



Llywodraeth Cymru
Welsh Government

**Renewable Energy Developer
Strategic Portfolio Business Case
June 2023**

1.0 INTRODUCTION

1.1 Purpose of the Business Case

This business case addresses how the Welsh Government proposes to deliver its objective to accelerate the development of renewable energy projects on the Welsh public estate. It sets out the broad direction of travel by:

- assessing a potential pipeline of such projects
- considering the establishment of a new publicly owned renewable energy development company to deliver these – the Renewable Energy Developer company (RED Ltd)
- assessing the potential costs, benefits and risks of such.

Following an appraisal of a range of organisational options for RED Ltd, it was recommended and agreed in March 2022 to establish RED Ltd as a standalone company. This business case details the activities required to deliver such an entity and sets out the outcomes targeted and the benefits to be realised from the successful delivery of the projects.

It assesses the portfolio of potential projects as a whole and does not consider the financial or risk profiles of individual projects. Individual projects will be subject to separate business cases, which will be assessed at appropriate stages during the project development lifecycle.

This business case has been developed using the Welsh Government's Better Business Cases process, which is based on the HM Treasury 'Green Book' Guidance for Business Cases. It consists of five separate elements – the Strategic, Economic, Commercial, Financial and Management cases.

1.2 Opportunities on the Public Estate

Welsh Government owns and manages large areas of land which includes its Woodland Estate, managed by Natural Resources Wales (NRW) and which covers more than 126,000 hectares, representing nearly 6% of the country's total land area.

Large areas of land within the Woodland Estate have been identified as suitable for renewable energy development, particularly for wind energy. NRW has been successfully encouraging large scale renewable energy projects on the Woodland Estate for the last decade and this has resulted in 441MW of installed wind energy capacity, comprising 170 turbines across four projects, all via long-term leases to the commercial sector, with a further 134MW in development.

In 2020 Welsh Government decided to consider alternative delivery models with the objective of increasing the value to Wales from renewable energy project development on the public estate and ensuring alignment with its policy objectives.

Outline assessments were developed in 2021, based on an example pilot project in *[information redacted]*, to understand the implications of a publicly owned development programme. The work concluded that there was a case to retain public sector control of project development, at least through to the post-planning phase, provided the development team is appropriately skilled and the projects are of medium risk. Consequently, Welsh Government established a programme team in November 2021 with an initial focus on defining development processes and procedures and carrying out site feasibility across the Woodland Estate to define a prioritised portfolio of projects.

2.0 STRATEGIC CASE

2.1 Introduction

The policy context for large scale wind energy generation and ground mounted solar PV energy generation in Wales is set out in a number of national and local planning policy and guidance documents. Allied to these are Welsh Government targets for delivering more renewable energy generation capacity and local ownership of this.

2.2 Welsh Government Policies and Targets

In 2019 the Senedd declared a climate emergency. It was the first national Parliament in the world to do so.

Welsh Government published [Net Zero Wales](#), in October 2021, setting out the scale of change required to meet the statutory emission reduction targets, which will require electrification of industry, transport and domestic heat. Net Zero Wales sets out a range of plans and policies to deliver this transition in a way that delivers net benefit to Wales. This includes the commitment to:

- build on the existing pipeline of public and community renewable projects, evaluating the potential for renewables on public land
- identify opportunities on the Woodland Estate, balancing the potential to generate energy with the need to preserve biodiversity and increase tree planting in Wales
- establish a Welsh Government or public energy developer to accelerate the delivery of renewables.

Having undertaken an exercise in 2021 to identify opportunities and a [list of recommendations](#) to significantly scale up renewable energy in Wales, Welsh Government set the following vision:

“Our Vision is for Wales to generate renewable energy to at least fully meet our energy needs and use surplus generation to tackle the nature and climate emergencies. We will accelerate actions to reduce energy demand and maximise local ownership retaining economic and social benefits in Wales.”

Public sector led renewable energy developments on the Welsh public estate would make an important contribution to Wales’ existing renewable energy generation and local ownership targets:

- Wales to generate electricity equal to 70% of its consumption from renewable sources by 2030
- 1GW of renewable energy capacity in Wales to be locally owned by 2030
- all new renewable energy projects to have at least an element of local ownership for 2020.

Augmenting this, the 2021 Programme for Government included the commitment to:

“expand renewable energy generation by public bodies and community groups in Wales by over 100MW by 2026”.

2.2.1 The National Plan and National Planning Policy

[Planning Policy Wales](#) (PPW) sets out the land use planning policies for Welsh Government, provides advice on a wide range of issues and is supported by a number of Technical Advice Notes. PPW explicitly expresses Welsh Government's support for wind energy playing a key part in meeting its vision for future renewable energy production.

[Future Wales](#), the national development framework setting the direction for development in Wales to 2040 sets out the Welsh Government's future aspirations for large scale energy development. It identifies Pre-Assessed Areas for Wind Energy where Welsh Government has already modelled the likely impact on the landscape and has found them to be capable of accommodating development in an acceptable way. There is to be a presumption in favour of large-scale wind energy development in these areas.

For other large-scale onshore renewable energy developments, including ground mounted solar PV, a positive policy framework exists subject to proposals not having an unacceptable environmental impact, including landscape and visual impacts.

2.2.2 Supporting Acts and Guidance

Environment (Wales) Act (2016)

The [Environment Act](#) commits Wales to a long-term target of reducing emissions by at least 80% by 2050 as well as interim targets and 5-yearly carbon budgets. The Act sets a long-term framework for decarbonisation, creating clarity and certainty to enable low carbon action and investment. Renewable energy generation, including onshore wind farms, will play a key role in reducing greenhouse gas emissions.

In 2019, the UK Committee on Climate Change recommended that Wales increase their carbon reduction target to 95% by 2050. Welsh Government accepted this recommendation but having considered new evidence, declared an ambition to increase the target to net zero by 2050. In February 2021, Welsh Government set out its legal commitment to achieve net zero emissions by 2050 but with an ambition to "*get there sooner*".

Well-being of Future Generations (Wales) Act (2015)

The [Well-being of Future Generations Act](#) gives the ambition, permission and legal obligation to improve Wales' social, cultural, environmental and economic well-being. It requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change. It puts in place seven well-being goals and makes it clear that public bodies must work to achieve all of the goals.

Decarbonisation of the Public Sector (2017)

Welsh Government's ambition for the public sector to be carbon neutral by 2030 is set out in a policy statement. This can only be achieved via an ambitious programme of energy efficiency and renewable energy generation projects across the Welsh public estate.

Local Ownership Policy and Guidance

In February 2020 Welsh Government set out its expectation for all new renewable energy projects in Wales to include at least an element of local ownership, to retain wealth and provide real benefit to communities. Locally owned generation provides a strong opportunity to retain economic value, contributing to prosperity. Developing a public sector led portfolio of renewable energy projects on the Welsh public estate would clearly demonstrate Welsh Government's commitment to the local ownership policy.

[Local and Shared Ownership of Energy Projects](#) provides guidance on the options available for meeting the local ownership policy objective and the core benefits associated with an element of local ownership. 'Locally owned' projects are defined as energy installations, located in Wales, which are owned by one or more individuals or organisations wholly owned and based in Wales, or organisations whose principal headquarters are located in Wales.

