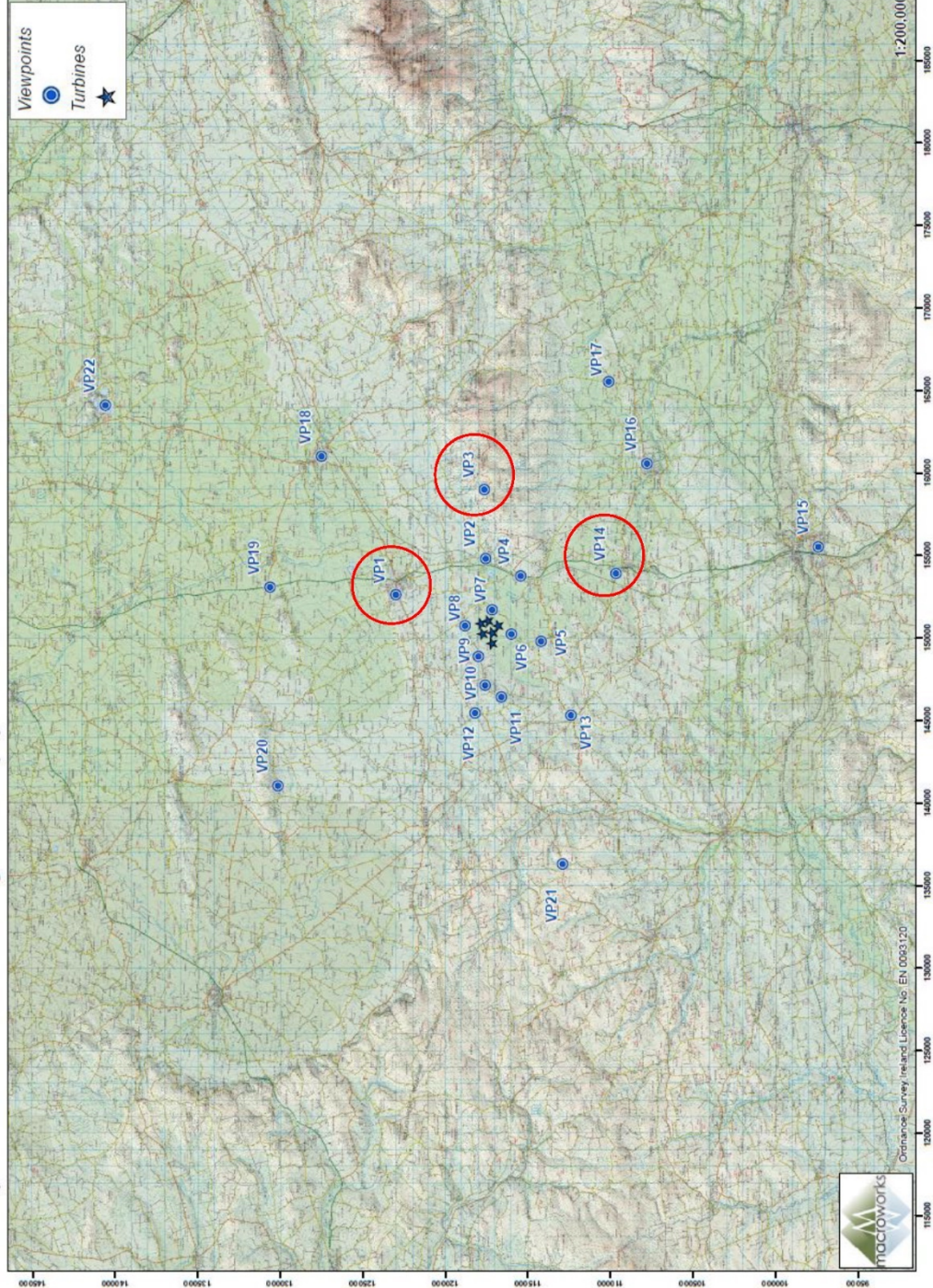


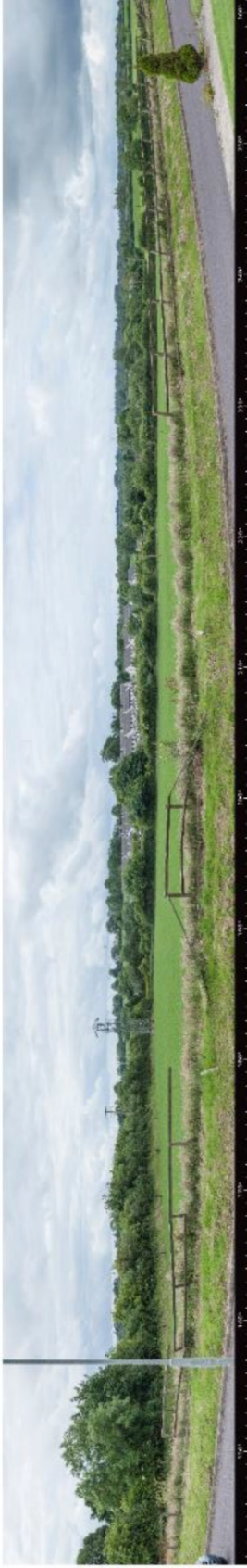
Landscape and Visuals Assessment



Landscape and Visuals Assessment



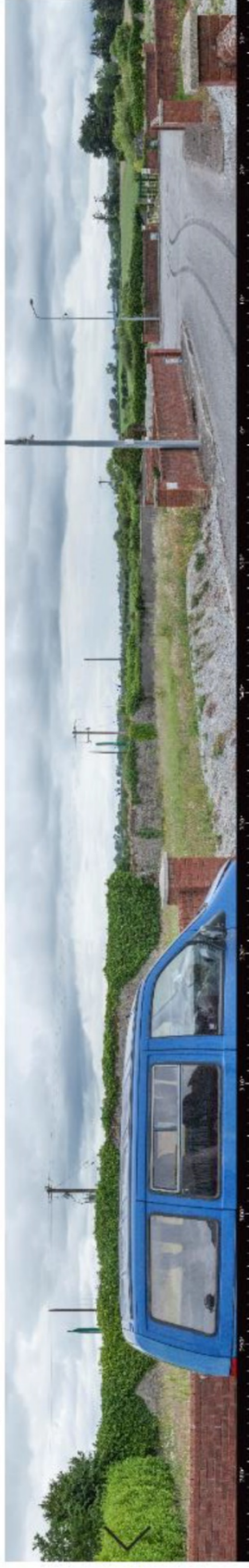
Viewpoint 1



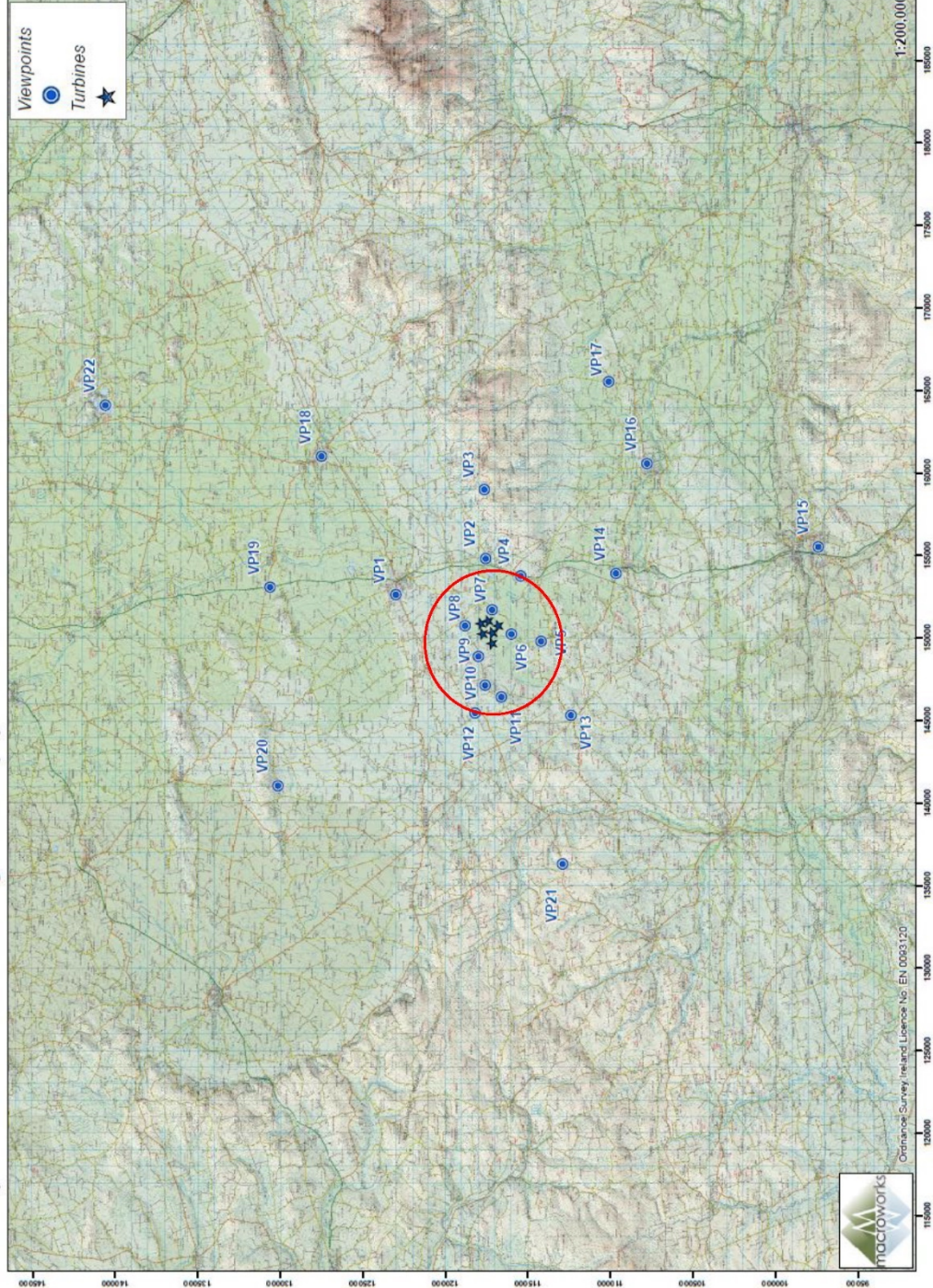
Viewpoint 3



Viewpoint 14



Landscape and Visuals Assessment

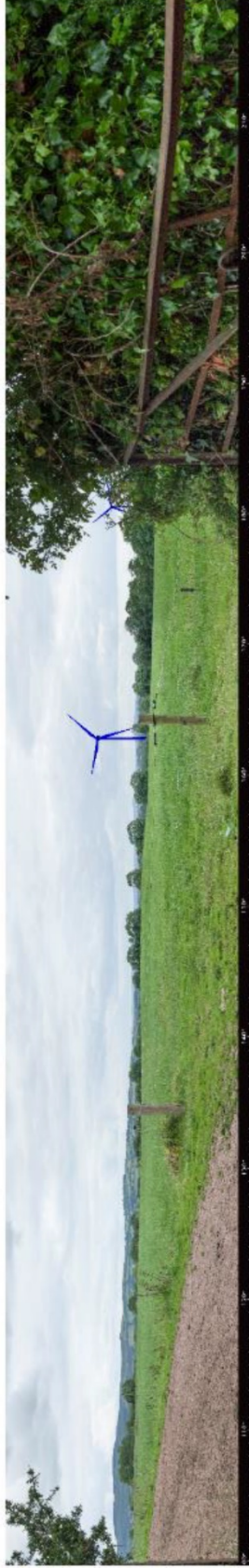


Landscape and Visuals Assessment **EMPOWER**

Viewpoint 7



Viewpoint 8



