'r broses gynllunio eto. Mae hyn yn galw am gam enfawr yn ein cyfradd datblygu o dan 2GW o gapasiti sy'n weithredol heddiw i 9GW mewn ychydig dros ddegawd.

Mae cynllunio a chaniatáu yn parhau i fod yn rhwystr sylweddol i ddatblygiad yng Nghymru ac mae'r adroddiad hwn yn amlygu pryderon difrifol ynghylch y diffyg cynnydd hyd yma.

Ers i Lywodraeth Cymru gymryd y cyfrifoldeb caniatáu cynllunio ar gyfer holl brosiectau ynni o arwyddocâd cenedlaethol, nid yw'r sefyllfa wedi gwella'n sylweddol. Yn y saith mlynedd ers cyflwyno'r broses datblygiad o arwyddocâd cenedlaethol (DNS), dim ond un fferm wynt ar y tir yn Ogwr Uchaf yn Ne-Ddwyrain Cymru sydd wedi ei gymeradwyo. Mae'r canlyniadau'n dangos bod 41% o geisiadau[1] drwy'r broses DNS wedi'u gwrthod, heb unrhyw brosiectau ar y tir dros 50MW wedi cael eu cymeradwyo.

I gymharu, cafodd fferm wynt ar y môr, Awel y Môr (576MW) oddi ar arfordir Gogledd Cymru, ei chymeradwyo o dan broses Gorchymyn Caniatâd Datblygu y DU[2] yn 2023, mewn 16 mis, o fewn y cyfnod statudol. Yn yr un modd, cafodd fferm wynt arnofiol cyntaf Cymru, Erebus (100MW), ei chymeradwyo mewn 15 mis o dan Drwydded Forol gan Weinidogion Cymru. Gyda'r nifer sylweddol o brosiectau ynni posibl ar y gorwel, mae'r angen am gyrff cynllunio a chydsynio ag adnoddau digonol yn bwysicach nag erioed.

Mae'n amlwg o'r data ei bod yn ymddangos bod Llywodraeth Cymru yn dibynnu'n sylweddol ar ynni gwynt ar y môr, yn enwedig yn y Môr Celtaidd, i ddarparu'r rhan fwyaf o'r capasiti ynni adnewyddadwy erbyn 2035. Er hyn, ynni gwynt ar y tir yw'r dechnoleg rhataf a mwyaf parod i'w hadeiladu sydd gennym. Mae'n bwysig nad yw'r Llywodraeth(au) yn cyfyngu ar dwf unrhyw dechnoleg adnewyddadwy hyfyw, nac yn dibynnu'n ormodol ar un dechnoleg yn benodol i gyrraedd ei thargedau – gan gydnabod y cyfraniad gall pob un ei wneud. Mae hefyd yn werth cydnabod yr amserlenni gwahanol ar gyfer cyflwyno technolegau adnewyddadwy amrywiol ar-lein i ddechrau gwneud cyfraniad at gymysgedd pŵer Cymru – gyda phrosiectau gwynt ar y tir a solar yn gyffredinol yn gallu cael eu datblygu a'u hadeiladu yn gyflymach nag, er enghraifft, ynni gwynt arnofiol yn y Môr Celtaidd – na ddisgwylir i ddod ar-lein ar raddfa sylweddol tan ganol i ddiwedd y 2030au.

Mae gan Gymru arlwy gwych ar gyfer ynni adnewyddadwy. Mae hefyd yn galonogol gweld amgylchedd mwy cadarnhaol ar gyfer datblygu yn ystod y blynyddoedd diwethaf, gyda chyflwyniad Cymru'r Dyfodol: y Cynllun Cenedlaethol 2040 yn 2021 – fframwaith cynllunio sy'n rhoi'r cyfrifoldeb ar y rhai sy'n gwneud penderfyniadau a diwydiant i gyflawni targedau ynni adnewyddadwy. Y gobaith yw y bydd gwelliannau'n parhau gyda chyflwyniad Bil Seilwaith (Cymru) yn 2025, ond mae llawer i'w wneud os ydym am symud o ddefnyddio tanwyddau ffosil a phweru ein gwlad gyda thrydan glân erbyn 2035. Y flaenoriaeth nawr i lunwyr polisi yw cyflymu gweithredu ar gyfer ein diogelwch hinsawdd ac ynni er mwyn darparu'r swyddi glân a'r ynni rhatach y mae cenedlaethau'r presennol a'r dyfodol yn eu haeddu.

I roi hwb i'r daith i sero net, mae angen mwy na naratif gefnogol yma yng Nghymru. Rhaid i Lywodraeth Cymru weithio gyda'r diwydiant i oresgyn rhwystrau sylweddol o ran caniatád cynllunio a chyfngiadau grid er mwyn bod unrhyw obaith o gyrraedd y targed yn 2035. Mae angen polisïau diwyro a chamau gweithredu pendant arnom. Mae'n amser i lunwyr polisi greu amgylchedd sefydlog gyda phenderfyniadau amserol a chyson. Mae angen arweiniad gyda gweledigaeth glir, gan gydweithio â diwydiant i ysgogi buddsoddiad gan y sector preifat. Bydd y dull hwn yn ysgogi mwy o brosiectau ynni adnewyddadwy, a fydd o fudd i'n cymunedau, ein heconomi a'n hamgylchedd drwy raglenni adfer natur. Gadewch i ni bweru ein dyfodol gyda gweithredoedd, nid bwriadau yn unig.

[1] Ceisiadau cynllunio DNS y penderfynwyd arnynt o dan Ddeddf Cynllunio Gwlad a Thref 1990. Nid yw'n cynnwys trwyddedau morol a Gorchmynion Diwygio Harbwr.

[2] Ers y penderfyniad cyntaf yn 2011, erbyn Awst 2022, mae'r gyfundrefn NSIP a sefydlwyd gan Ddeddf Cynllunio 2008 wedi ystyried 113 o brosiectau seilwaith trafnidiaeth, ynni a dŵr gwastraff mawr. Mae 95% o brosiectau wedi'u cymeradwyo.

Key Recommendations

Recommendation	Justification	Lead
Create a **clear roadmap** and action plan for renewable energy and grid development to 2050. Include incremental stage gates to monitor progress of delivery and timescales.	An ambitious programme of delivery is needed to tackle barriers and create an attractive investment environment. **Requires:** resource allocation and supportive enabling policies.	Welsh Government in collaboration with industry. Targeted working groups bringing together industry and relevant Welsh Government representatives (covering: economy, regulation and legislation, environment, community, supply chain and skills).
Adoption of **Infrastructure Policy Statements** to provide clear policy direction for applications under the Infrastructure (Wales) Bill.	Welsh Government must adopt **decisive policy positions** to ensure decision making in response to planning applications are robust and rooted in the policy basis provided.	Welsh Government
Clearly defined statutory consenting timelines. Fund a **national pool of dedicated expertise** to provide advice and guidance to decision-makers, statutory consultees and developers.	To enable timely decision making of project planning applications.	Welsh Government
Prioritise **strategic anticipatory grid upgrades** across Wales.	Onshore and offshore renewable energy projects are being held back by grid connection delays, a lack of infrastructure, increased costs and uncertainty about connection locations and dates across Wales.	Welsh Government, UK Government, Distribution Network Operators, National Grid and Ofgem. Whilst some grid matters are reserved, the Welsh Government should continue to use its convening power to drive focus and force action on this issue for Wales.
Continue to **support port investment and funding plans** to facilitate supply chain engagement and delivery.	Drive the opportunity for investment and job creation, maximising just transition benefits. The value of this investment will be two-fold, delivering onshore wind benefits to the local region in the intervening period before the scale of the offshore opportunity is realised.	Welsh Government
Accelerate delivery of the Net Zero Skills Action Plan.	To ensure Wales is adequately prepared for the skills opportunity on the horizon. **Requires:** Investment into a programme for the successful implementation of desired outputs. Identification of skill requirements now will drive greater awareness in key areas. These skills will become apparent through onshore wind before the full-scale of the offshore opportunity is realised.	Welsh Government

Disclaimer: Forecasts presented in this document are derived from RenewableUK's EnergyPulse model, which uses publicly available information and historical trends to produce projections. Projections do not represent a RenewableUK position and should be used only as guides to possible outcomes. RenewableUK takes no responsibility for losses incurred by the use of this information.