2.3 Conclusion

It is clear that large-scale onshore renewable energy developments, in the right location, have strong policy support and can make an important contribution to the low carbon energy transition with an emphasis on retaining local ownership and value in Wales.

It is also clear that there is a strong policy ambition for more of the value from projects in Wales to be retained in order to deliver a prosperous low carbon Wales and by demonstrating the benefits to Wales, retain public support for the energy transition.

3.0 ECONOMIC CASE

3.1 Introduction

RED can potentially achieve its aim and objective in different ways. The purpose of the economic case is to identify the option for RED that delivers best value by assessing both the benefits – including all the wider economic, social and environmental effects – and the potential costs. The economic case is based on the following steps:

- identifying and agreeing the critical success factors against which to appraise RED's programmes and projects alongside its overarching aims
- identifying possible options for satisfying RED's potential scope, and appraising how well each option meets the strategic aims and critical success factors
- assessing costs, benefits and the associated risks to identify the preferred option.

3.2 Existing Arrangements for Project Delivery on the Welsh Public Estate

All existing wind energy projects on the Woodland Estate, over 440MW in total, have been delivered via a long-term lease to the commercial sector, with the two most recent exercises including an increased focus on delivering local value.

3.3 Overarching Aims for RED

The overarching aim for the RED programme is to accelerate realisation of Welsh Government's net zero ambitions by delivering a minimum of 250MW of new renewable energy generation capacity by 2030 and an additional 750MW of new capacity by 2040, whilst maximising the retention of financial value in Wales and delivering wider economic, social and environmental benefits. This implies:

- securing more local ownership of projects over and above that required under the recent [local ownership guidance](#)
- increasing the share of development, capital and operating expenditure (excluding fuel) from Welsh based suppliers
- employing more local people, especially during the construction and operation of the renewable energy capacity
- enhancing other community benefits
- building community support for renewable energy projects.

In addition, the projects delivered as part of RED are expected to:

- be consistent with the requirements of the Well-being of Future Generations (Wales) Act (2015); and
- align with [NRW's Sustainable Management of Natural Resources Principles](#).

3.4 Business Need for RED

Implementation of RED by Welsh Government is justified by the following, whereby a public sector developer may add greater value:

- not all private sector developers are incentivised to maximise the value to Wales from renewable energy developments on the public estate in Wales
- not all private sector developers have adequate incentives to develop sustainable, high skilled employment opportunities for people in Wales
- not all private sector developers have adequate incentives to increase or accelerate the avoided cost of carbon and mitigate other environmental impacts in Wales
- the private sector may lack confidence in how the policy landscape affecting renewable energy will evolve
- the private sector faces higher cost of capital, which makes investment in higher risk projects less attractive.

RED can close the gap between Welsh Government ambition and current arrangements by getting more actively involved in delivery of renewable energy projects on the public estate in Wales, by:

- actively managing the value to Wales of renewable energy developments on the public estate in Wales
- developing sustainable, high skilled employment opportunities for people in Wales
- maximising the role of public land in generating renewable energy to mitigate the climate emergency.

3.5 Critical Success Factors for RED

The critical success factors for RED are summarised below in Table 1:

Table 1 - Critical Success Factors

Critical Success Factor	Requirement
<p>Strategic fit:</p> <p>How well an option for RED aligns with the Welsh Government's other strategies, programmes and projects</p>	<p>Encourages rapid development of renewable energy generation capacity in Wales and so contributes to delivery of Net Zero</p> <p>Promotes a holistic assessment/appraisal of potential renewable energy projects on the Welsh public estate that fully captures their local value for Wales</p>
<p>Value for money:</p> <p>How well an option for RED optimises social value in terms of its potential costs, benefits and risks</p>	<p>Delivers wider benefits beyond development, construction and operation of RED projects by:</p> <ul style="list-style-type: none"> - retaining more value in Wales - promoting local sourcing - driving skills development - reducing energy system costs and improving system performance, including the grid - avoiding carbon emissions
<p>Supplier capacity and capability:</p> <p>How well an option for RED matches the ability and willingness of potential suppliers to deliver the required services</p>	<p>Access to capability and capacity to manage RED, including the ability to collaborate effectively with NRW</p> <p>Willingness of potential contractors to work with RED</p> <p>Ability to enhance local supply chain capability and develop skills in local workforce</p>

Critical Success Factor	Requirement
<p>Affordability:</p> <p>How well an option for RED can be financed across its whole life from available Welsh Government funds</p>	<p>Willingness and ability of Welsh Government to fund RED projects and bear risks</p> <p>Ability to attract funding from Welsh investors such as pension funds and community investors</p>
<p>Achievability:</p> <p>How well an option for RED is likely to be resourced and delivered</p>	<p>Appropriate governance and incentive structure - linking Welsh Government, RED and suppliers</p> <p>Ability to gain planning consent for each project</p>

3.6 What Could RED Deliver?

The programme team has carried out detailed initial feasibility across the Woodland Estate in conjunction with NRW to establish the scope for large scale wind projects.

A comprehensive early feasibility review identified significant development potential on the Woodland Estate, amounting to an additional 250MW of renewable energy capacity by 2030 and an additional 750MW by 2040 – i.e. a total of 1GW of additional capacity – subject to availability of grid connections. These comprise *[information redacted]* potential sites that appear to have strong development potential. Projects were ranked based on deliverability, considering planning, road access, access to grid and indicative financial return. The evidence from the initial feasibility work suggests a healthy prospective project pipeline, particularly over longer timescales if grid connection issues can be overcome.

Whilst most projects identified for development on the Woodland Estate are wind energy projects, there are also several potential solar PV development opportunities on the wider estate.

An early assessment considered the potential number of projects available on the woodland estate and the implications for effective delivery. A small group of people experienced in project delivery considered the affordability and deliverability of scaling a team to deliver *[information redacted]* projects. The group agreed that about *[information redacted]* projects was likely to be the optimum scale to effectively manage delivery.

The economic assessment therefore considered four RED portfolio options around this scale as well as the business as usual (BAU) option, where areas of the public estate are leased to commercial developers.

Table 2 shows different combinations of RED projects which would (at least initially) set a trajectory to meet its strategic objective (i.e. provide 250MW of new capacity by 2030 and 1GW by 2040):

Table 2 – Options for Pipeline Scale

[information redacted]

The economic analysis concluded that an initial project portfolio made up of *[information redacted]* onshore wind projects and *[information redacted]* solar PV projects would provide RED with the scale of new capacity needed to meet its strategic objective, whilst optimising public value. This also considers the likelihood that some projects will be found to be unviable on further development, and the reality that not all projects will gain planning consent.

For all generation projects within the portfolio, the potential to co-locate a battery storage project will be considered as part of the development process. The commercial viability of adding battery storage capacity to each energy generation project will be considered during the development phase and battery projects have not been included within the portfolio of projects assessed within this business case.

As well as developing its own portfolio of projects, there are also opportunities for Welsh Government to work with commercial developers to deliver projects. This would be most appropriate to explore where *[information redacted]* working with a commercial partner would accelerate delivery or enhance the project and deliver greater value to Welsh Government.