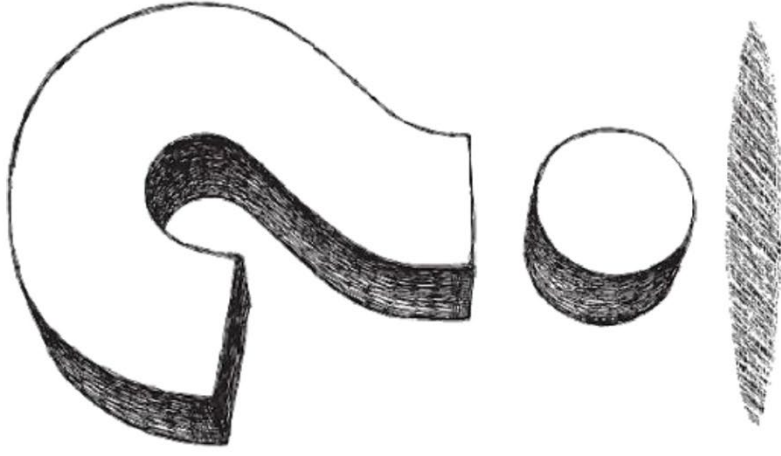
Viewpoint 5



Virtual Consultation Room

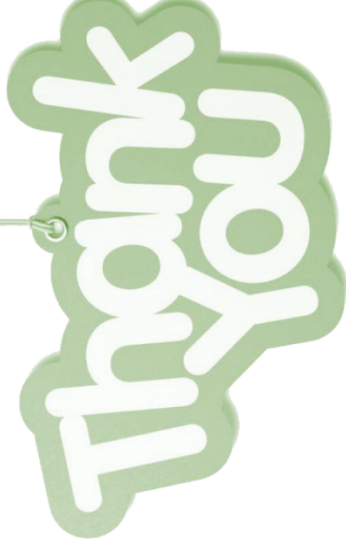


Question Time



Conclusion

- **Proposed Annagh Wind Farm**
 - 6 turbines
 - 36 MW
 - 21,249 Irish homes powered
- **Community Fund**
 - €178,494 per year
 - €1,000 per year (households <1km)
 - €500 per year (households >1km <2km)
- **Next Steps**
 - Virtual consultation room Q1 2021
 - Submission for planning in Q2/3 2021