Section 1

Wales Wind Energy Portfolio

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Wales Wind Energy Portfolio

Fig 1.1

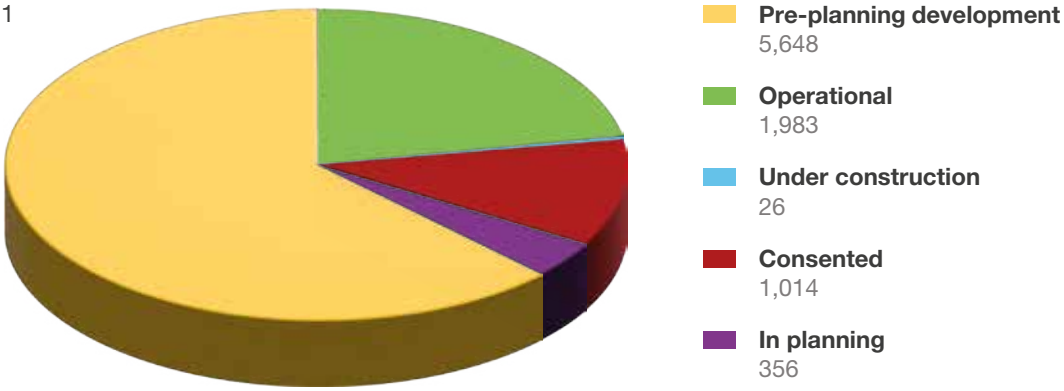
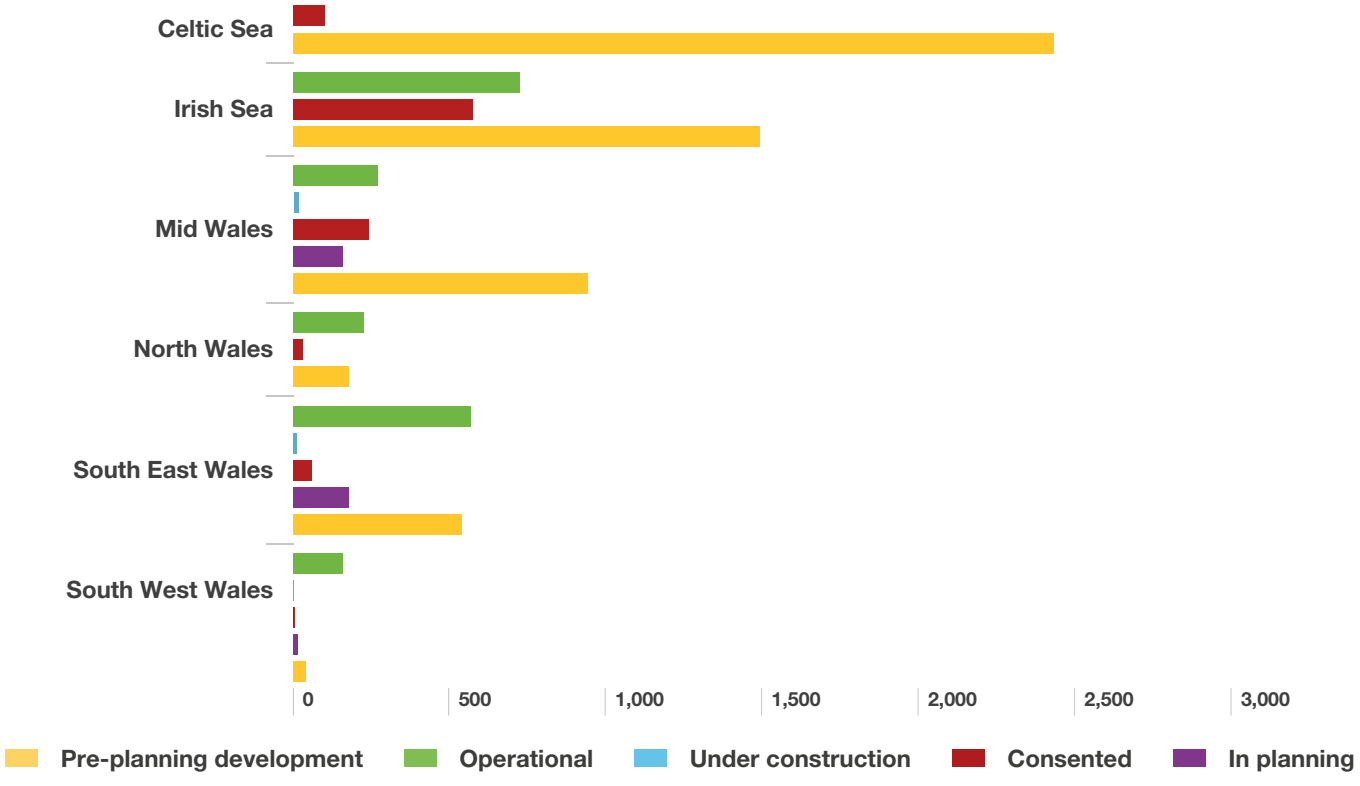


Fig 1.2



The overall potential pipeline for Welsh wind projects (operational, under construction, consented in planning or under development) is currently 9GW (9027MW, Fig 1.1). The onshore wind portfolio pipeline has increased by 23% from just under 3GW in September 2022 to 3.7GW to date, with renewed development interest bringing new projects into the public domain.

Looking at projects by location and development status, offshore wind makes up 59% of the Welsh pipeline, with the largest portfolio of projects in the Irish Sea. Much of this pipeline is in the very early stages of development, with Celtic Sea projects representing the largest yet to be built portion of the Welsh portfolio (Fig 1.2). This includes an estimated 2.25GW of potential capacity in Welsh territorial waters, expected to be awarded a lease in The Crown Estate's Offshore Wind Leasing Round 5 in 2024.

Fig 1.2 also demonstrates the largest potential capacity for onshore wind is in Mid and South East Wales.

Fig 1.3

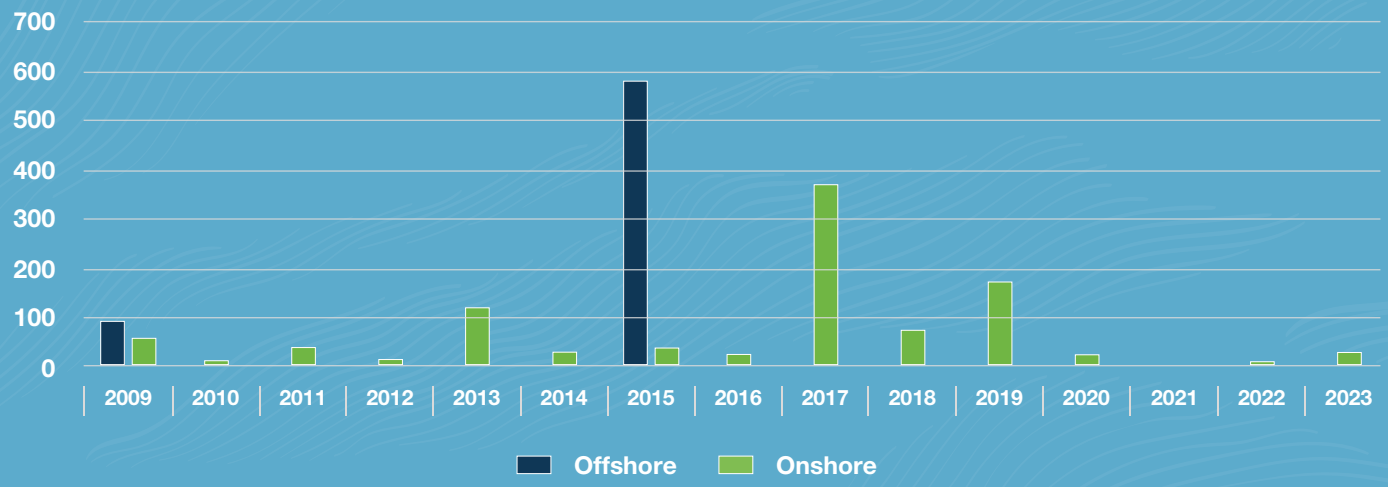


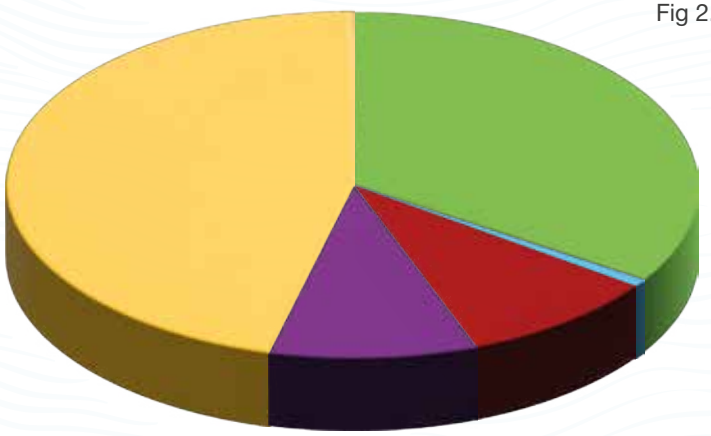
Figure 1.3 illustrates that commissioning of Welsh wind energy is low and is set to remain so given that, according to our research, only 26MW of onshore wind capacity across various projects is currently classed as under construction at the time of writing this report. No offshore wind capacity is currently under construction.

A detailed breakdown of the current portfolio for onshore wind and fixed and floating offshore wind is provided in the following sections.