3.7 How Could RED Deliver?

This business case considers four development options, based on how far RED takes each project within the emerging portfolio:

Table 3 – Options for Project Development Approach

Portfolio Development Option	Description
1. Sell after consents are secured	RED sells all its projects when the required consents have been secured but before construction begins. Welsh Government would accept project development risk and cover the cost of project development. However, it would not be directly exposed to construction risk and would not cover the capital cost of constructing the project and the value of the built asset would not sit on the Welsh Government balance sheet.
2. Sell immediately after construction	RED sells all its projects immediately after construction but before operation starts. Welsh Government would take development and construction risk and cover the costs of project development and construction. The value of the asset would sit on the Welsh Government balance sheet up to the point of project sale.
3. Sell after commissioning	RED sells all its projects after initial commissioning of the wind farm, typically at least 12 months following the end of construction. Welsh Government would accept development and construction risk, cover the cost of project development and construction and retain asset management responsibilities up to the point of sale. The value of the wind farm asset would also sit on the Welsh Government balance sheet up to the point of project sale.
4. Whole-life retention	RED retains all its projects for their whole life. Welsh Government would accept development and construction risk and cover the costs of project development and construction. It would also be responsible

Portfolio Development Option	Description
	for operating and maintaining the asset during the typically 30 years of operational life. The value of the wind farm asset would sit on the Welsh Government balance sheet until the project was decommissioned.

Each of these options have different risk profiles, revenue and capital funding requirements and will generate different levels of financial returns. They will also present different opportunities in terms of stimulating wider economic and social value, giving Welsh Government varying levels of control over project decisions and the delivery of benefits.

3.8 How Could RED be Established, Organised and Structured?

Three options were examined for establishing the RED development function.

Table 4 – Models for RED Development Function

Organisational Option	Description
Welsh Government team	RED is established as an internal part of the Welsh Government
Arms-length delivery unit	RED is established as an arm's length delivery unit of the Welsh Government
Wholly-owned commercial body	RED is established as a commercially oriented partner organisation owned by the Welsh Government.

The option of embedding the RED function within another organisation was considered and excluded due to the lack of any other obvious suitable public body.

The preferred organisational option is that RED be established as an arm's length delivery unit, with a public sector ethos, which would retain decision making wholly within Ministers' control, enabling close alignment with the full range of Welsh Government policy and available development funding, whilst giving it sufficient agility to pursue commercial development effectively. The company, its subsidiary project companies and the income it will generate would be wholly owned by Welsh Government. Decisions on project development funding will be made by Welsh Ministers at key project stage gates.

3.9 Shortlisted Options for RED

Based on the above options. the business case identifies and considers five shortlisted options, the distinctive features of which are set out below.

Table 4 – Delivery Options

Option	Appraisal
<p>Option 1: BAU Leasing areas of the estate with high requirements for local benefit</p>	<p>This delivers the least benefit to Wales of all options. However, it generates rental income and some environmental and community benefit schemes. Welsh Government would have leverage to maximise value further through future leasing rounds. Risks are wholly borne by the industry. The approach continues to support public perception of wind as extractive. Increased development on the Woodland Estate will increase demands on NRW resources, though this will be the case whichever option is taken forward.</p>
<p>Option 2: Do minimum Develop smaller pipeline of projects to gain planning consent and sell these when consented</p>	<p>This approach requires funding the developer function and project development costs during the 5-7 year period during which planning consent is achieved and final investment decision reached. It delivers the earliest return, as profits are realised at sale and not over the full project life. The market for consented projects is strong. There is no need for construction funding. Exposes Welsh Government to critics of the schemes and related grid infrastructure, though some may be supportive of projects where the wealth created will stay in Wales. Limited influence on supply chain benefits.</p>
<p>Option 3: Intermediate Develop smaller pipeline of projects and sell these post construction</p>	<p><i>[information redacted]</i> The market adds insufficient value compared to the high capital requirement of construction, but additional costs are incurred to procure and manage construction. Enables Welsh Government to ensure construction is in line with planning permissions and supply chain opportunities are realised.</p>
<p>Option 4: More ambitious Welsh Government develops larger pipeline of projects and sells these post construction and commissioning</p>	<p><i>[information redacted]</i> This needs significant capital investment held in the projects and additional revenue cost for the management team. Supply chain opportunities extend to operation and maintenance.</p>
<p>Option 5: Do maximum Welsh Government develops and retains the maximum pipeline of projects during the operational phase</p>	<p><i>[information redacted]</i> It requires more investment in the developer body and would require a huge amount of capital to be invested over the 30-year life of projects. Developments would be in Welsh ownership and could enable options such as long-term low-cost energy for citizens within its benefits.</p>

Table 5 summarises the results of assessment of each short-listed option against the strategic objective for RED and its CSFs noted earlier.

Option 1 (the BAU option) is used as the benchmark. It is rated as Amber on all aspects. An option is rated Green where it offers the prospect of a significant improvement against the benchmark and Red means that it is likely to deliver a significantly poorer outcome than BAU.

The key points to note are that:

- all the RED short-listed options (i.e. *[information redacted]*) are expected to lead to better outcomes against RED's strategic objective in terms of securing more local ownership, enhancing community benefit and building community support
- *[information redacted]* offers the potential to achieve a significant benefit in terms of more local sourcing, greater local skills development and acceleration of delivery of new renewable capacity
- *[information redacted]* will depend on a substantive improvement in supplier capability;
- *[information redacted]* offers the most opportunity for external suppliers to become involved in delivery of RED projects whereas *[information redacted]* offers the least opportunity
- *[information redacted]* provides the least opportunity for Welsh investors other than the Welsh Government to get involved in RED
- *[information redacted]* offer the least opportunity for Welsh businesses and workforce through RED
- the impact on energy supply and avoided carbon is not expected to be significant because RED is not anticipated to affect which wind and solar farm opportunities on the public estate are developed.

Table 5 – Summary of Assessment of Short-listed Options

[information redacted]

All options 2-5 for RED above are assessed to offer greater benefits for Wales than BAU. The retention of value generated provides the justification for establishing the body. Based on the economic analysis, the **preferred delivery option** is that RED will be responsible for the development of projects up to securing a planning consent and that decisions can be taken on a case-by-case basis as to whether to realise the value through sale after consents are secured or to progress into construction and the operational phase for a short period or its whole life (30 years), depending on the particular economic and financial conditions at the time.

3.10 Costs

Table 6 compares the estimated cash flows of the BAU approach with *[information redacted]*. This demonstrates that the *[information redacted]* is projected to provide additional value of *[information redacted]* in net present value (NPV) terms over a 30-year period when compared to BAU.

Table 6 – Estimated Cash Flows Comparison

[information redacted]

3.11 Benefits

The financial appraisal undertaken concludes that there is significant financial benefit to developing wind projects, though solar projects are likely to be more marginal. Given current and expected market conditions and the availability of sites on the public estate, wind farms offer a significantly better opportunity to generate benefits than solar farms. The co-location

of battery storage technologies with solar PV projects may improve the attractiveness of solar farms.