Get in Touch

A : EMPower, 2 Dublin Landings, North Wall Quay, North Dock, Dublin 1

E : annagh@emp.group

T : 01 588 0178

Web: www.annaghwindfarm.ie

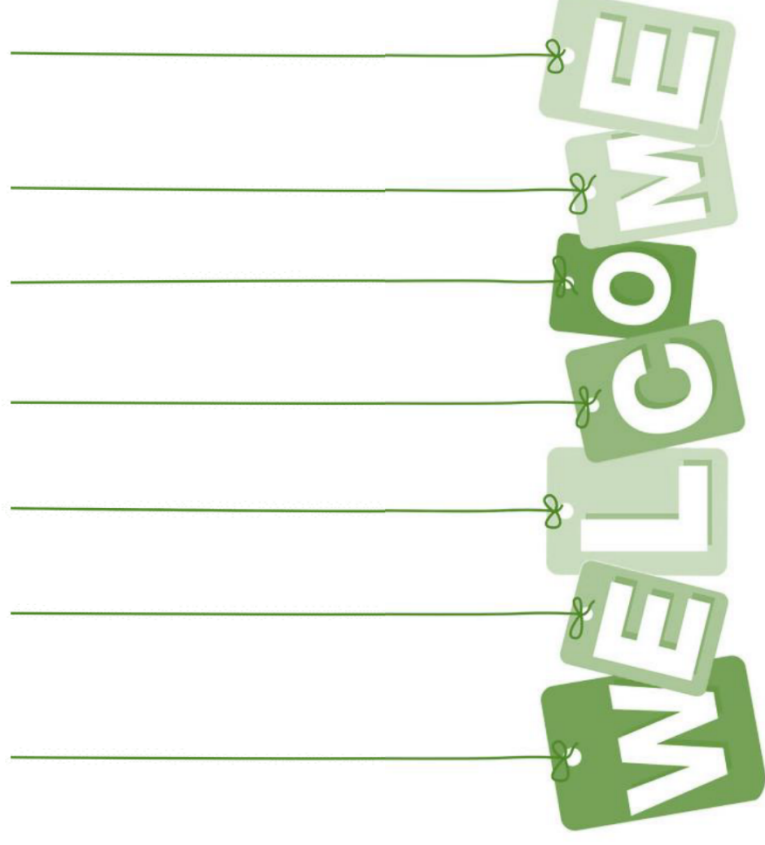
Proposed Annagh Wind Farm 2nd Public Consultation Webinar



EMPower

Annagh Wind Farm Proposal

- Company Introduction
- Wind Farm Design
- Community Fund
- Q&A
- EIA Activities
- Q&A
- Conclusion



Company Introduction



95 Years

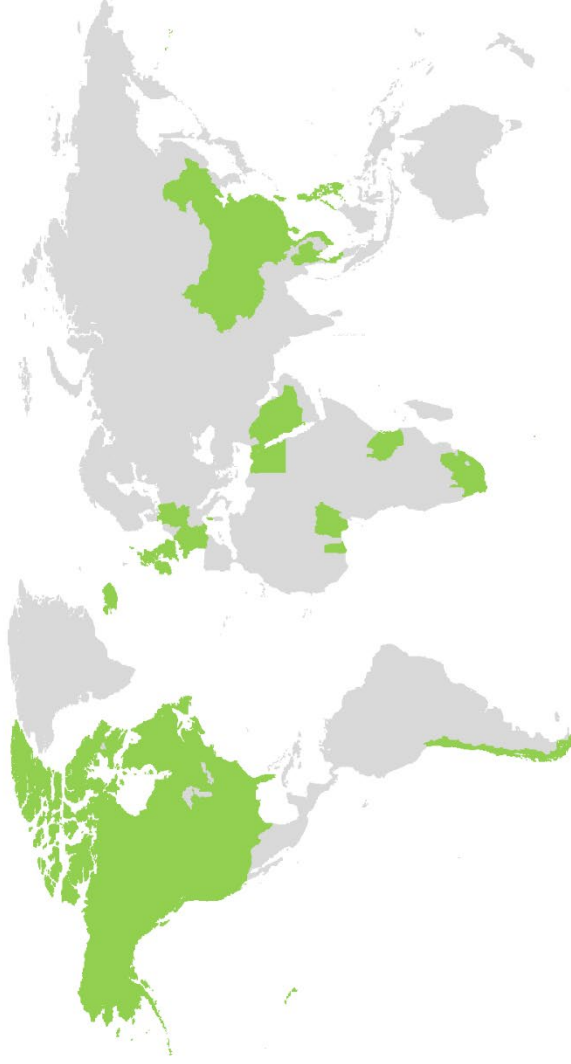
Combined Experience of
EMPower Management
Team in Renewable Energy

+700 MW

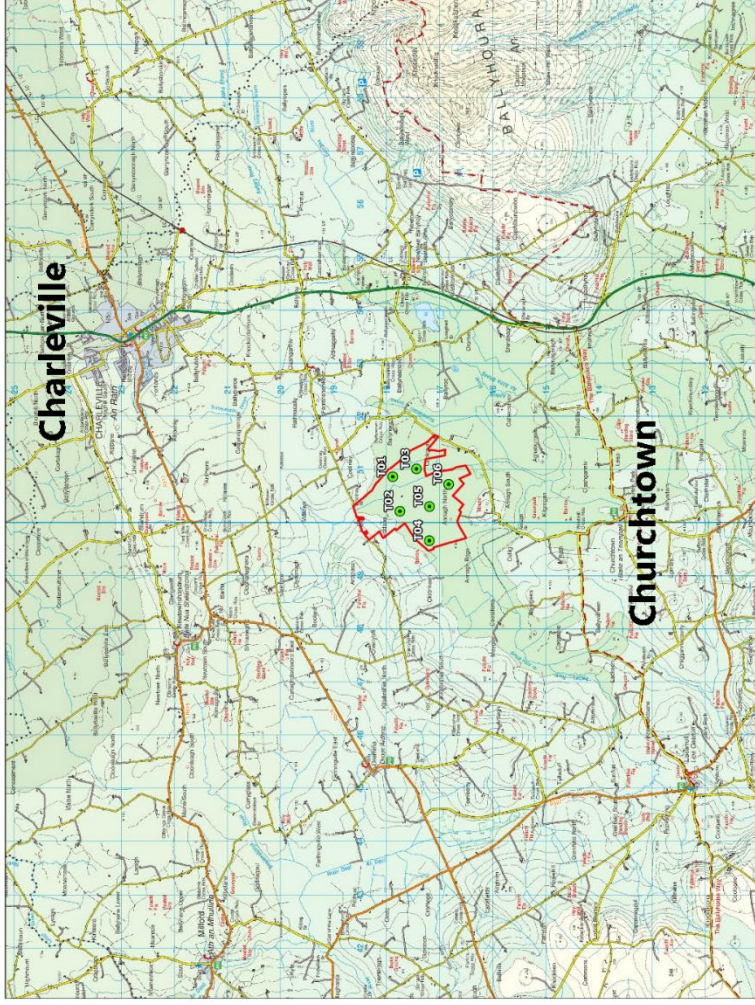
Wind Energy Capacity
Currently Under
Development By EMPower