Onshore Wind

- **Welsh projects tracked in EnergyPulse:** **280**
- **Operational capacity:** **1,257 MW**
- **Pipeline capacity:** **2,418 MW**
- **Potential total capacity:** **3,675 MW**

Fig 2.1



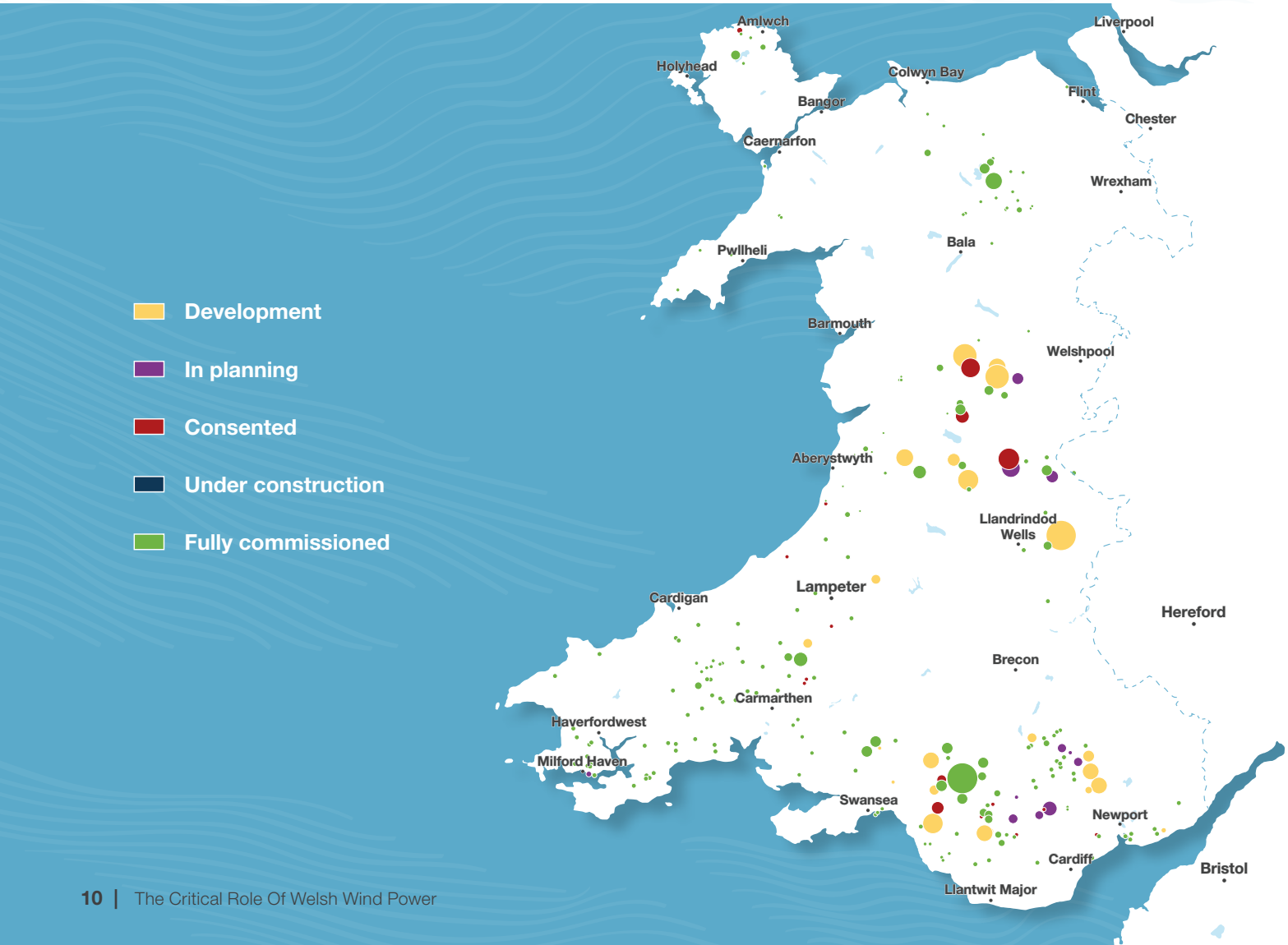
Pre-planning development 1,698

Under construction 26

Operational 1,257

Consented 338

In planning 356

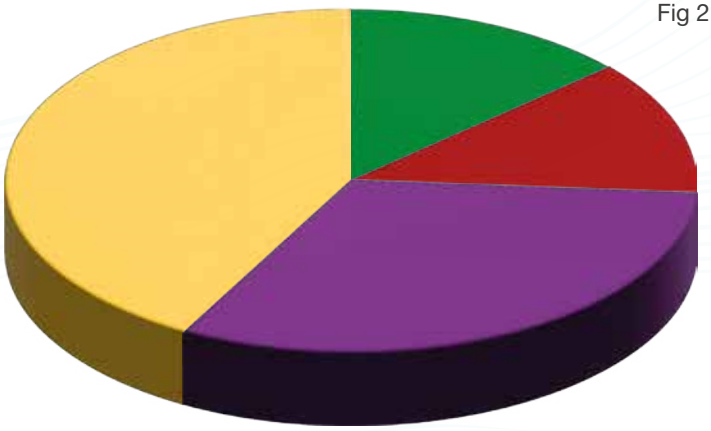


Offshore Wind

- **Welsh projects tracked in EnergyPulse:** **10**
- **Operational capacity:** **726 MW**
- **Pipeline capacity:** **4,626 MW**
- **Potential total capacity:** **5,352 MW**

As can be seen in Fig 2.2, more than a third of the potential total capacity for offshore wind is still in its early stages (under development) and comes from the predicted Celtic Sea pipeline in Welsh territorial waters.

Fig 2.2



Development (pre-leasing) 2,250

Fully commissioned 726

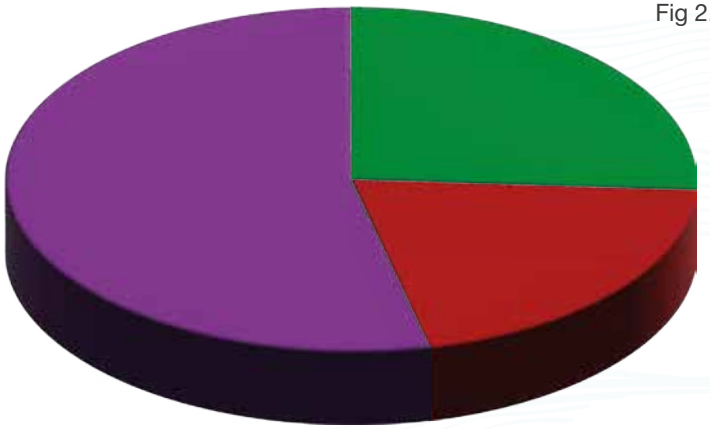
CfD eligible 676

Site exclusivity agreed 1700

Offshore Wind - Fixed

- **Welsh projects tracked in EnergyPulse:** **5**
- **Operational capacity:** **726 MW**
- **Pipeline capacity:** **2,076 MW**
- **Potential total capacity:** **2,802 MW**