The primary benefit from establishing RED is that Welsh Government receives the profits from project development, and potentially construction and/or operation, depending on the delivery model and access to capital. It is estimated that a standard *[information redacted]* wind project would cost approximately *[information redacted]* to develop, *[information redacted]* to construct and *[information redacted]* to operate (including fixed and variable operational costs, lease payments and community benefit fund payments) and if developed through to operation and retained for its operational life, would deliver a net cash return of *[information redacted]* over the lifetime of the project. In this scenario, Welsh Government, as the landowner, would also benefit from a lease payment in the order of *[information redacted]*. In comparison, under the BAU scenario, where public land is leased to a commercial developer, only lease income would be received by Welsh Government, resulting in a net cash return in the order of *[information redacted]*. Such far greater returns could be deployed to support those near the developments and to deliver wider Welsh Government objectives. RED can also deliver a wider range of benefits including:

- more innovative ways to deliver community benefit, including providing income that can be used to deliver benefits to people close to the developments. These could include funding energy retrofit projects involving local firms and people
- aligning the development pipeline with economic development and skills development opportunities to stimulate a Welsh supply chain
- securing greater local environmental gains through project design and investment
- providing access to affordable energy.

However, there will be a maximum level of benefit each project can provide. During development, Welsh Government and RED must consider the balance between delivering social and environmental measures and the project's financial return.

RED may also be able to have a wider influence on development beyond the public estate by:

- establishing a level of local benefit that could be expected in other areas of Wales – though there are few hard levers to require this
- establishing a good practice approach to sustainable management of natural resources, which when co-developed with NRW could set expectations for other developments in Wales.

Overall, the net benefits of the different options are largely driven by their impact on the Welsh Government's finances. The direct financial implications of the options for the Welsh Government depend on the value of the lease payments under the BAU option (measured in present value terms) compared with the profits which will accrue to the Welsh Government under the other options whilst it is owned by the Welsh Government, the lease payments paid by investors and any receipts from the sale of the RED projects to investors.

All the RED options imply greater Welsh Government ownership of renewable energy schemes than is currently the case and compared to the BAU option. The scale and significance of the potential benefit depend on how long the Welsh Government retains a financial interest in RED projects, the price at which it sells its interest (under options 2, 3 and 4) and any constraints that exist on how the Welsh Government can use/benefit from any sale proceeds – for example, the Welsh Government's ability to use capital receipts (rather than revenue receipts) for community benefit.

The key points from the wider analysis are the following:

- the positive contribution to the Welsh Government's finances far exceeds any of the other potential benefits

- the greatest potential for RED to drive improved productivity in the supply chain comes where it has the most leverage over potential suppliers – this favours option 5 over the others but depends on being able to develop and adopt innovative approaches
- the difference in the benefits from avoided GHG/carbon emissions is a function of differences in the (assumed) scale of capacity provided under each option
- the electricity capture prices derived from *[information redacted]* forecasts and used in the financial analysis of the projects allows for the anticipated costs to the electricity system of providing renewable capacity through RED
- the opportunity cost of land use does not materially favour one option over the others. If anything, it affects the choice of technology: more viable sites for wind farms on woodland are likely to be available than for solar farms, and the opportunity cost of woodland (and mitigation measures) is already included in the project level finances
- the likelihood of realising material wider supply chain and workforce benefits depends on how far RED can stimulate their development. This, in turn, depends on how far RED is able to exert an influence over the investments made by potential Welsh suppliers to develop their capacity and capability and strengthen their workforce
- finally, three groups of potential wider costs and benefits – other environmental impacts, local energy supply deals and other community benefits – can only be meaningfully considered at project level, rather than portfolio level. It is envisaged that these will be appraised as part of the OBCs for each project.

Option *[information redacted]* is expected to generate the biggest net benefit in absolute terms (expressed as an NPV). All the RED options are expected to give rise to more benefit than the BAU option (option 1). Comparisons between the options, however, are influenced by differences in the scale of capacity/output under the different options.

3.12 Risks

The risks to which RED is exposed are set out in Table 7 under three broad categories.

Table 7 – Risks

Risk	Description
Business risks	<p>These risks will remain with Welsh Government and cannot be transferred. These include:</p> <ul style="list-style-type: none"> - loss of support for the initiative or change in risk appetite with change of administration between political cycles - reputational damage to Welsh Government if the projects fail to deliver targeted outcomes and benefits.
Service risks	<p>These are the risks associated with the design, build, financing and operational phases of the portfolio and may be shared with parties outside Welsh Government. These include:</p> <ul style="list-style-type: none"> - ability to reduce/manage development risk - local opposition to RED portfolio projects - delays in securing necessary consents e.g. planning - cost and timescales for securing grid connections

	<ul style="list-style-type: none"> - inability of local supply chain to meet delivery needs - availability of workforce with required skills in the supply chain - ability to recruit and retain skills - capacity and performance of any partners to deliver optimal operation and maintenance - ability to control the procurement process.
External risks	<p>These risks affect all society, are not connected directly with the portfolio and are inherently unpredictable. These include:</p> <ul style="list-style-type: none"> - changes in wholesale electricity prices - impact of inflation on cost of programme - political commitment to Net Zero outside Wales, which could negatively impact the market for renewable power.

3.13 Sensitivities

The sensitivity of the financial costs and benefits has been tested with respect to key assumptions relating to:

- the scale and mix of the capacity developed through RED and the extent and nature of its additionality
- the future profile of electricity capture prices for renewables
- the rate of underlying cost inflation
- the target rate of return sought by prospective investors in RED projects – post-commissioning, post-construction and post-development: the implications of a one percentage point increase in the target rate of return is tested
- the (appropriate) Welsh Government discount rate given the level and nature of risk associated with the RED projects at the present time: the implication of using the ‘standard’ Green Book discount rate of 3½% is tested.

The staged approach to developing projects with clear decision points will enable the programme to respond to changing external conditions and allow projects to be stopped if risks are too high.

Whilst there are considerable uncertainties around the expected level of benefits related to future electricity prices, future cost inflation and investors and developers’ target rates of return which will affect the way they value RED projects, on balance, the benefits are assessed to outweigh the risks if they continue to be well managed. Principal areas of focus will be:

- tight management of costs both in the developer body and project development
- strong market intelligence on project viability
- strong and effective messaging on the portfolio purpose and sector-specific benefits
- focus on benefits realisation from an early stage to maximise the value realised
- maintaining alignment with Welsh Government policies.

3.14 Conclusion

The analysis for the Economic Case shows that:

- all the short-listed options for RED offer greater benefits for Wales than the BAU option

- given current and expected market conditions and the availability of sites on the public estate in Wales, wind farms offer a significantly better opportunity to generate local benefits than solar farms
- conceivably, the co-location of battery storage technologies with solar PV projects may improve the attractiveness of solar farms
- considerable uncertainties affect the expected benefits from RED: these arise most notably from:
 - electricity prices;
 - future cost inflation;
 - investors and developers target rates of return which affect the value they are likely to put on RED projects.

The key implications of this are that a strong economic case exists for establishing RED provided that:

- every potential RED project is subject to further appraisal as part of an outline business case
- RED retains the flexibility to exit from its projects at different points, depending on what the evidence suggests is likely to offer the best value for money.