5 Continents

Combined Geographical
Experience of EMPower
Team in Renewable Energy



Project Introduction



Annagh Wind Farm
-
**Annagh, Annagh North,
Coolcaum and Fidane in Co.
Cork**
-
6 Turbines
-
33.6 MW
-
Tip height of 175m
-
**Enough clean electricity to
power over 20,000 Irish
homes**
-
**Estimated community
benefit fund of €166,594 per
annum**



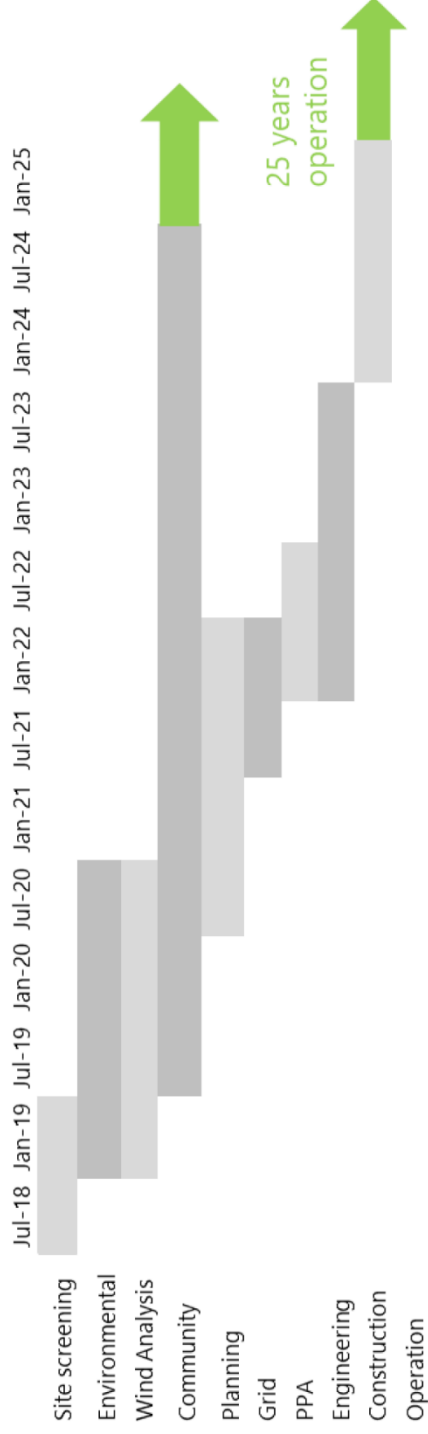
Annagh WF - Proposed Site Location



Project Schedule



Planning Submission to Cork County Council	Q3 2021
Grid Connection Submission	Q1 2022
Renewable Electricity Support Scheme Submission	Q1 2023
Construction Commences	Q1 2024



Energy Targets in Ireland

Table 7.5 Potential Metrics to Deliver Abatement in Electricity

Key Metrics	2017	2025 Based on MAAC	2030 Based on MAAC
Share of Renewable Electricity, %	~30% ²⁰	52%	70%
Onshore Wind Capacity, GW	-3.3	6.5	8.2
Offshore Wind Capacity, GW	NA	1.0	3.5
Solar PV Capacity, GW	NA	0.2	0.4
CCGT Capacity, GW	-3.6	5.1	4.7

70%

Renewables
by 2030

8.2 GW

Onshore wind
by 2030

Source – Department of Communications, Climate Action and Environment
Climate Action Plan 2019
Marginal Abatement Cost Curve (MAAC) Analysis

Site Screening



Screening analysis performed on the entire Republic of Ireland incorporating constraints such as:

- Wind speed
- Grid connection
- Environmental Designations
- Culture and heritage
- Tourism
- County Development Plans
- Existing, planned and permitted projects
- Housing