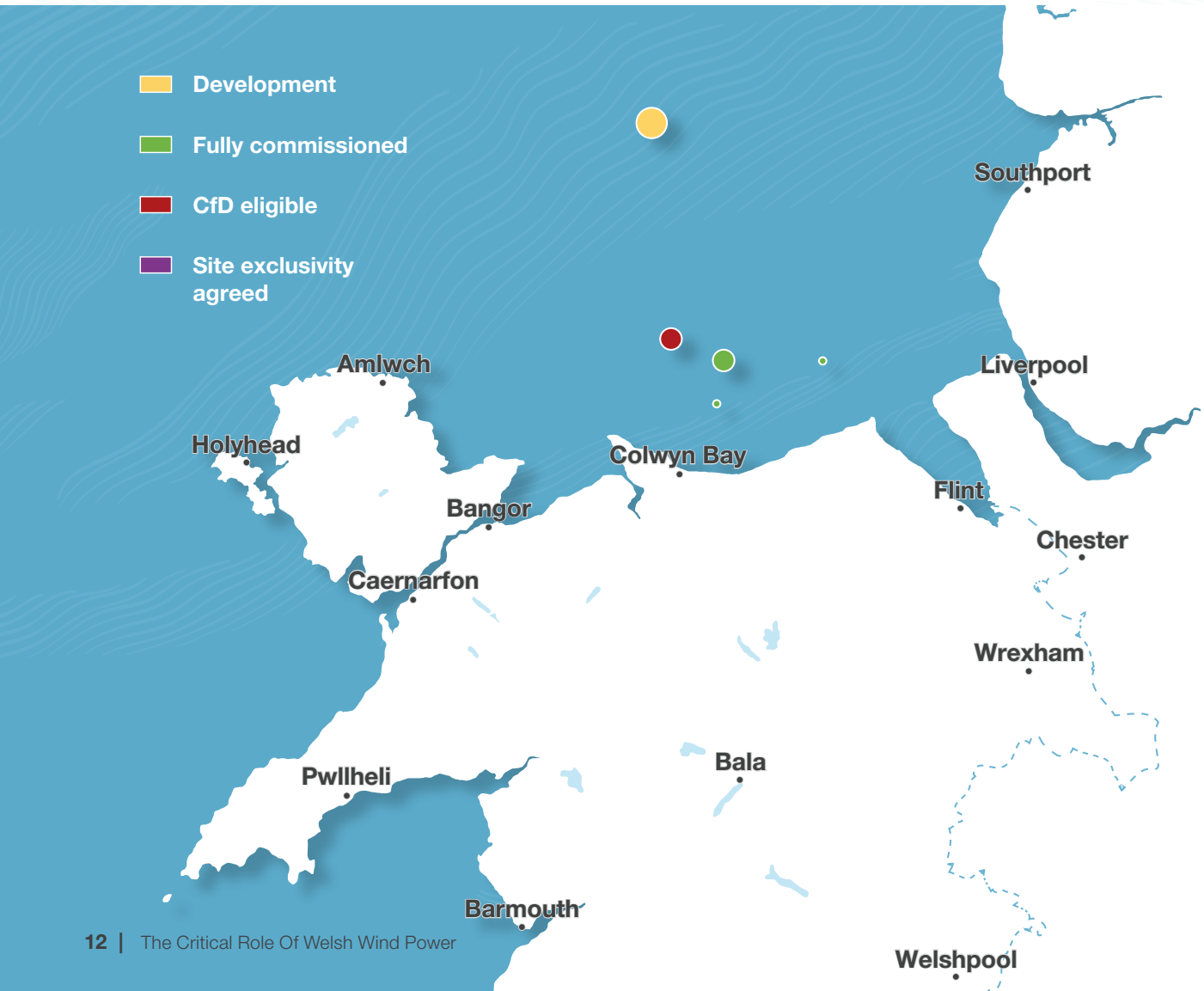
Fig 2.3



Site exclusivity agreed
1,500

CfD eligible
576

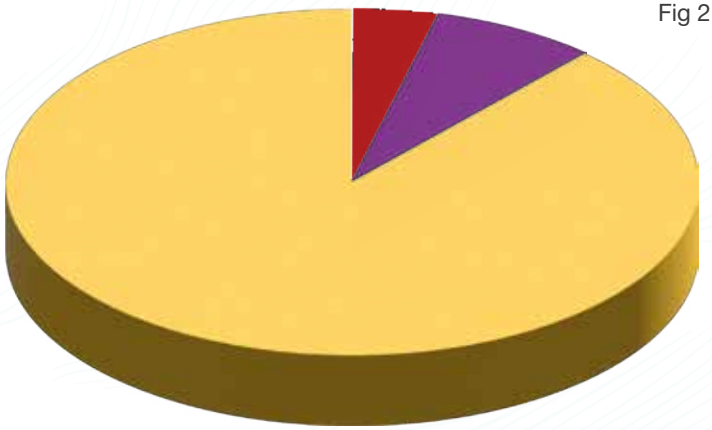
Fully commissioned
726



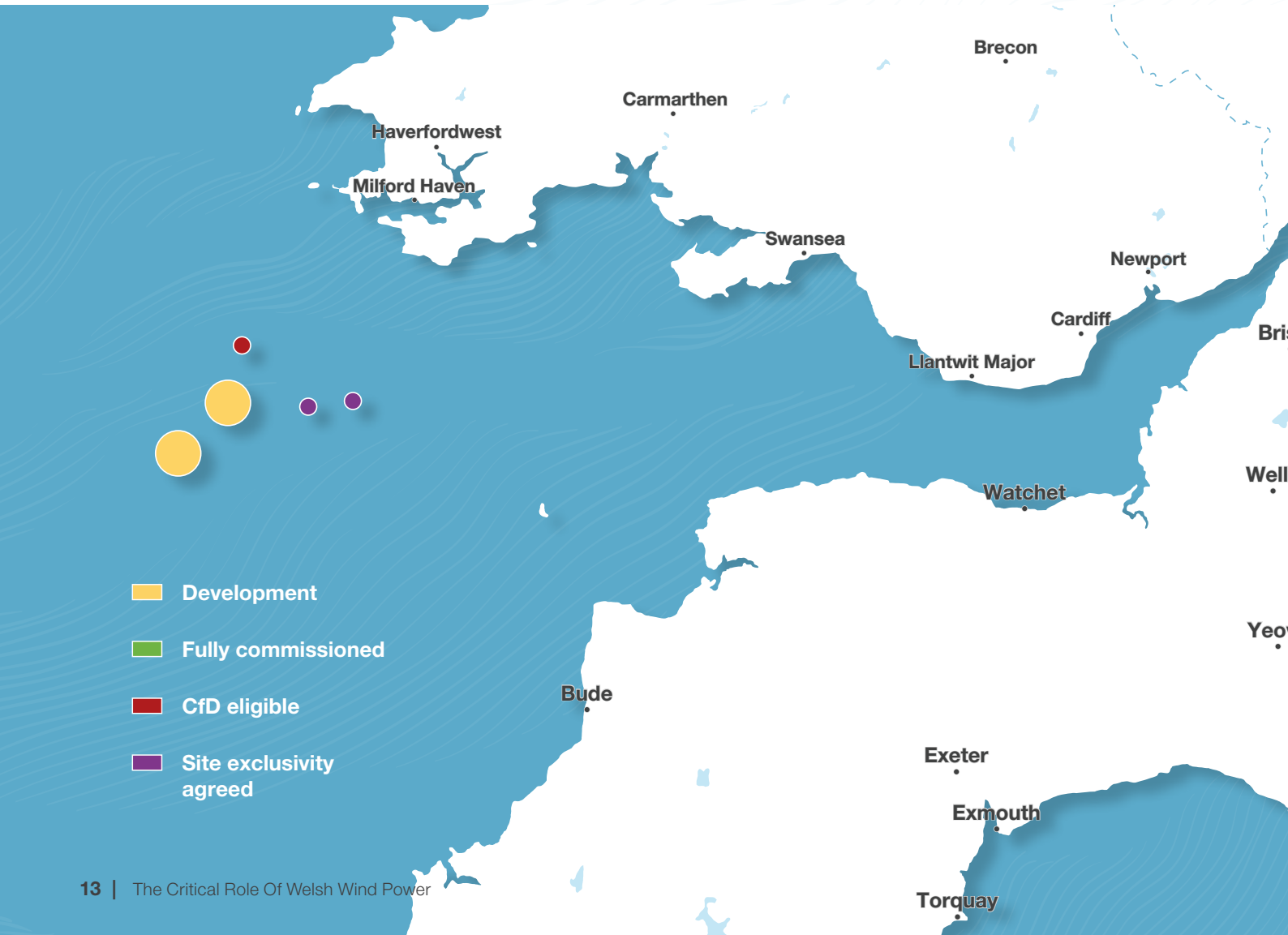
Offshore Wind - Floating

- **Welsh projects tracked in EnergyPulse:** 5
- **Operational capacity:** 0 MW
- **Pipeline capacity:** 2,550 MW
- **Potential total capacity:** 2,550 MW

Fig 2.4



- **Development (pre-leasing)** 2,250
- **Site exclusivity agreed** 200
- **CfD eligible** 100



Section 2

New Build Project Pipeline

Section 2

New Build Project Pipeline

Our forecast shows an increase in commissioning activity of onshore and offshore wind projects between 2025 and 2029, followed by an acceleration of deployment post 2032.

The 9GW potential pipeline of Welsh projects is forecast to be deployed by 2035, with offshore wind overtaking onshore wind in terms of MW capacity in 2034 (Fig 3.2). However, this forecast scenario is very optimistic and assumes that the entire pipeline will be consented and built. There is significant risk of attrition, auction failure, and further lost capacity due to decommissioning of older sites without repowering.

This report presents data highlighting key areas of constraint, and there are a number of critical policy and delivery areas which urgently need to be addressed in order for the 9GW potential to be up and running by 2035:

- **Grid connectivity and capacity** - Many onshore wind projects are currently being given post-2035 connection dates by National Grid. Infrastructure also needs to be put in place for the required offshore wind connections.
- **Planning delays and decisions** – Our report underscores a historic lack of applications coming forward and long delays in the planning system. **Only 2 large-scale onshore wind farm projects have been through the DNS regime since 2016. One was approved and took nearly two years.** This is primarily attributed to three key factors: a shortage of skilled personnel within the regulatory body, inconsistent decision-making and a lack of clear and strategic supportive policy (although the introduction of Future Wales has reduced this).
- **Parameters and conditions of clean power auctions, such as Contracts for Difference** – the current race to the lowest price of energy, set against a backdrop of inflation and economic uncertainty, is undermining investor confidence, forcing developers to cut costs and limiting opportunities for the local, home-grown supply chain.