As part of this process, particular attention needs to be given to incorporating:

- the electricity price projections to underpin the revenue estimates in the financial case;
- an updated view of expected cost inflation
- the impact – if any – of technological developments, for example related to storage
- the returns likely to be sought by potential developers and investors and their implications for the value of RED (at different exit points).

The preferred delivery option for RED is therefore:

- for it to be established as an arm's length delivery unit, with a public sector ethos, which would retain policy alignment, decision making and access to information wholly within Ministers' control. The company *[information redacted]* and the income it will generate would be wholly owned by Welsh Government. Decisions on project development funding will be made by Welsh Ministers *[information redacted]*
- for it to be responsible for the development of projects up to securing a planning consent. Decisions can be taken on a case-by-case basis as to whether to realise the value through sale after consents are secured or to progress into construction and the operational phase for a short period or its whole life (30 years), depending on the particular economic and financial conditions at the time.

In order to maintain optionality for RED, the Financial, Commercial and Management Cases of this SPBC analyse the implications of creating RED to develop and manage a portfolio of projects – sufficient to meet its strategic objective – but without committing to specific strategies (e.g. in terms of how long projects are held by RED). *[information redacted]*

As a minimum, projects within the portfolio would be developed up to the point of securing a planning consent, with phase gates to confirm risks are manageable, and decisions on progressing through construction and into the operational phase taken on a case by case basis. That will allow each decision to reflect the market conditions, resource availability and risk appetite at the point of decision.

4.0 COMMERCIAL CASE

4.1 Introduction

The commercial case sets out a high-level description of the proposed commercial delivery model for RED Ltd, to demonstrate it is commercially viable.

The preferred delivery option identified in the economic case anticipates that RED Ltd will be responsible for the development of projects up to securing a planning consent and the subsequent sale of the projects and that decisions on progressing through construction and into the operational phase would be taken on a case-by-case basis, depending on the particular economic and financial conditions at the time. For that reason, the Commercial Case sets out what the commercial delivery model would be under the various project phases, if Welsh Government were to retain projects beyond the development phase, setting out the nature of the commercial relationship between Welsh Government and RED Ltd. Additionally, a potential sales process is outlined.

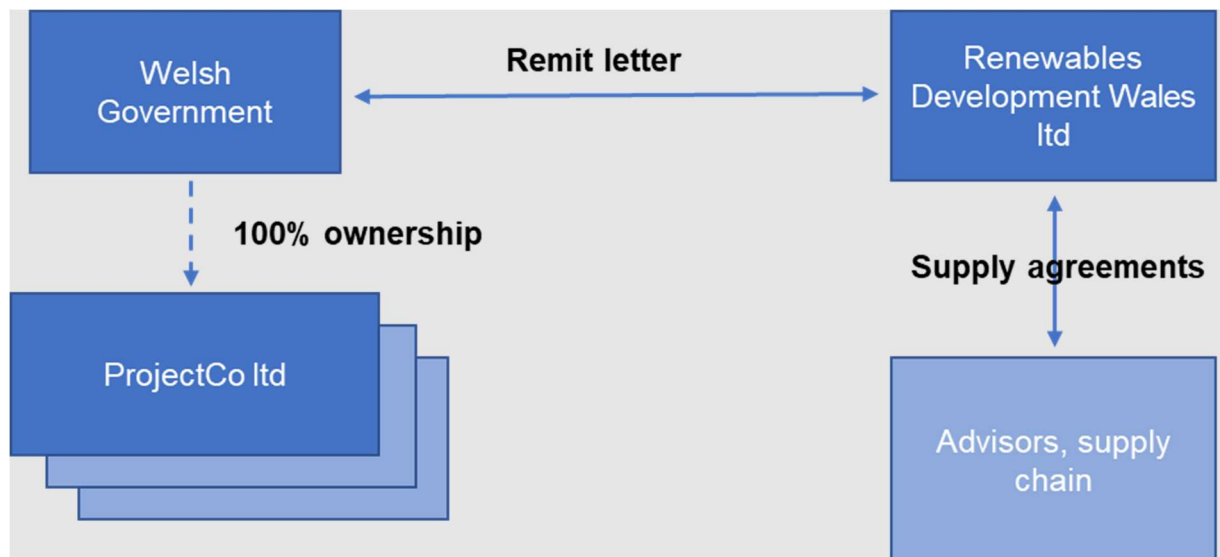
4.2 Development Phase

During the development phase RED Ltd will develop projects, providing development capacity and capability.

Projects will be commercially established by creating a Special Purpose Vehicle (referred to as a ProjectCo) for each individual project, and each being a company limited by shares that is wholly owned by Welsh Government, within which the commercial rights, consents and obligations sit that will give Welsh Government, as its owner, the right to deliver the project once consent has been obtained. It is not anticipated that ProjectCo will employ staff, as all project related activity will be performed by RED Ltd and its supply chain.

Figure 1 illustrates this structure.

Figure 1 – Proposed Structure



The RED Ltd team will have development, technical and engineering expertise. This team will require external project support in areas such as environmental impact assessment, engineering, electrical, civils design and construction. It is anticipated that these services will be procured through the Heat Networks and Electricity Generation Assets (HELGA) Dynamic Purchasing System (Service 1) and its successor mechanisms.

The proposed approach is to procure a single supplier for each service area, who would use sub-contractors, rather than a separate contract for each project. This will drive a number of benefits including:

- **better pricing and value for money** – due to the size and importance of the contract, plus the ability to better manage resourcing through multiple projects
- **significantly lower procurement process costs** – due to the need for one tender rather than multiple tenders, and thus enabling focus on performance management rather than distraction of regular tendering
- **efficiency of RED Ltd only managing a single contract/supplier** – meaning all effort can go into properly managing that contract rather than splitting across several different contracts/suppliers.
- being a **higher priority customer** than if requirements are split, helping to enable better resource allocation to projects by the supplier
- **clearer risk apportionment** – in having a single lead organisation
- **efficiency for supplier resources** – in applying a single RED Ltd approach for use on all projects.

Social value requirements will be included in the procurement to incentivise Welsh contractors being included in the supply chain.

Additionally, the RED Ltd team will require project support in areas such as property agreements, legal advice, procurement and accounts. Further work is required to establish which support could be provided by Welsh Government under a Memorandum of Understanding and any risks from this approach.

4.3 Construction Phase

If Welsh Government were to decide to retain a project rather than to sell it following development, RED Ltd would continue with the construction of the project. In such a scenario the key construction elements to be procured include turbines and supporting infrastructure, components and auxiliary systems.

Construction – Turbines

There may be potential to pursue a wider collaboration given the potential growth in the region for wind turbines. The RED Ltd team would engage with other potential projects and both private and public sector developers to identify whether there are collaboration opportunities such as co-ordinated procurement.

In the absence of such a wider collaborative approach, a procurement framework would be created that includes supplier ranking. The framework tender would be based on the expected requirements for projects, with options to extend, and the top-ranked bidder would then be directly awarded the work. If a contract could not be concluded with the top-ranked supplier, the next highest ranked supplier on the framework would be approached until a contract would be successfully agreed.

If, following the conclusion of the framework, requirements were to have changed and a direct award would no longer be appropriate, a mini competition would be used with the updated requirements. This mini competition would be expected to be fairly short unless requirements had fundamentally changed.