Site Screening

EMPOWER



Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

EMPOWER

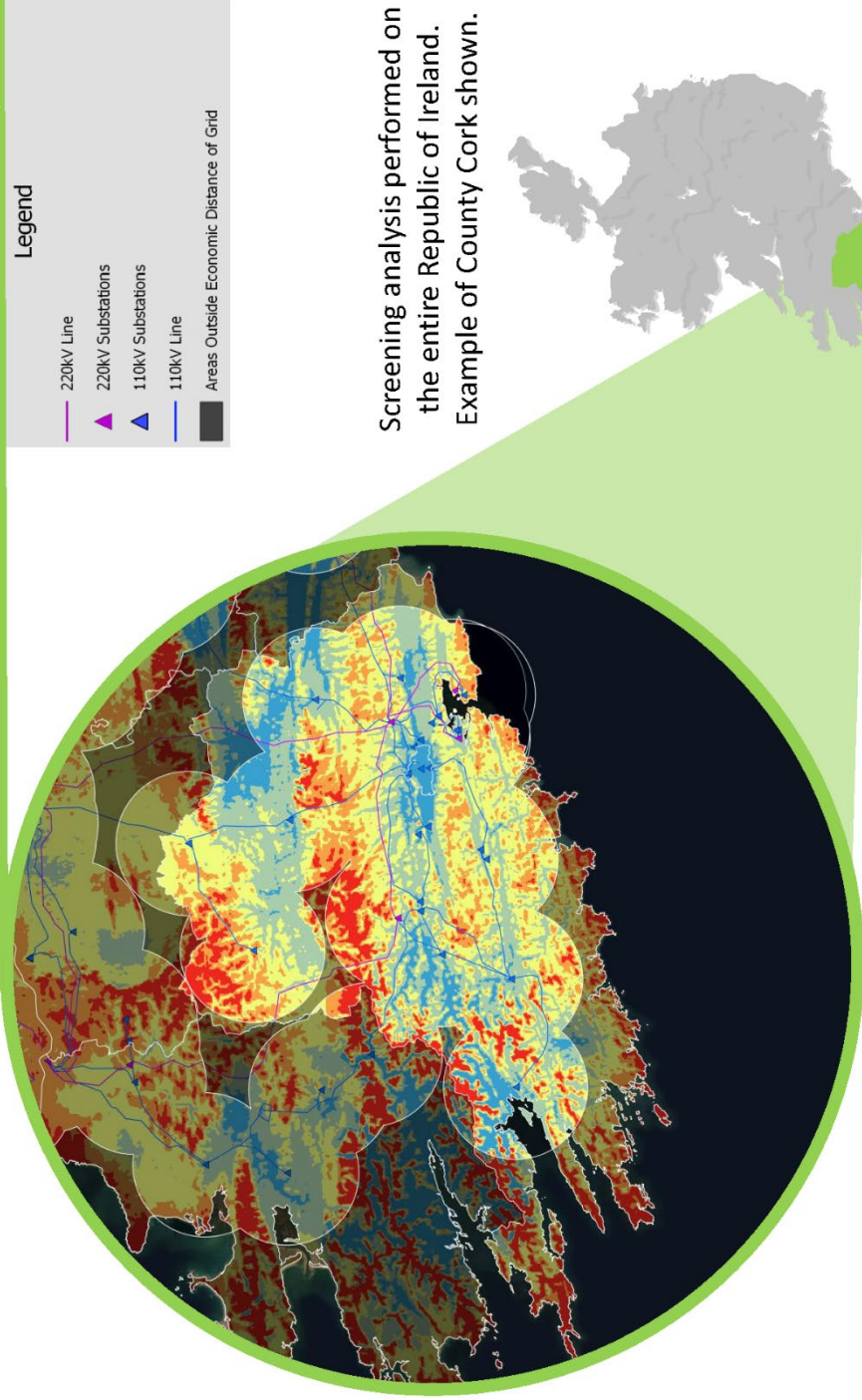


Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

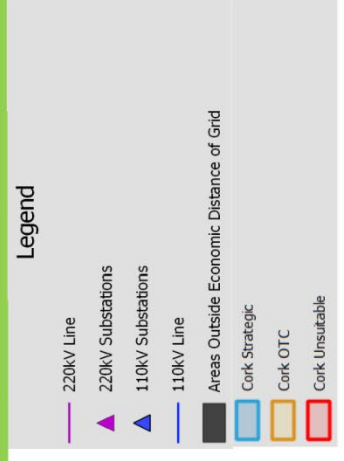
EMPOWER



Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

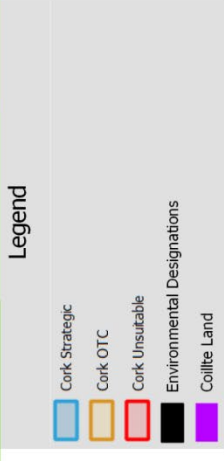
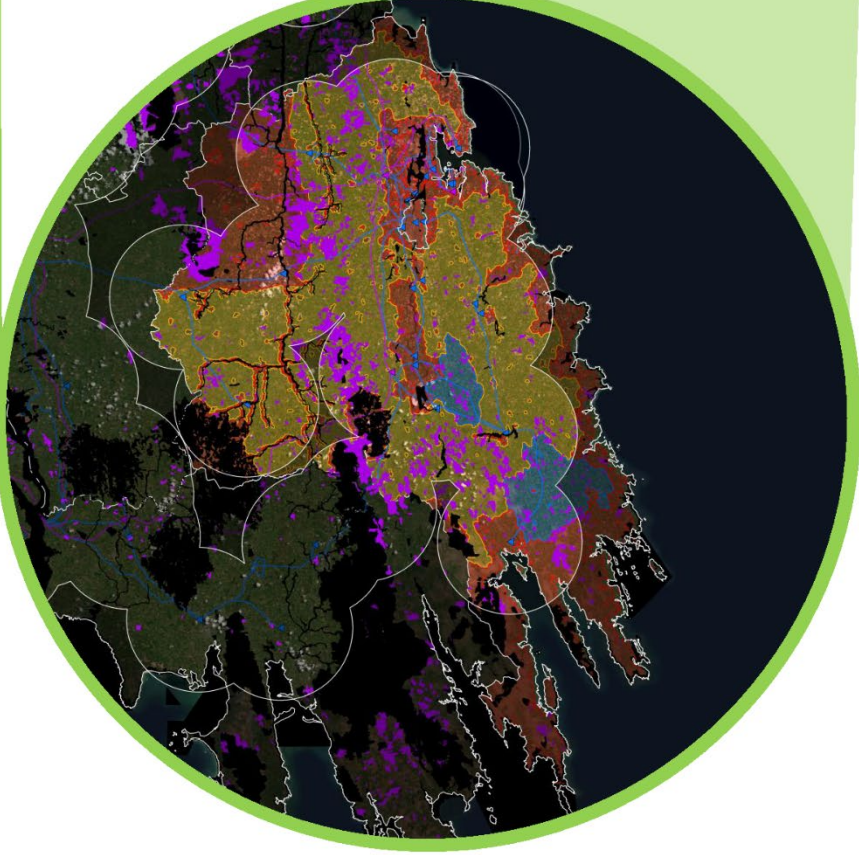


Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

EMPOWER

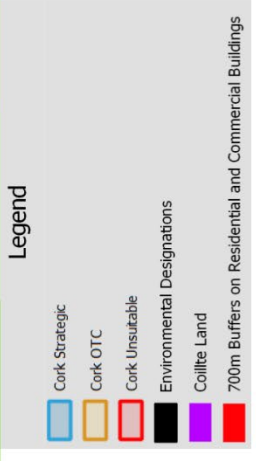
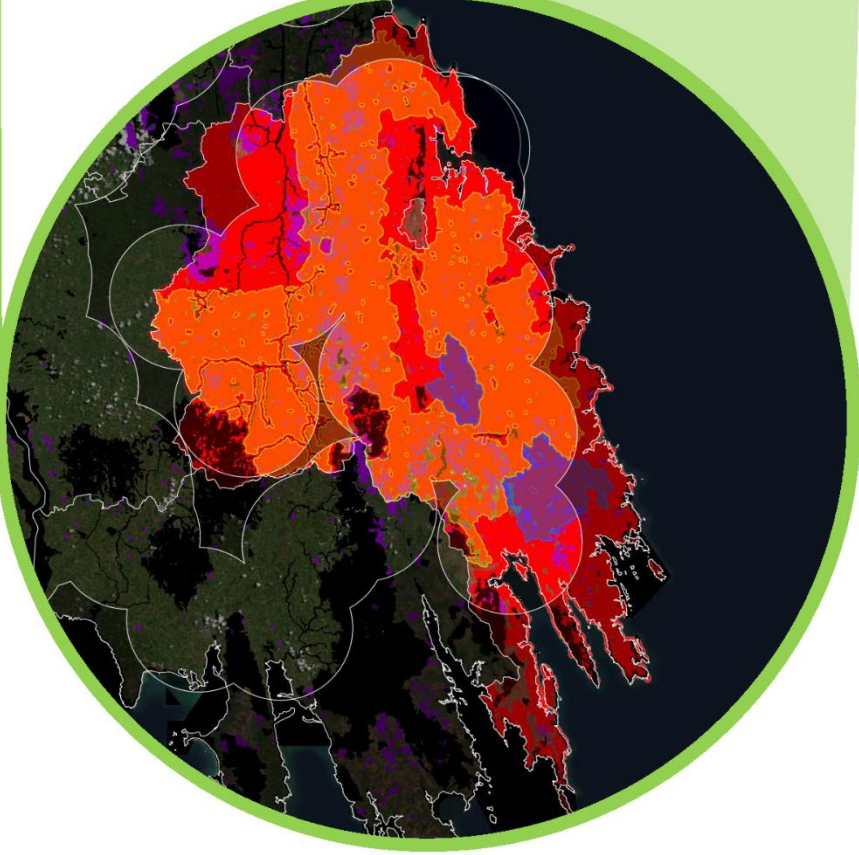


Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

EMPOWER



Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



Site Screening

EMPOWER

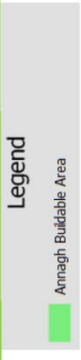


Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.