Fig 3.2

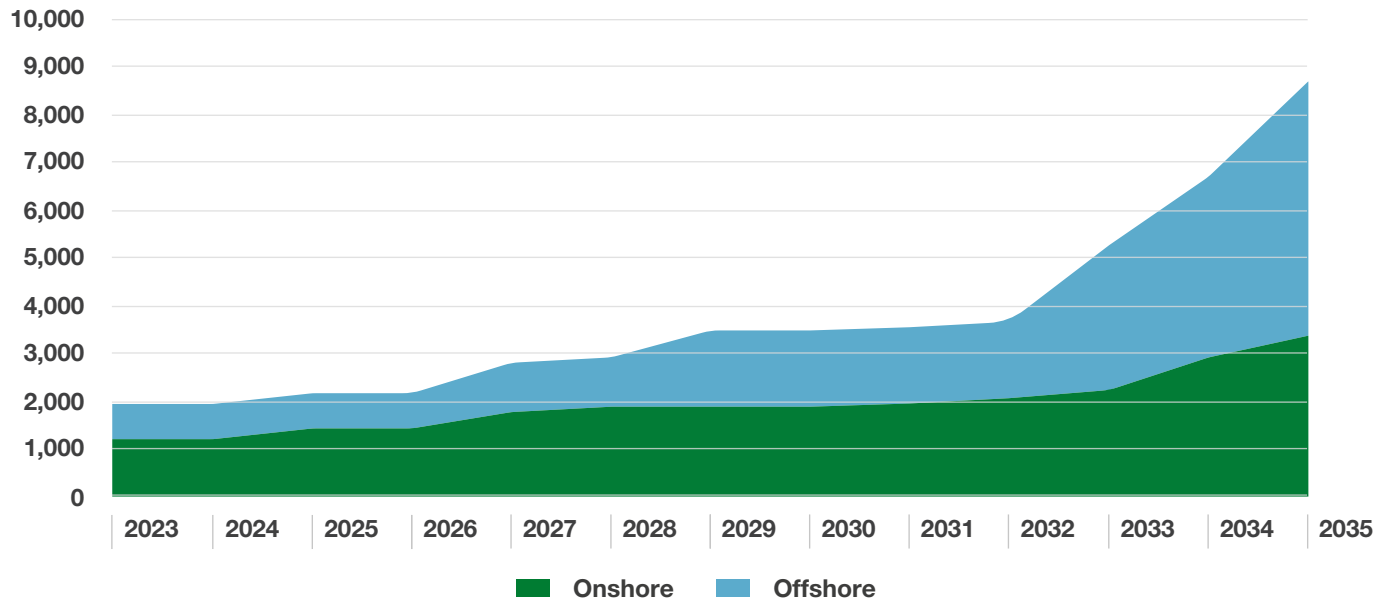


Fig 3.3

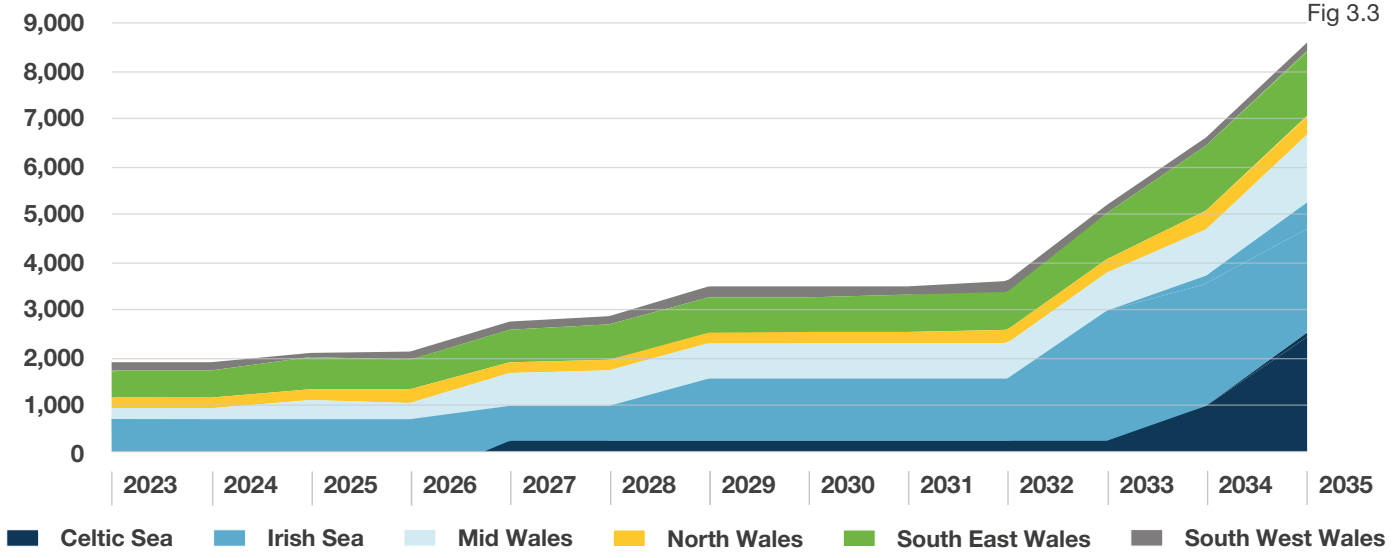


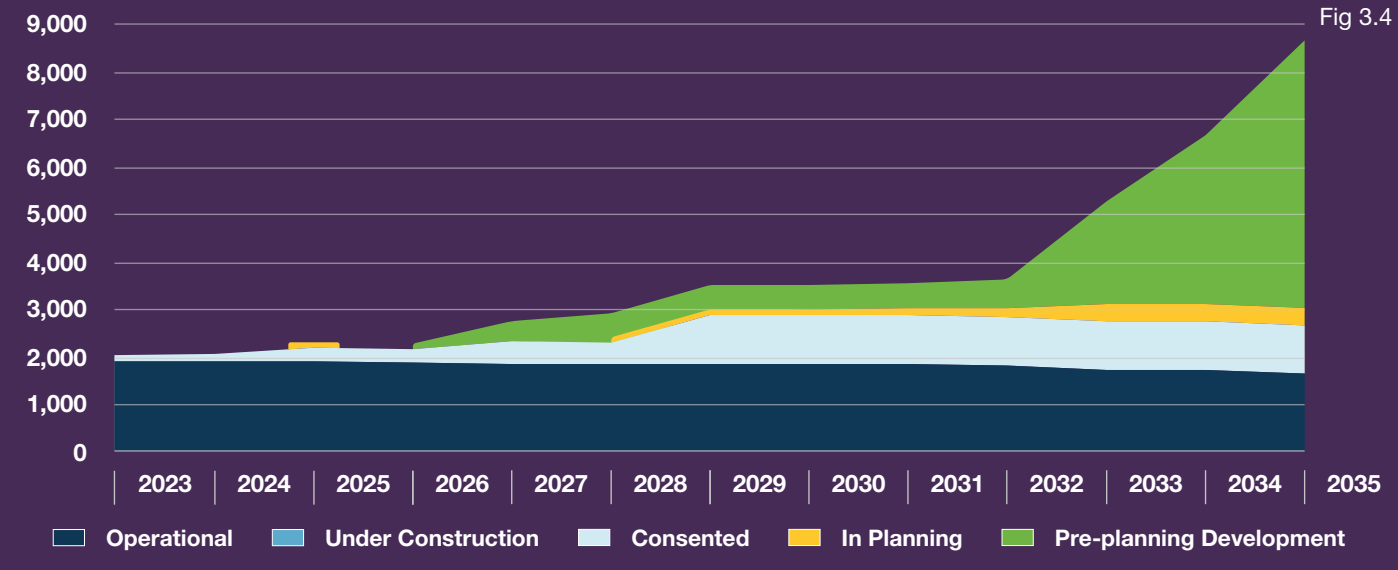
Figure 3.3 details the deployment by region, highlighting that the floating offshore wind projects in the Celtic Sea may begin to have significant impact in 2034 and 2035.

Figure 3.4 illustrates the forecast by the current development status of the project. Of the 9GW potential, from our research of public domain projects, more than half is currently in the pre-planning application early stage of development. Our modelling assumes that these early-stage projects will progress through the planning system, will receive a positive determination, and will be built out in a timely manner subject to latest published grid connection dates where they are available. As stated earlier, this is a very optimistic assumption and will not be achieved unless significant barriers around grid, planning and CfD are not overcome.

The cumulative charts take into account that some 343MW of onshore wind projects will be approaching the end of their operational period between now and 2035. However, at the end of an onshore project's life, decisions can be made for either life extension (continuing to operate current operational site as is); repowering (decommissioning current operational site and replacing with larger, modern turbines on a different layout); or decommissioning (removing infrastructure and restoring site). The EnergyPulse database is continuously updated to reflect any operational period extensions granted planning permission.

The Welsh future pipeline is not all just about power generation. With onshore wind turbines increasing in size and efficiency, this sector could act as a supply chain and green skills runway for offshore over the next ten years. There is huge appetite and opportunity to gain is we create the right environment and prevailing wind for all these technologies to thrive as part of a diverse and resilient energy mix.

Fig 3.4



Section 3

Grid Connectivity

Section 3

Grid Connectivity

Our EnergyPulse database is regularly cross-checked against grid connection registers published by National Grid ESO and the Distribution Network Operators. Embedded capacity refers to typically larger distribution connected projects that have contracts with the National Grid.