The framework would provide a number of benefits vs a single one-off procurement, without any notable extra work, including:

- **reduced procurement risk** if the requirements change or an alternative supplier is needed, due to the faster tendering and greater flexibility of a framework

- **enhanced buyer power** by providing a credible fast tendering option if there are issues on price or performance with the initially selected supplier
- **an easier to market route for other Welsh projects** and potentially an income source from any non-Welsh clients using the framework
- **encourages bidders**, as this will be the only dedicated public sector wind turbine framework in the UK and **supports decarbonisation across the public sector** through access to our leading approach.

The approach would be to tender with a scope that covers all relevant projects – to maximise the interest in the competition and the potential economies of scale. Given the production timescales and market dynamics, an early procurement for turbines would be planned.

Having the supplier identified early would also help in supporting technical planning and enable clarity for the supporting components and auxiliary systems, including better risk apportionment. The contract would provide option pricing for each individual project, with a benchmarking provision for cost control and outturn performance. If the analysis shows value for money is being achieved for the next site, the existing contract would be used. This would provide the opportunity for a long high value contract supporting value for money and economies of scale. It would also help support business case development/upgrades for each site in scope. A new procurement would occur only if value for money tests were not passed. The framework would then be used to provide a fast tender process.

Welsh content would be encouraged by the focus on local supply to reduce risk and emissions e.g. from delivery and travel, with the potential value of the contract making local sourcing more viable and attractive to bidders.

The procurement for the supporting infrastructure, components and auxiliary systems would follow the procurement approach of the turbines procurement, creating a framework where the top-ranked bidder would then be directly awarded the work – unless requirements have changed and a mini-competition were to be required.

The approach would also be to tender with a scope to cover all the projects. The plan would be for this to include the initial operational and maintenance phase, to cover snagging and any early operational issues, and an option to extend for longer if desired, with use of benchmarking to support value for money pricing. Similar to the procurements noted above, the approach would help to bring a number of opportunities to the programme, including greater Welsh content and better value for money.

4.4 Operational Phase

Turbine spares would form part of the turbine procurement to help reduce risks from obsolescence and excess charging, whilst also covering warranty and scheduled part replacement for initial years.

Spares relating to supporting components and auxiliary systems would be included in the main tender where there is an identified risk from obsolescence.

The maintenance and repairs service would be assessed regularly to determine the best value for money approach. This is likely to be influenced by market development and capacity, which in turn is likely to be partly driven by the portfolio of projects.

The asset management contract required during operation would be procured in advance of the operational phase and in case of sale would be novated to the new project owner at the point of sale to ensure continuity of support. The asset management contract would be awarded to cover all projects within the operational portfolio. The contract would cover all operational phase technical, commercial, financial and site management responsibilities for

the operational fleet. This could see a fully wrapped service that also incorporates operation and maintenance services and supervision of the management of spares.

The market continues to develop and will be assessed before the supporting components and auxiliary systems tender to determine how asset management services will interact with such activities, particularly during the initial operational period. The assessment will determine whether procurement of maintenance services and spares are best undertaken through the asset management contract or separately, with the asset manager then providing overall co-ordination.

Ideally a framework would be used, whether existing at the time of the programme's requirement or created by the programme, following the approach for turbines and supporting components and auxiliary systems, to facilitate quick replacement of the supplier if needed. The expected base contract duration is five years, with optional extensions and break points based on performance, to support flexibility around the retender date.

4.5 Sale of Projects

[information redacted]

The sales process used to select the preferred bidder will be based on current legal advice and will depend on the shareholding being sold and the form in which the overall project will be offered to the market.

The process will need to comply with the relevant Subsidy Control rules. This is likely to require an open, competitive process to identify and secure the market price for the asset.

The sale of shares in an asset will not fall under the Public Contract Regulations 2015. Nevertheless, it is anticipated that the award process will use a range of criteria including:

[information redacted]

It should be noted that the desire to include social value and community/local ownership as criteria will need to be balanced by Subsidy Control rules, which require a fair market price to be paid for the assets. This can be addressed by:

[information redacted]

Market engagement activity will be held in advance of any sales process to confirm market interest, anticipated sales value and ensure the sales process will be designed in such a way as to maximise value for money.

4.6 Retaining a Minority Stake at the Point of Sale

The Economic Case has set out a number of potential non-financial benefits that could be delivered if Welsh Government were to retain a minority stake in ProjectCo, enabling it to influence the delivery of the project during the operational phase even if delivery responsibility is transferred to the successful bidder.

As there would be an ongoing relationship with the private sector majority owner, the successful bidder would be required to *[information redacted]*

More generally Welsh Government's ongoing involvement in the project, supported by an effective communications strategy, may retain the support of local people and other stakeholders, helping to ensure the success of the project.

It is understood from the experience of the Mutual Investment Model, where Welsh Government holds a *[information redacted]* stake in projects, that private sector partners value Welsh Government involvement, which can provide direct understanding of the strategic policy and political context within which the project is being delivered. Nevertheless,

it should be considered that from a bidder's perspective, the lack of full control may also impact potential attractiveness *[information redacted]*.

4.7 Community Ownership of a Minority Stake

In addition to any Welsh Government minority ownership, there has been significant interest in exploring whether communities near projects could take a minority stake in the project post construction. The potential and approach to this will be explored in the Benefits Realisation Strategy.

Whilst this aligns strongly with Welsh Government policy, inevitably the practical opportunity for community involvement in the project will depend on a range of project-specific factors including the size and location of the project, the size of the local community, their ability to raise finance and the willingness of the local community to be practically involved in the oversight of the project. The specific approach to community involvement will be set out in the respective business cases for each project.

4.8 *[information redacted]*

[information redacted]

4.9 Accounting Treatment

The accounting treatment for projects will depend, among other factors, on the specific funding model selected. Nevertheless, it is assumed that the project will be on-balance sheet up until the point of sale. The accounting treatment from the point of sale will be dependent on the percentage of ProjectCo sold. The degree of control retained by Welsh Government will be closely related to the balance sheet treatment.

4.10 Conclusion

The commercial model for the delivery of projects follows well established practice. Projects will be delivered in individual SPVs, developed by RED Ltd. The market for technical and advisory support during the planning phase and turbine and supporting infrastructure, components and auxiliary systems and services is mature and standard procurement approaches can be used to obtain the required support. A legally compliant sales process needs to be developed that meets UK Subsidy Control, achieves value for money and meets the wider desired public sector benefits of the programme.

5.0 FINANCIAL CASE

5.1 Introduction

The purpose of the financial case is to assess the affordability of the model for the preferred solution and highlight any funding or accounting implications that arise.

The Economic Case indicates that different holding periods of individual projects can be envisaged depending on the particular economic and financial conditions at the time. Consequently, the Financial Case sets out the estimated financial impact of construction and operation of wind and solar projects, in the event that Welsh Government decide to retain projects beyond the development phase.

5.2 Cost of Establishing and Running RED Ltd

Annual costs for running RED Ltd have been estimated based on the resourcing required to deliver the preferred solution, with the option to take projects through construction and operation in order to enable flexibility of approach across the portfolio.