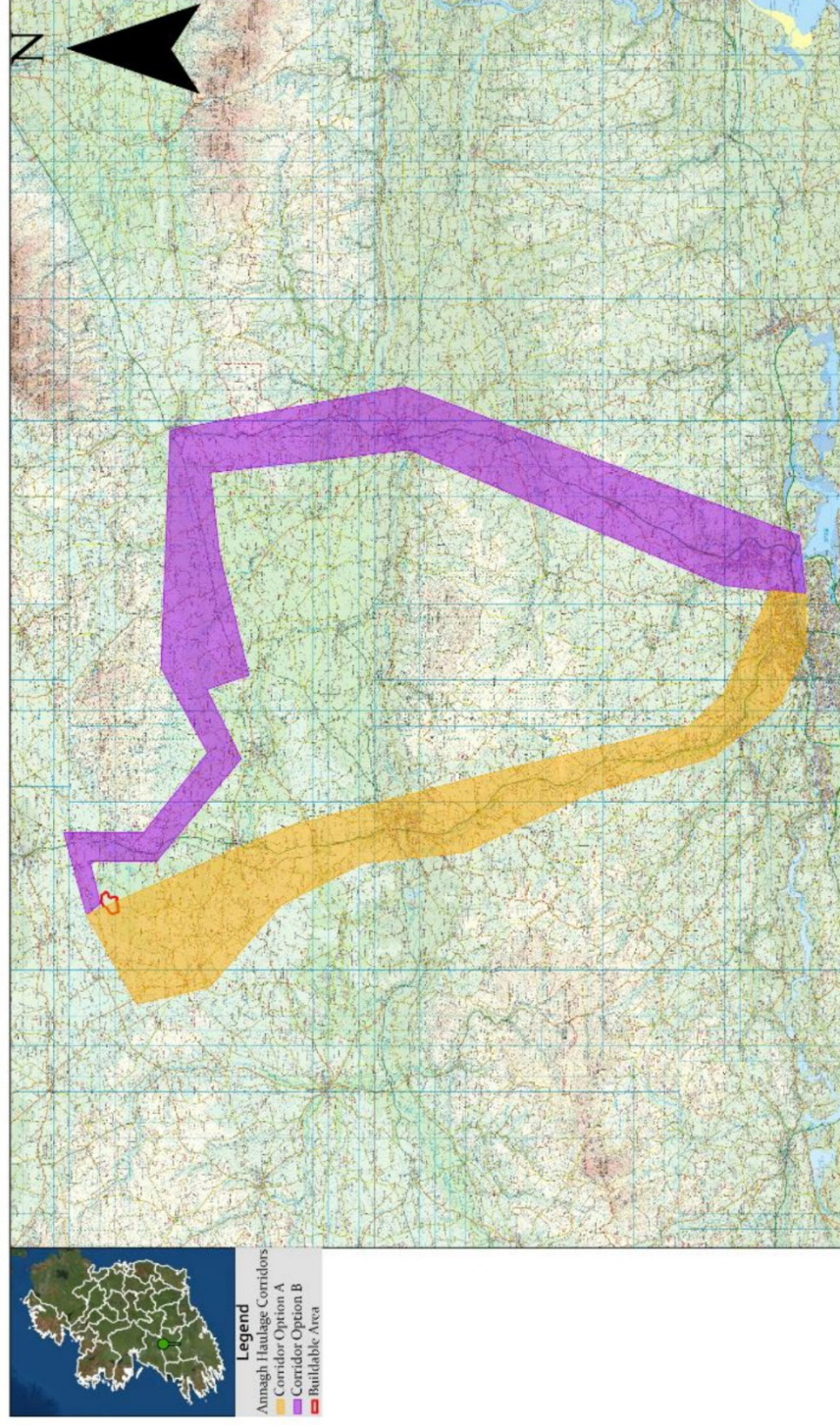
Site Screening

EMPOWER

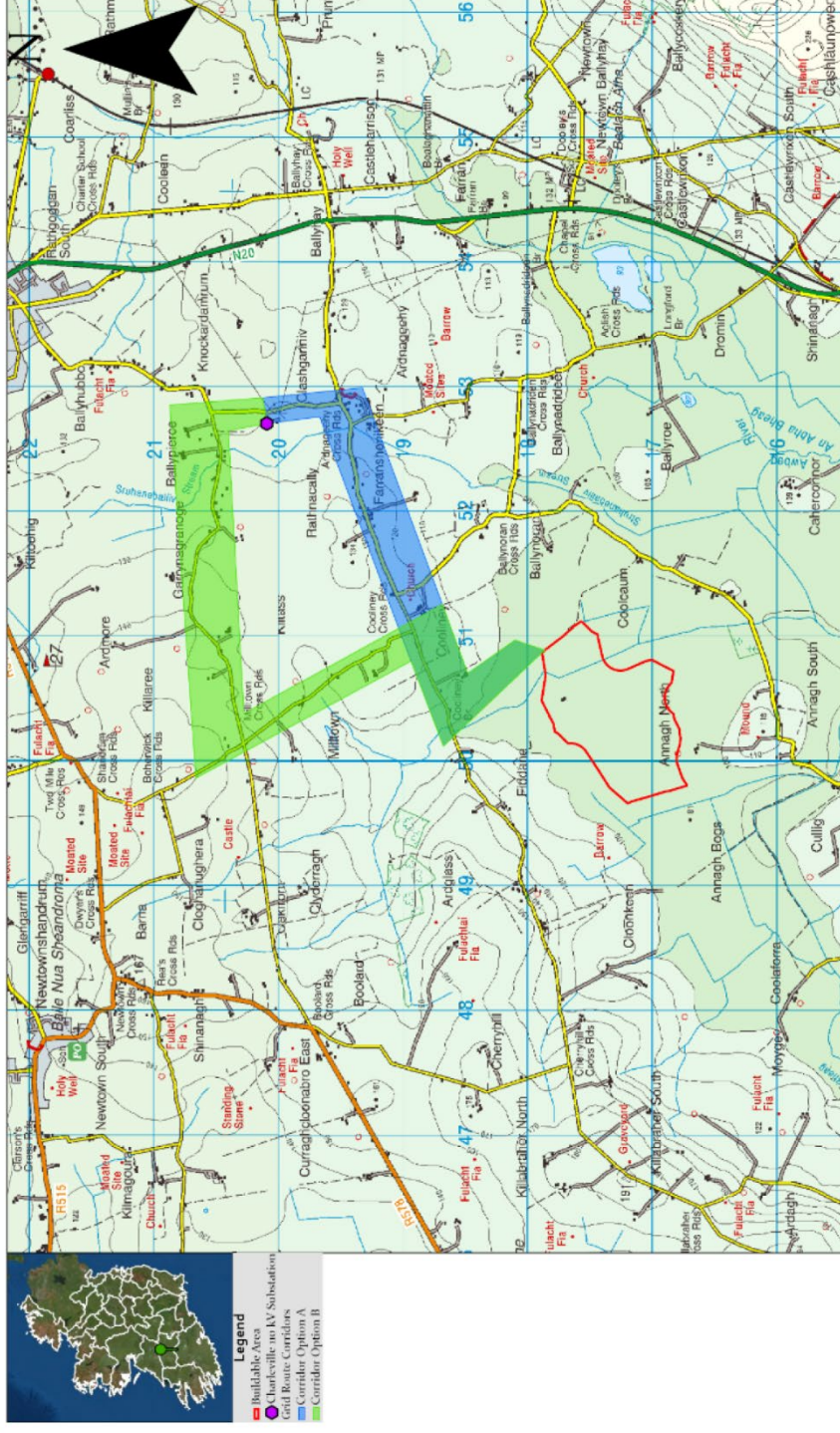


Screening analysis performed on the entire Republic of Ireland. Example of County Cork shown.