Figure 7.1 shows the forecast capacity of both onshore and offshore wind projects by grid connection type. Where the developer has not indicated whether the project will be distribution or transmission connected, then this is labelled as 'not known'.

The amount of wind capacity that is directly connected to the transmission network is forecast to increase significantly, from 41% (804MW) at the end of 2021 to 67% (5,794MW) by the end of 2035 – a 7-fold increase in capacity based on current grid connection agreements and connection dates.

Figure 7.2 shows that the majority of transmission connections will be to offshore assets in the Celtic and Irish Sea. The majority of unknown grid connection types, potentially indicating a current shortage of grid capacity, is located in Mid Wales.

Fig 7.1

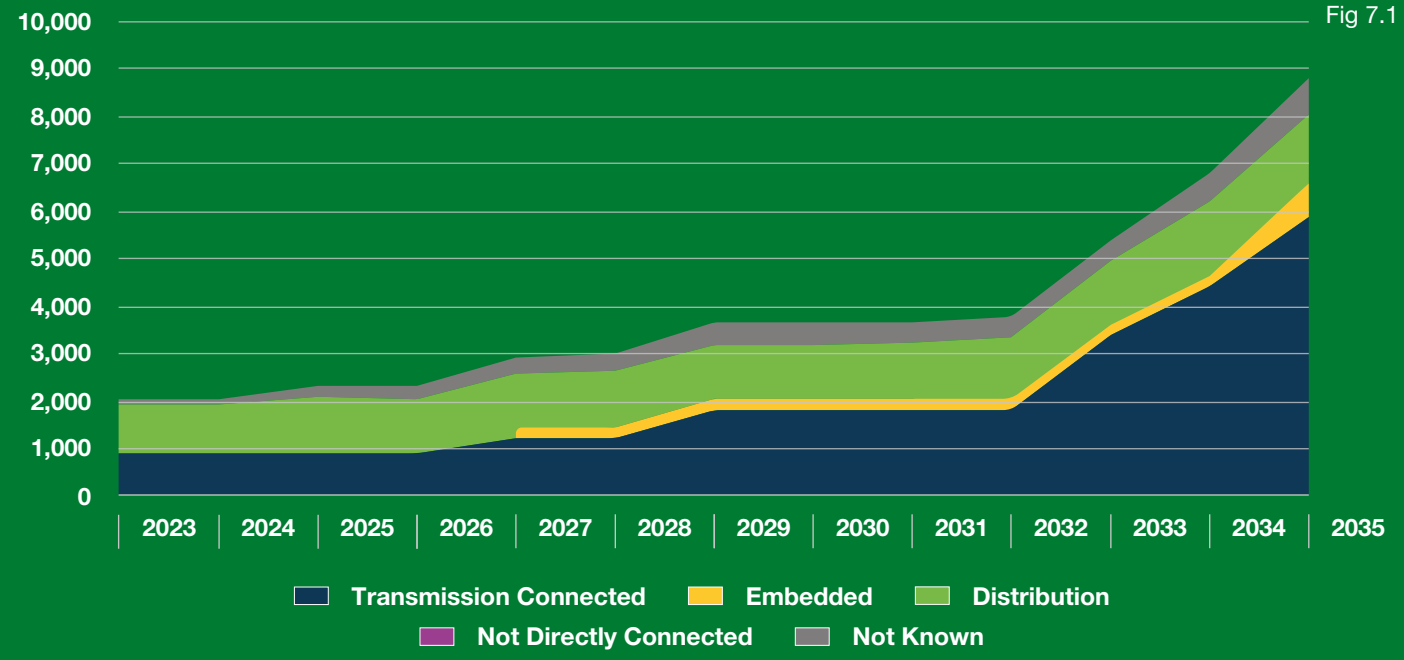
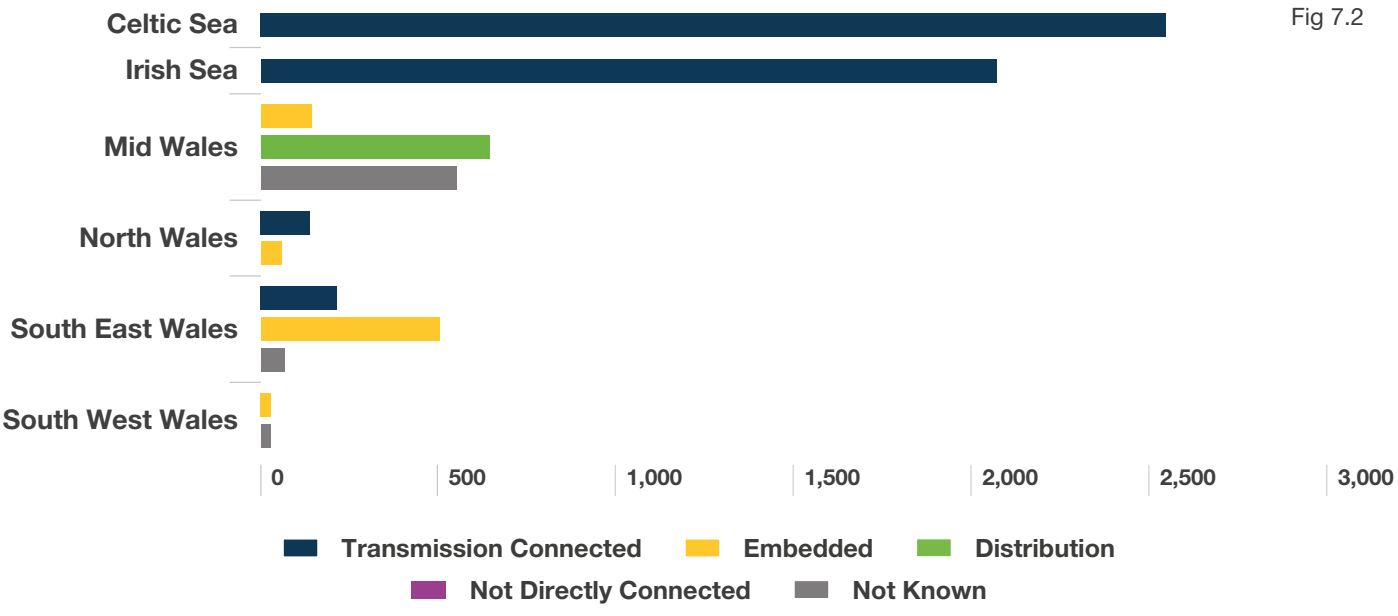


Fig 7.2



Section 4

Planning

Historical Situation

There have been a number of changes to the planning legislation and policy backdrop in Wales in the past decade. While the intention has been to streamline the consenting process and provide a more supportive policy environment, the evidence suggests that a lack of consistency and clarity have impacted negatively on both the appetite for development and the duration of the decision-making process.

Under the Planning (Wales) Act 2015, the Welsh Government took over the consenting reins for all energy generating projects between 10-50MW on the 1st March 2016. This upper limit increased to 350MW on 1st April 2019 under the Wales Act 2017, and now encompasses all energy generating projects of national significance through the Developments of National Significance (DNS) regime. Onshore wind is excluded from the upper limit, so the DNS regime currently covers all onshore wind developments above 10MW in Wales. However, this is set to change.

This year the Welsh Government introduced the Infrastructure (Wales) Bill, with the aim of simplifying the consenting process for major infrastructure developments, including energy generation projects. This is expected to be in force by mid-2025.

In 2021, Wales also saw a change in the policy environment, with Welsh Government adopting Future Wales, replacing previous onshore wind support from policy provided in Technical Advice Note 8.

As the data below shows, over the past seven years, the DNS regime for wind projects has had a limited opportunity to be tested in Wales due to the lack of applications coming forward.

It is essential that the transition from the DNS regime to the impending Infrastructure (Wales) Bill occurs seamlessly and provides much needed consistency. There remains a risk that developers will delay submitting consent applications in anticipation of the change in process, which happened during the transition from TAN8 to Future Wales policy (adopted in 2021). An uptick in onshore wind applications coming through from developers is only just being witnessed.

Submissions And Decisions (Onshore Only)

On average, 242MW of onshore wind capacity was submitted for determination each year in Wales between 2009 and 2015 (Fig 8.1). Applications fell to zero in 2016 following changes to CfD legislation introduced by the UK Government, and the introduction of the DNS regime in Wales. Appetite to submit onshore projects for determination has only recently begun to return to Wales as a result of policy change bringing in Future Wales.