It is proposed that RED be launched in April 2024 established with up to 12 staff members in the initial years. This team will initially progress up to *[information redacted]* wind projects and *[information redacted]* solar projects, with the intention of achieving planning consent for *[information redacted]* wind and *[information redacted]* solar projects as set out in the preferred option. Estimated costs are set out in Table 8 for running RED Ltd in nominal terms adjusted for inflation.

Table 8 – Estimated Nominal Costs for Running RED Ltd

[information redacted]

5.3 Project Costs

The costs of the portfolio of projects developed under the preferred option have been estimated based on a standard project reflecting the anticipated timing, revenue and costs of the top *[information redacted]* selected wind and a solar project in terms of feasibility and viability currently being assessed for selection for development by the RED team. The costs and revenues of the average *[information redacted]* onshore wind and *[information redacted]* solar projects during each of the phases of the project are assumed to be as follows:

Table 9 summarises the estimated annual nominal cost of standard wind and solar projects during the **development phase**:

Table 9 – Estimated Nominal Cost of Standard Wind and Solar Projects During the Development Phase

[information redacted]

This assumes that development of a wind energy project takes six years and development of a solar energy project takes two years.

Table 10 summarises the nominal cost of standard wind and solar projects during the **construction phase**:

Table 10 – Estimated Nominal Cost of Standard Wind and Solar Projects During the Construction Phase

[information redacted]

Table 11 summarises the nominal cost of standard wind and solar projects during the **operational period**:

Table 11 – Estimated Nominal Cost of Standard Wind and Solar During the Operational Period

[information redacted]

. *[information redacted]*

Table 12 provides a **summary cash flow** for standard wind and solar projects, including expected net present values (NPVs) and project internal rates of return (IRR). The financial outputs for a standard *[information redacted]* wind project suggest an IRR of *[information redacted]* and a NPV of *[information redacted]*. The solar project (*[information redacted]*) assessed in this business case achieved an IRR of *[information redacted]* with a net cash flow of *[information redacted]* over its operational lifetime. *[information redacted]*

Table 12 – Summary Cash Flow

[information redacted]

5.4 Total Projects Cashflow of the Preferred Solution

The quantum and profile of the costs *[information redacted]* is summarised in Table 13. These costs are shown in nominal terms (i.e. include inflation) and are risk adjusted/include contingencies. *[information redacted]*

Table 13 – Total Costs

[information redacted]

It may also be possible for RED Ltd in future to carry out development for other bodies to realise an additional income stream. It is important to note that RED Ltd will operate for several years before income is received.

5.5 Conclusion

The costs for the development of onshore wind projects, up to final investment decision and not including pre-construction grid connection costs, are estimated to be approximately *[information redacted]* per project over a five year period. The costs associated with the programme will need to be contained within future budget allocations. Notwithstanding the preferred option set out in this business case, the profile of the project portfolio will need to be scaled according to resource availability.

6.0 MANAGEMENT CASE

6.1 Introduction

The management case reflects the proposed organisation of RED Ltd and the internal governance. It has been developed with consideration of established Welsh Government processes for setting up and managing wholly owned entities. This would include developing a partnership arrangement to manage the relationship between Welsh Government and RED Ltd and a framework or shareholder agreement.

An initial RED team was mobilised in November 2021, tasked with defining ways of working, carrying out early feasibility work on a pilot project, planning resources for a feasibility review of the Welsh public estate and developing a portfolio level risk register and procurement strategy.

Welsh Government established a Programme Board in January 2022 to oversee the development of RED and the identification of a portfolio of projects. The current Board and programme team are transitional arrangements until the proposed company is established and a permanent Board is appointed. This Board will continue until RED Ltd is established and a company Board is appointed and is operational.

6.2 Project Development Phases

Large-scale renewable energy projects involve several distinct phases, with key activities as set out below.

A phase-gate process will be adopted, with decision gates at key points to review risks and project economics before taking a decision to proceed to the next phase. *[information redacted]* Delivery of the development stage of each project will involve taking the project through the full development process.

Table 14 – Project Development Phases

[information redacted]

Following the final investment decision, the project would move into construction phase. Following construction, the project moves into the operational energy generation and supply phase.

A phase gate process will be adopted for the development of each project, with decision gates at key points to review risks and project economics before taking a decision to proceed to the next phase. Phase gates are no-turning-back moments in the project lifecycle at which the Board usually commit to ongoing investment or take significant decisions on how to progress or stop the project. Welsh Government and/or the Minister will be able to retain control over final decisions, if desired, depending on how RED Ltd is structured.

Each project will have its own *[information redacted]* as needed to provide sufficient information for the Board to agree how to proceed. The phase gate process is set out below:

[information redacted]

Each step is described below with more detail.

[information redacted]

Assuming a decision is taken to retain the asset through to the operational phase, further assessment of project viability, project uncertainty and risk would be carried out during the project definition phase to ensure that all relevant factors have been considered prior to FID.

During the project definition phase wind farm design is refined to secure optimal layout of the wind farm, procurement of construction and turbine contracts is progressed and new insights

on energy yield, capex and opex feed into a refinement of the financial model which in turn supports financial consent from investors and lenders.

[information redacted]

6.3 Establishing RED Ltd

In advance of developing the SPBC, a cross government group of officials and external partners, including the RED Programme Board, considered and analysed the “institutional home” options for the renewable energy developer function. Four options were considered:

- Option 1: establishing a standalone company
- Option 2: adding the functions to the remit of an existing wholly owned Welsh Government arms-length company
- Option 3: housing the developer in another Welsh public body
- Option 4: housing the developer within Welsh Government.

Discussions were held in small groups and via workshops to appraise the options. These discussions produced a summary of risks and benefits of each option and the options were considered against a set of critical success factors.

The options analysis identified option 1, establishing a standalone company, as the preferred option. This option was considered to provide the following key benefits:

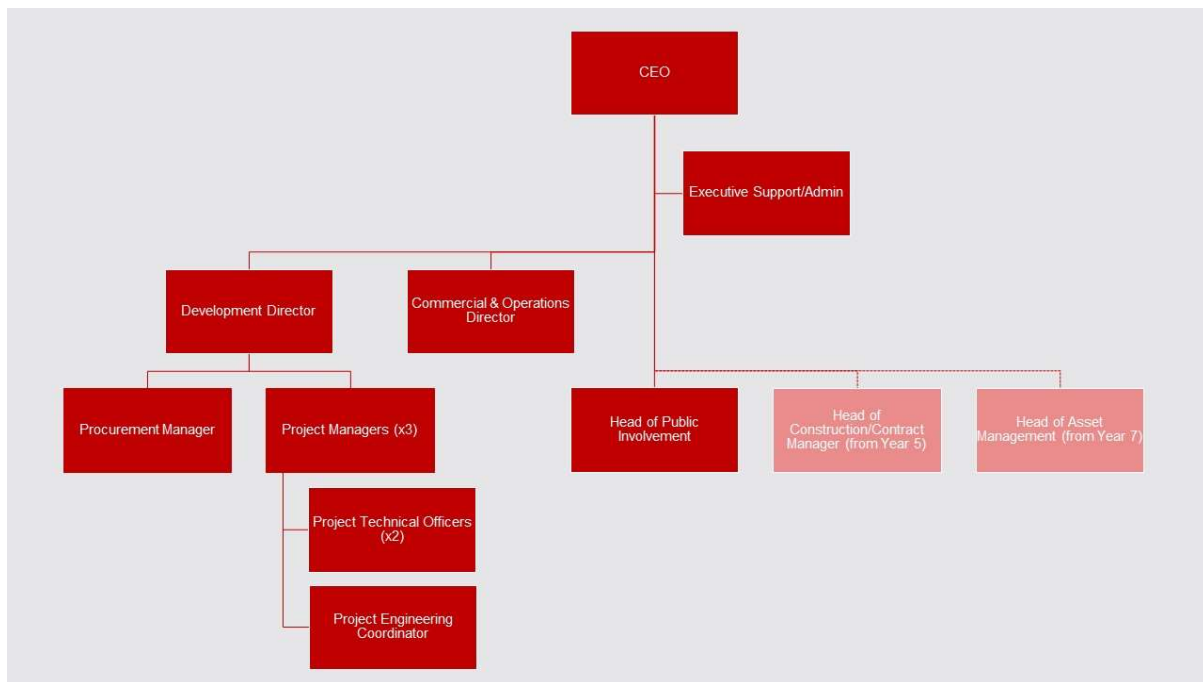
- a standalone company is likely to be more agile/nimble/dynamic/flexible
- ability to attract external investment and reuse/recycle
- a standalone company can focus on delivery and implement faster without competing priorities
- ability to attract key skills, potential to offer market remuneration if operating outside Welsh Government or part of another public body
- opportunity to broaden scope over time
- efficiency through lessons from establishing other Welsh Government companies (Cwmni Eginio in particular)
- clear separation from Welsh Government’s planning and other decision making roles reduces the risk of conflicts of interest.

RED Ltd will be established following Welsh Government practices for wholly owned entities. The relationship between RED Ltd and Welsh Government will be governed by arrangements reflecting the dual nature of an arm’s length organisation subject to company law whilst still classified as a public sector entity. A framework or shareholder agreement will be developed along with a remit or Accounting Officer letter and/or other necessary documentation. Key stakeholders will be engaged to ensure appropriate governance is established.

It is anticipated that RED Ltd will initially require 12 core staff with some services/functions bought in as required. This is based on an initial team including three FTE project managers to develop a portfolio of *[information redacted]* large wind energy projects. However, the final number of project managers will be determined by the desired number of projects taken forward.

If a decision is taken to retain ownership of projects through the construction and operational phases, new roles will need to be added to the team at the appropriate time to oversee construction and asset management contracts and activity.

Figure 2 – Proposed Initial RED Ltd Structure



To maintain optionality across the portfolio, appropriate resources for the construction and operational phases have been included in the proposed company structure as set out above. Robust governance, due diligence and monitoring arrangements would be put in place prior to and during the lifetime of the company. This will ensure RED Ltd is completely aligned with Welsh Government policies and public funds are cost effectively used and safeguarded. It is anticipated that legal, technical and commercial advisors will be procured to support RED Ltd and the portfolio of projects as needed. The resourcing of the specific projects will be detailed within the project business cases.

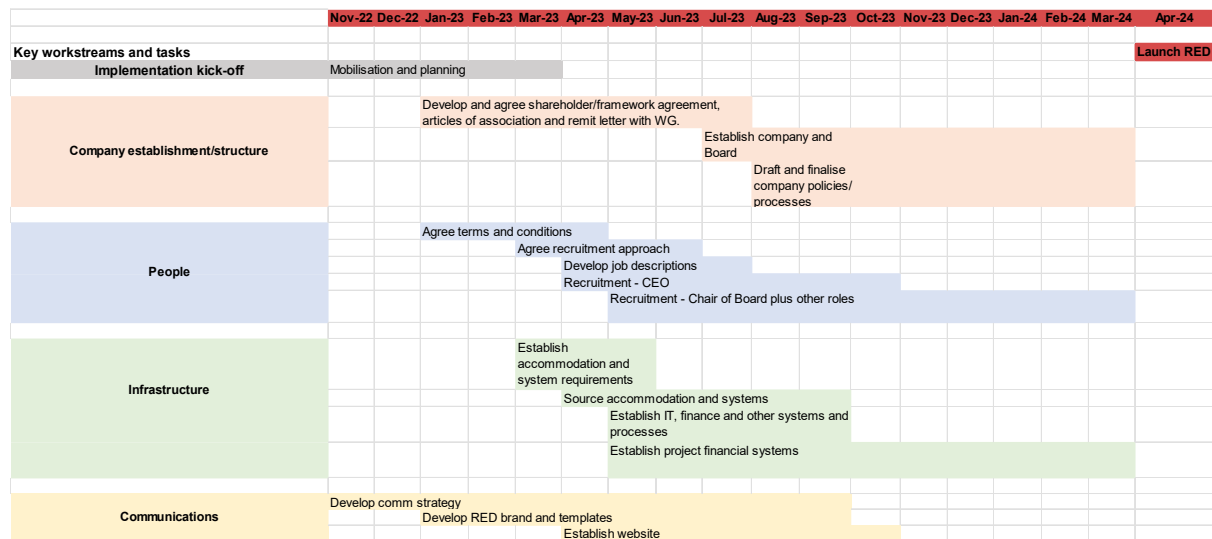
6.4 Implementation Plan

To launch RED Ltd, four key work areas are proposed to:

- develop the company structure and processes including the project vehicles
- recruit the permanent team
- establish the infrastructure including ICT
- develop the name, brand and identity and approach to engaging people on the projects.

A multi-disciplinary team is engaged to ensure robust development. It is envisaged that RED Ltd can be launched by April 2024 as summarised in the implementation plan in Figure 3.

Figure 3 – Implementation Plan



A number of areas will follow including:

- developing a benefits realisation strategy
- communications and public relations strategy
- developing a Welsh language policy for the entity, along with other relevant policies for RED Ltd
- supply chain development activity
- further work to develop local ownership models
- *[information redacted]*
- consideration around training, accreditation and jobs
- develop portfolio level commercial strategy for *[information redacted]*
- explore estate wide opportunities to secure environmental gains from project development, including peat restoration
- develop and implement a lessons learned register.

6.5 Benefits Realisation

The success of RED Ltd will be determined by the outputs and outcomes delivered. The success criteria for measuring delivery of benefits beyond development, construction and operation of projects to Wales are likely to include:

- retaining more 'value' in Wales and using that value to deliver outcomes important to people in Wales
- promoting local sourcing
- driving skills development
- reducing energy system costs and improving system performance, including the grid
- avoiding carbon emissions.

RED Ltd will establish a process to manage the portfolio benefits as well as ensure robust measurement on a project level basis.

6.6 Conclusion

The management case demonstrates that robust arrangements are in place for the establishment of RED Ltd, monitoring and evaluation of the portfolio of projects and for lessons learned to feedback into RED Ltd's business planning cycle.

This business case makes a compelling case for establishing a publicly owned renewable energy developer and developing a portfolio of renewable energy projects on the Welsh public estate to accelerate the deployment of renewable energy generation capacity while generating greater local value.