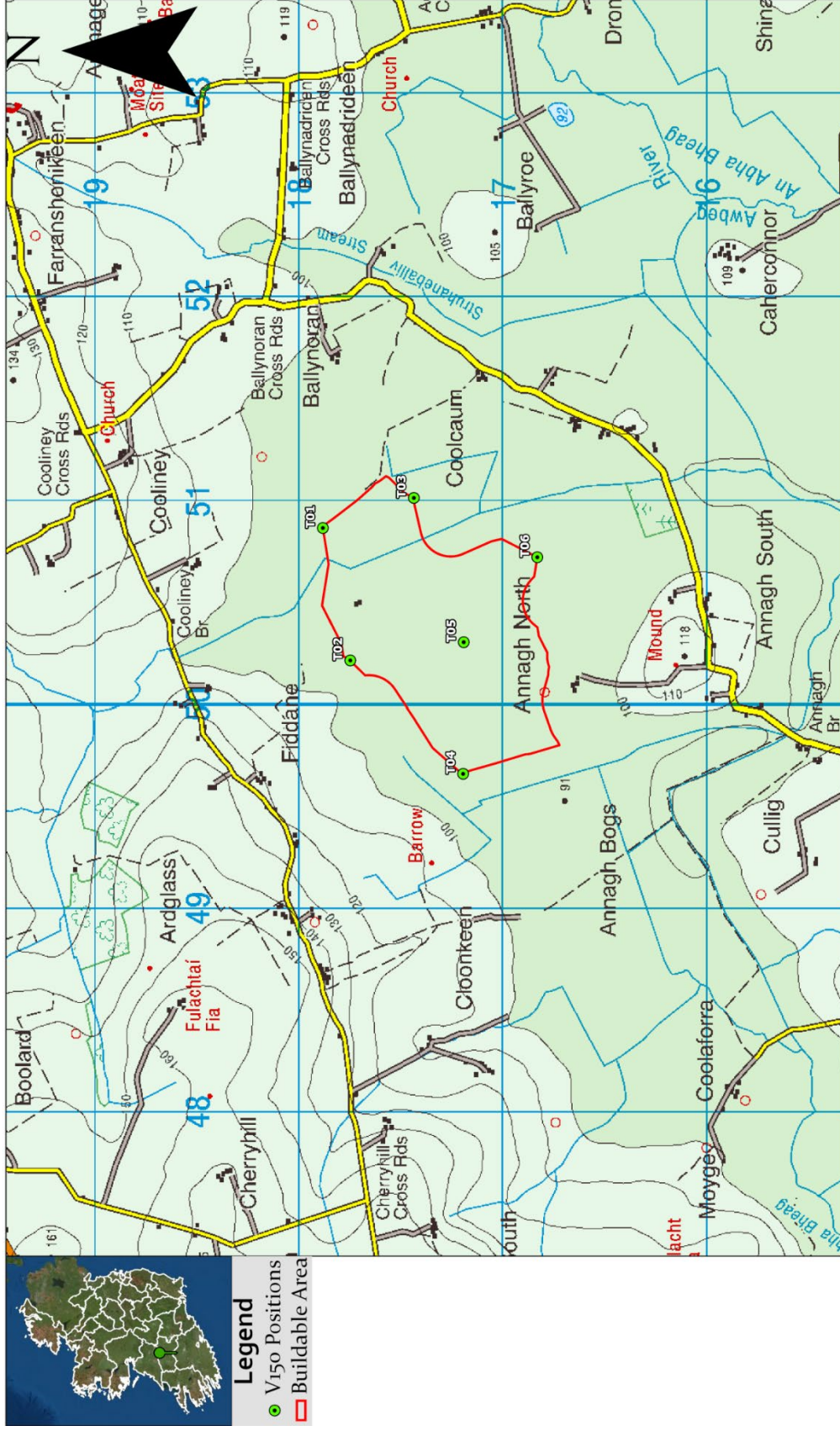




Annagh WF - Proposed Haulage Corridors



Annagh WF - Proposed Grid Connection Corridors



Annagh WF - Proposed Wind Farm Layout

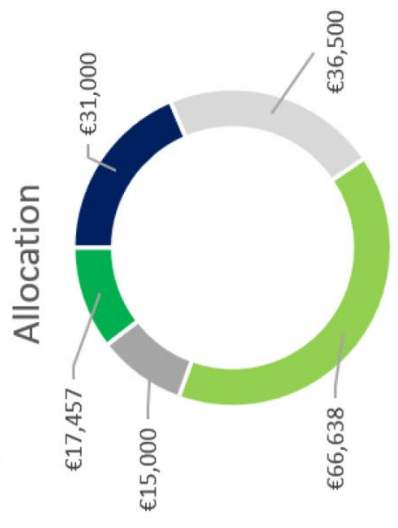
Annagh Community Benefits

Renewable Electricity Support Scheme (RESS) High Level Design

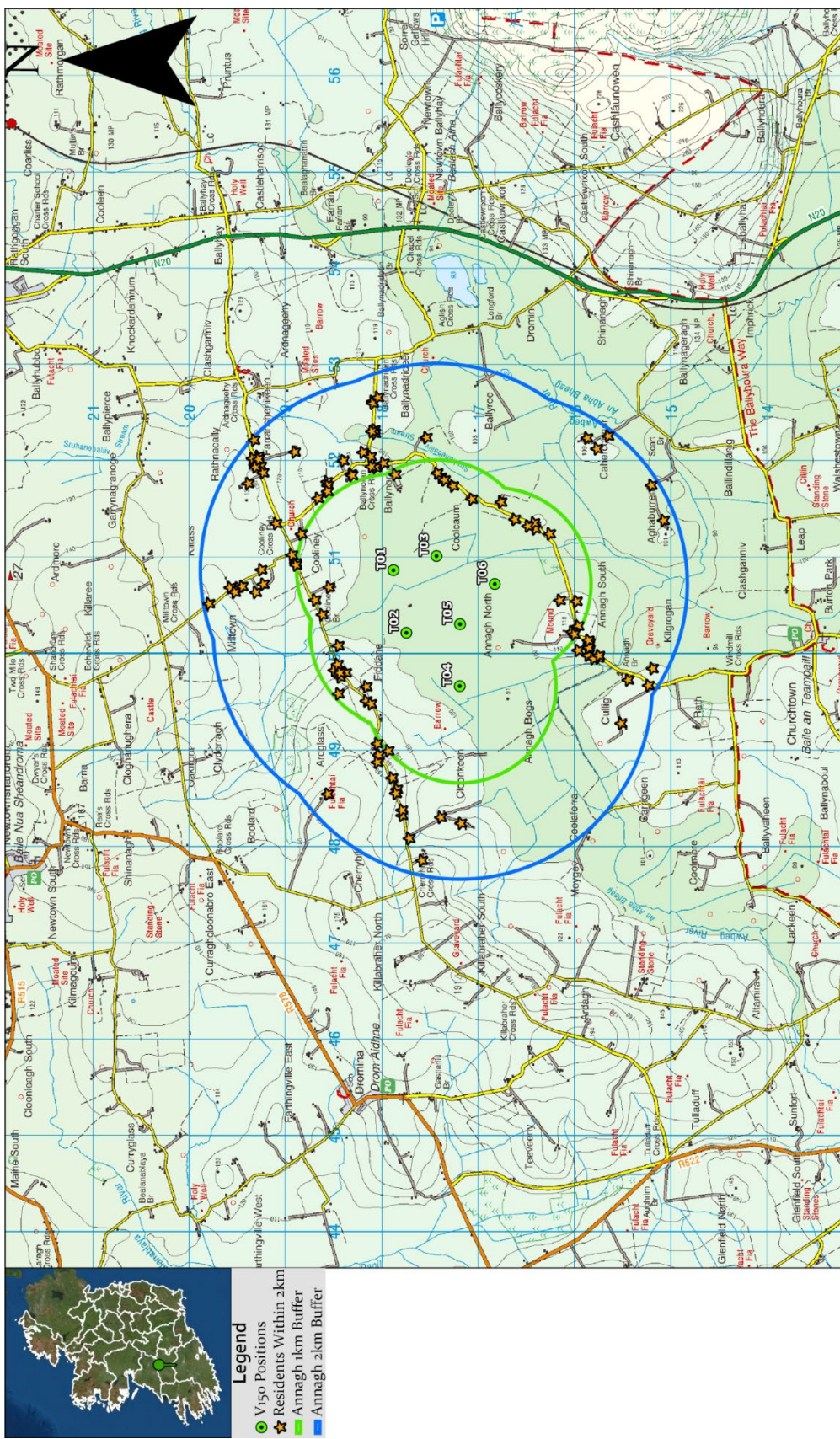
Total Annual Fund of €166,595

- 105** Direct jobs in construction phase
- 25** Highly skilled jobs over project lifetime
- € 68.1 million** Investment in Irish infrastructure
- € 4.6 million** Total Community Fund Contribution
- € 11 million** County Council Rates Contribution

Annagh Indicative Community Fund Allocation