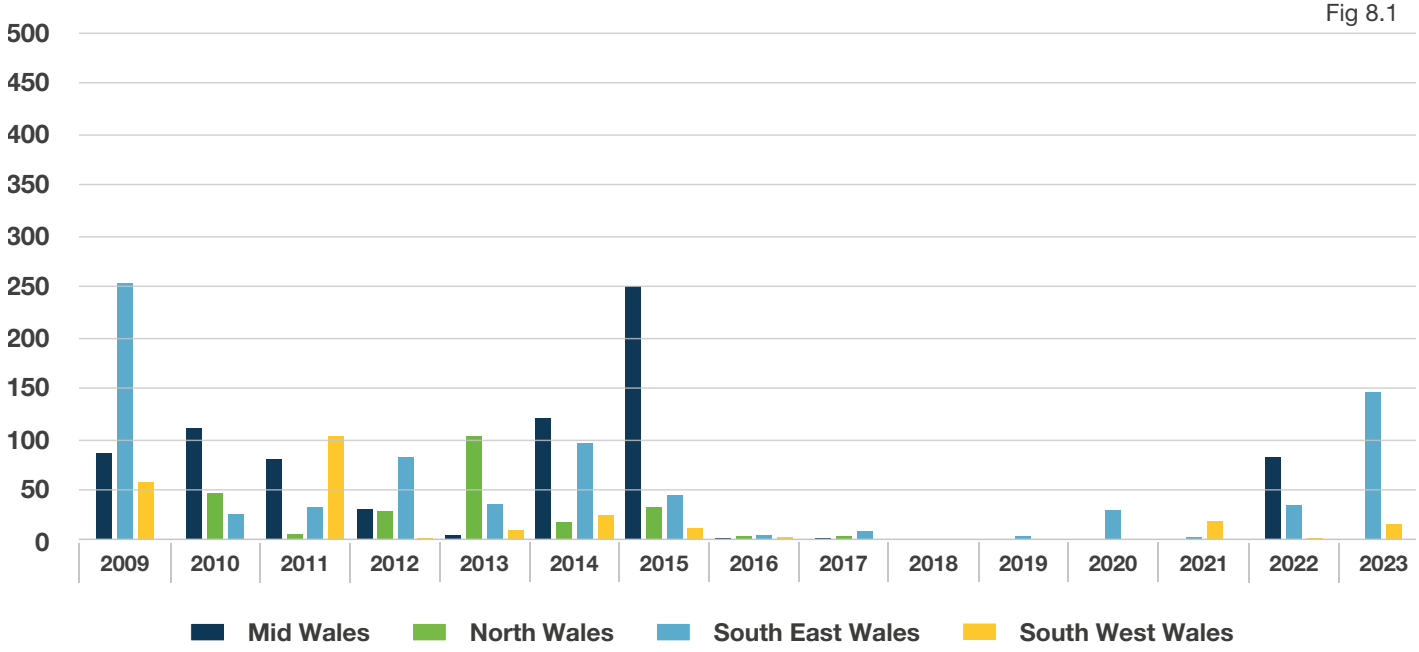
The majority of planning applications submitted since 2016 have been in South East and Mid Wales.

Fig 8.1 illustrates few projects being pursued between 2016 and 2021, with a marked increase in 2022 as the impact of Future Wales bears witness and developers gain confidence in using the DNS regime.

Deeper analysis of the DNS data reveals that only 2 wind projects have been processed through the DNS regime since 2016. One was approved in 2022, almost 2 years after having been submitted (Upper Ogmore, 25.2MW). The other was refused in 2023 just shy of 14 months after submission (Rhoscrowther, (12.9MW).

With only two cases to draw upon, it is clear the DNS regime in Wales has not had the opportunity to demonstrate positive outcomes for wind energy due to a slump in applications during a period of policy transition. The coming years will be key to understanding whether a jump-start to the renewable transition is realisable in Wales.

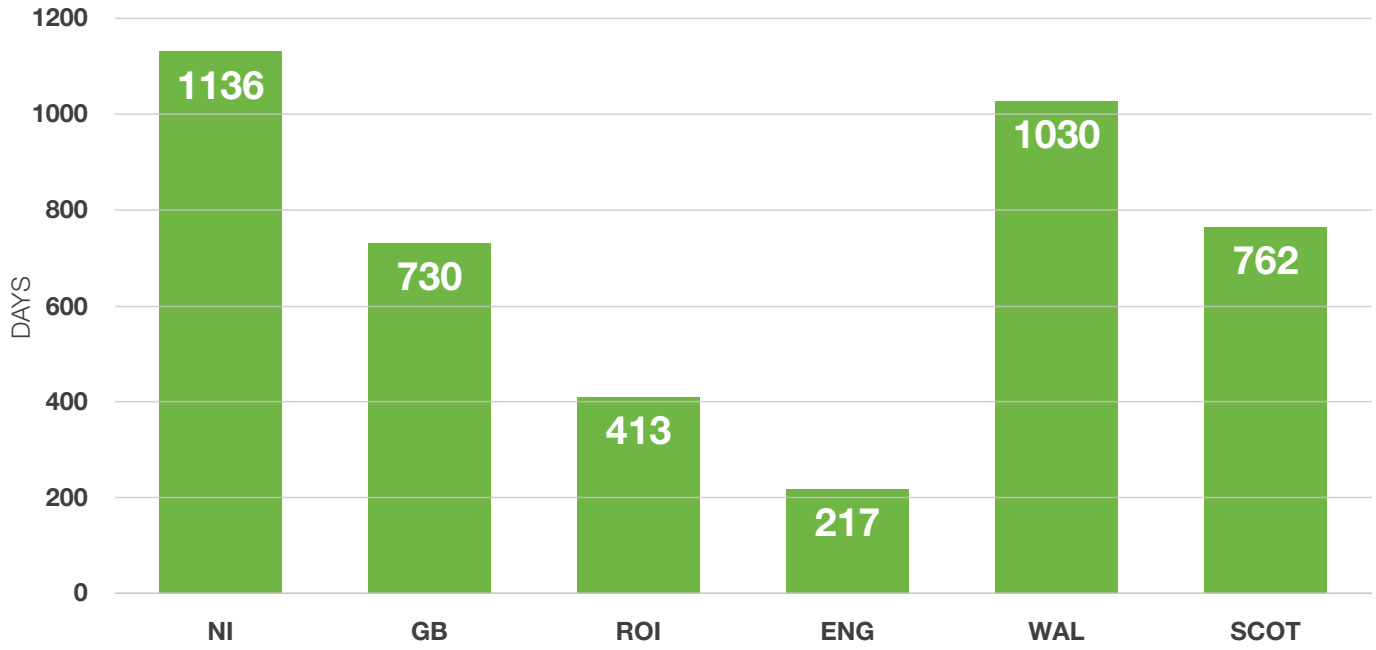
Fig 8.1



UK Comparisons

In more recent years, the backlog of historic cases and slow uptake of new submissions demonstrates that Welsh planning performance to date has not created an environment that is attractive to ongoing development.

Average duration for granting of onshore wind planning permission (2020-2023)*

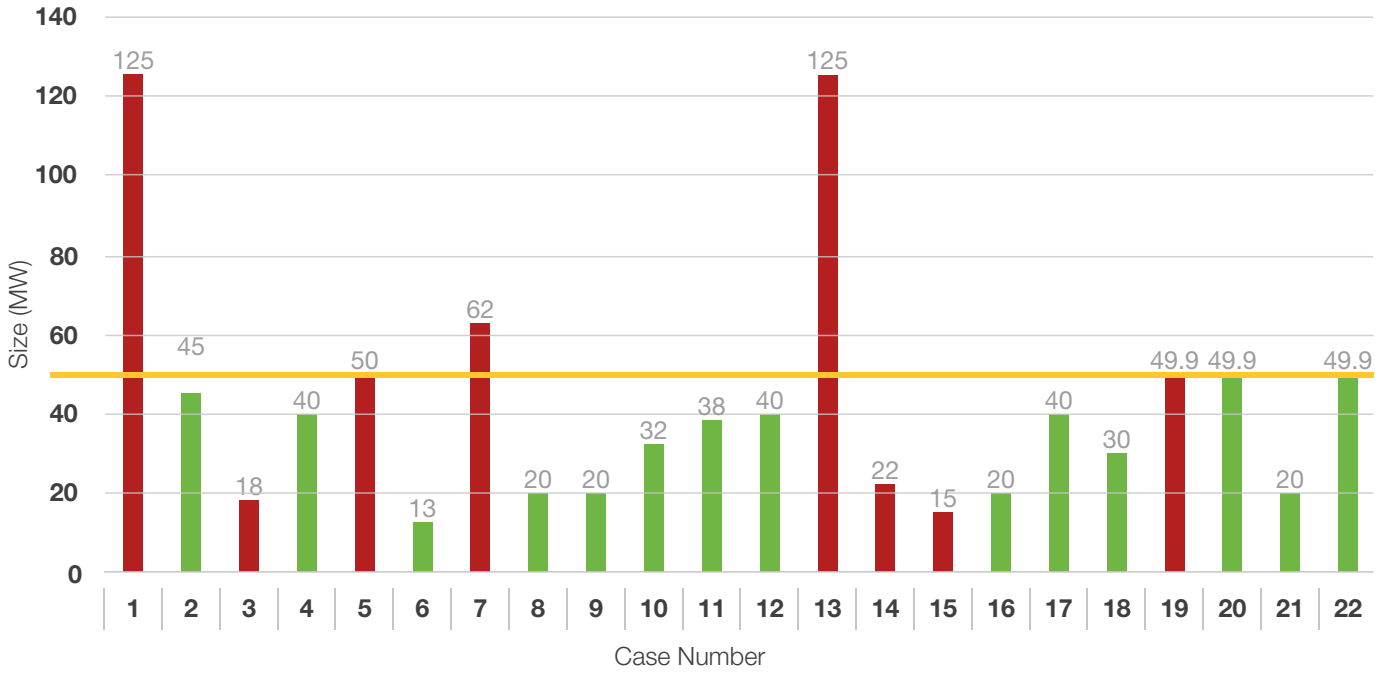


Source: RenewableUK Energy Pulse & Wind Energy Ireland

*Data shown for onshore wind projects with a capacity >1MW from 2020-2023

Welsh DNS Data

DNS - the story so far: Decided Applications



Since the Developments of National Significance (DNS) regime came into play in Wales in 2016, the intention was to speed up the consenting process for large-scale energy generation projects. However, our data shows only one onshore wind farm at Upper Ogmore in South East Wales (25.2MW) has been approved (in 2022) through the regime.

The Welsh Government has a prescribed time limit of 10 months to determine projects under the DNS regime (10MW or above). Upper Ogmore, took more than twice this long for a decision to be reached.

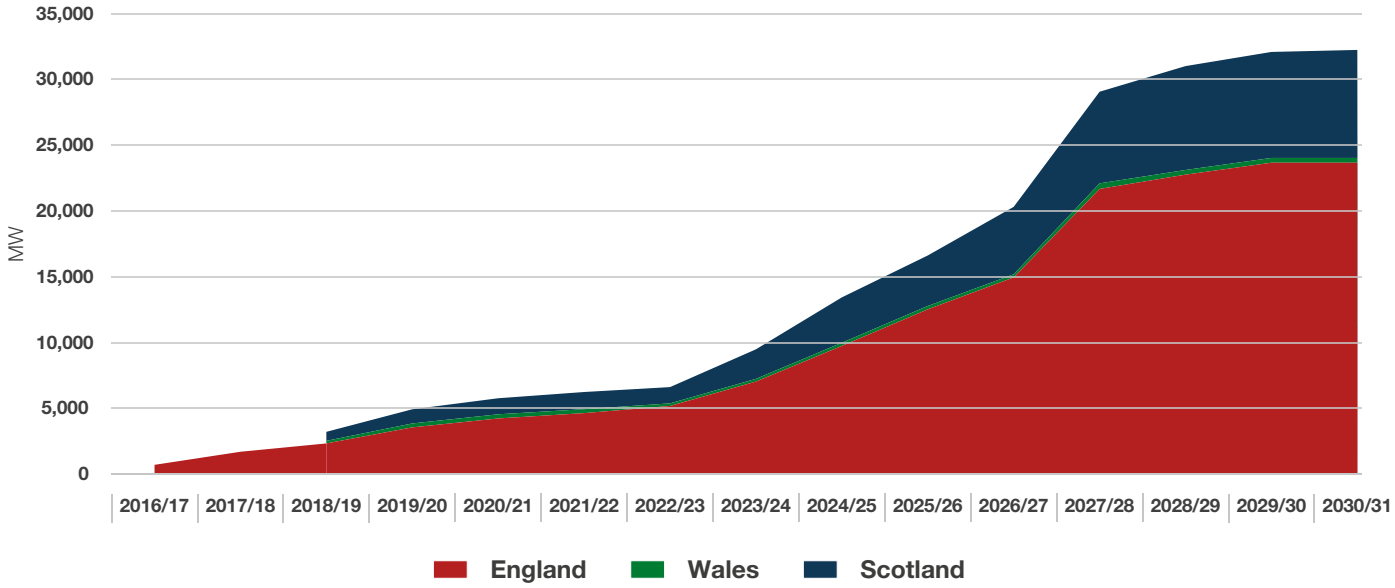
In the past seven years, the graph shows there have been twenty two applications under planning legislation through this process. Those that were approved are shown in green, those refused, in red:

- 41% of applications through the DNS process (9/22) have been refused.
- Of the 9 refusals, (44%) were refused by the Minister against Inspector recommendation – these were all energy generating projects.
- Only 6 of these planning decisions (27%) were made within specified statutory timeframe of 10 months.
- For the 2 wind projects (Upper Ogmore and Roscrowther), the average determination date was 18 months.
- No onshore renewable projects above 50MW approved since 2016.

Around 80% of projects on the DNS register (future, current and determined applications) are renewable energy generation projects. While the DNS process does not focus exclusively on renewables and will not capture smaller projects under 10MW, **given the scale and pace of the energy transition required, the performance of the regime to date paints a worrying picture of long planning delays and low approval rates for energy generation projects in Wales.**

UK Government contracts for difference by country

Low Carbon Contracts Company analysis of expected capacity



Expected capacity of the CFD portfolio up to 2030 (in MW), by country
Source: LCCC

Once a project has been granted planning permission and a grid connection agreement, the UK Government's annual Contracts for Difference (CfD) auction invites companies to bid to develop renewable energy projects. Successful bidders are awarded a contract with a guaranteed price to supply the UK grid with electricity.

By providing long-term stability and certainty, the scheme promotes investor confidence and enables companies to leverage the private investment needed to get projects underway.

Due to the conditions set by the UK Government, this year's auction, Auction Round 5 (AR5), failed to deliver Wales' potential pipeline. Only one onshore, one solar and a number of tidal projects secured contracts (overall, only 3% of the contracts awarded).

In comparison, Scotland took 98% of the onshore wind contract awards. In a major setback to Welsh ambitions, there were no offshore wind bidders at all, including from Wales' flagship 100MW floating offshore wind demonstration project, Erebus. The narrow focus on cost reduction through competition meant the administrative strike price was set too low. Despite industry warnings, this made the auction unviable for offshore wind developers as it did not take in to account inflationary pressures that have significantly increased supply chain costs. Erebus, due to be commissioned in 2026, was the leading opportunity for Wales to kick start a burgeoning industry, producing clean electricity, driving investment, delivering on Wales' net zero targets and unlocking the first of thousands of jobs and opportunities for local people. This disappointing outcome will now delay the investment decisions of our developers, supply chain companies, ports and infrastructure.

The CfD mechanism is a critical financial support framework available for renewable energy projects in the UK. A graph from the Low Carbon Contracts Company, who operate the CfD scheme, shows that historically very few Welsh projects have been awarded a CfD compared to England and Scotland. Given this backdrop and the latest AR5 result, it underscores the pressing need to facilitate the right investment environment in Wales to meet the step-change in deployment needed by 2035.

Welsh Project Ownership

Reflecting which companies are most active in the Welsh wind by sector and region:

Wales Portfolio by Owner Share & Technology (MW) – Top 20

Methodology

This report consists of analysis and forecasts of project milestones, capacity, turbine numbers, and ownership for Welsh wind farms greater than 100kW in size. All data is sourced from publicly available information.

Where real dates and values are known, they are represented in the data. Unknown dates and values are modelled using assumptions and trends derived from the installed base of UK onshore wind projects. Our model uses historical data trends, including the time taken for a project to receive a planning decision, length of appeal, time from consent to construction and time taken to construct and commission. The data is refined by project size and geography where appropriate. Every effort has been made to present the most up-to-date information obtainable prior to publication.

Our forecasting model does not make any assumptions on the timing of commissioning where there are conditions attached to a consent that relate to aviation constraints. Where an estimated grid connection date is known then this is used to refine the timings of the model.

Projects that have received a planning consent, but according to our research have not been progressed to construction by the date stipulated in conditions of a consent, are not included in projections of future capacity, or the totals of consented projects used throughout the report, unless otherwise stated.

Information in this report is provided by RenewableUK and is a high-level snapshot of the information available in the EnergyPulse database. Information in this document has been compiled as of 30/09/2023.

Glossary

Pre-planning development

- Projects that are in an early stage of development and design, prior to submitting a formal application to the relevant authority. Projects that have submitted a request for a screening or scoping opinion are included.

In planning

- Projects that have submitted an application to the relevant authority in order to gain permission to build. A decision is still pending from the authority.

Consented

- Projects that have received a development consent order or planning permission to build that are still to begin major construction works. If a project receives a planning consent and then a subsequent redesign or variation application is submitted, then the project remains in the "Consented" category.

Under construction

- Projects that have begun major construction works: foundation, cable, substation installation.

Partial operation

- Projects that have had their transmission assets energised, and are exporting power, but all turbines are not yet generating.

Fully commissioned

- The project has been announced as fully completed by the developer.

Ownership share

- Where a project is jointly owned, the MW are attributed to each organisation based on its percentage ownership of the project.

Operational portfolio

- Projects that have been announced as fully commissioned by the developer.

New build portfolio

- All projects from leasing, through development, planning and construction.

Total portfolio

- The sum of the operational and new-build portfolio.

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