- Households <1km distance
- Households >1km, <2km distance
- Not-for-profit community enterprises
- Fund administration
- Local initiatives, clubs and societies

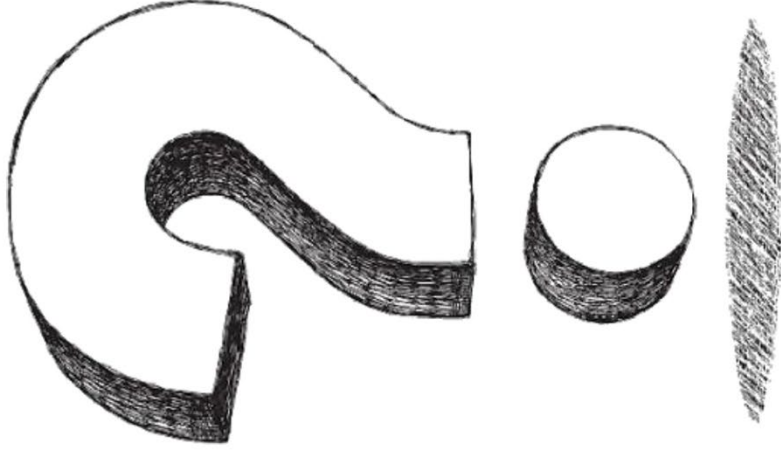


Annagh WF - Near Neighbour Scheme



Question Time

EMPOWER



Environmental Impact Assessment



Hydrology

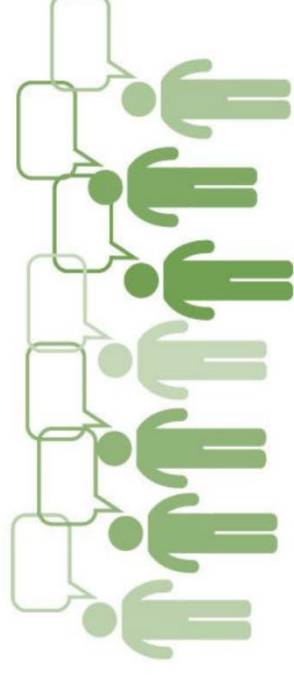


Ornithology

Environmental Impact Assessment

EMPOWER

Population & Human Health

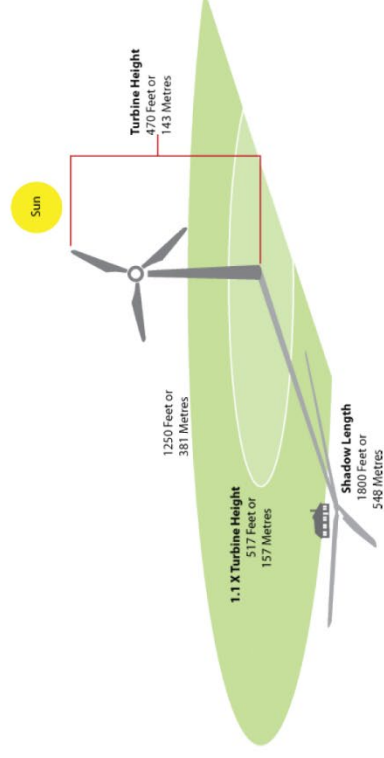


Biodiversity

Environmental Impact Assessment



Shadow Flicker

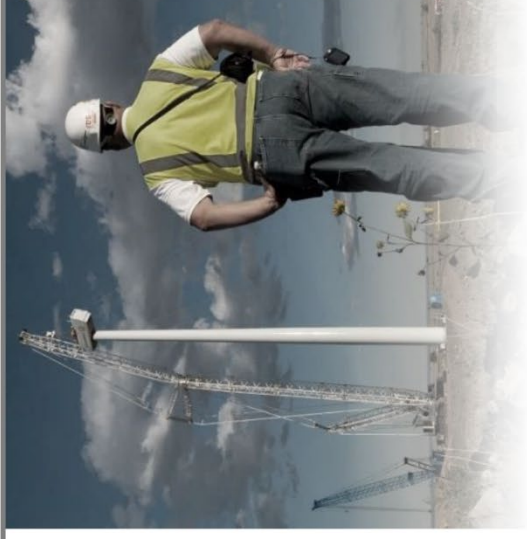


Sound

Environmental Impact Assessment



Construction and Civil Engineering



Archaeology

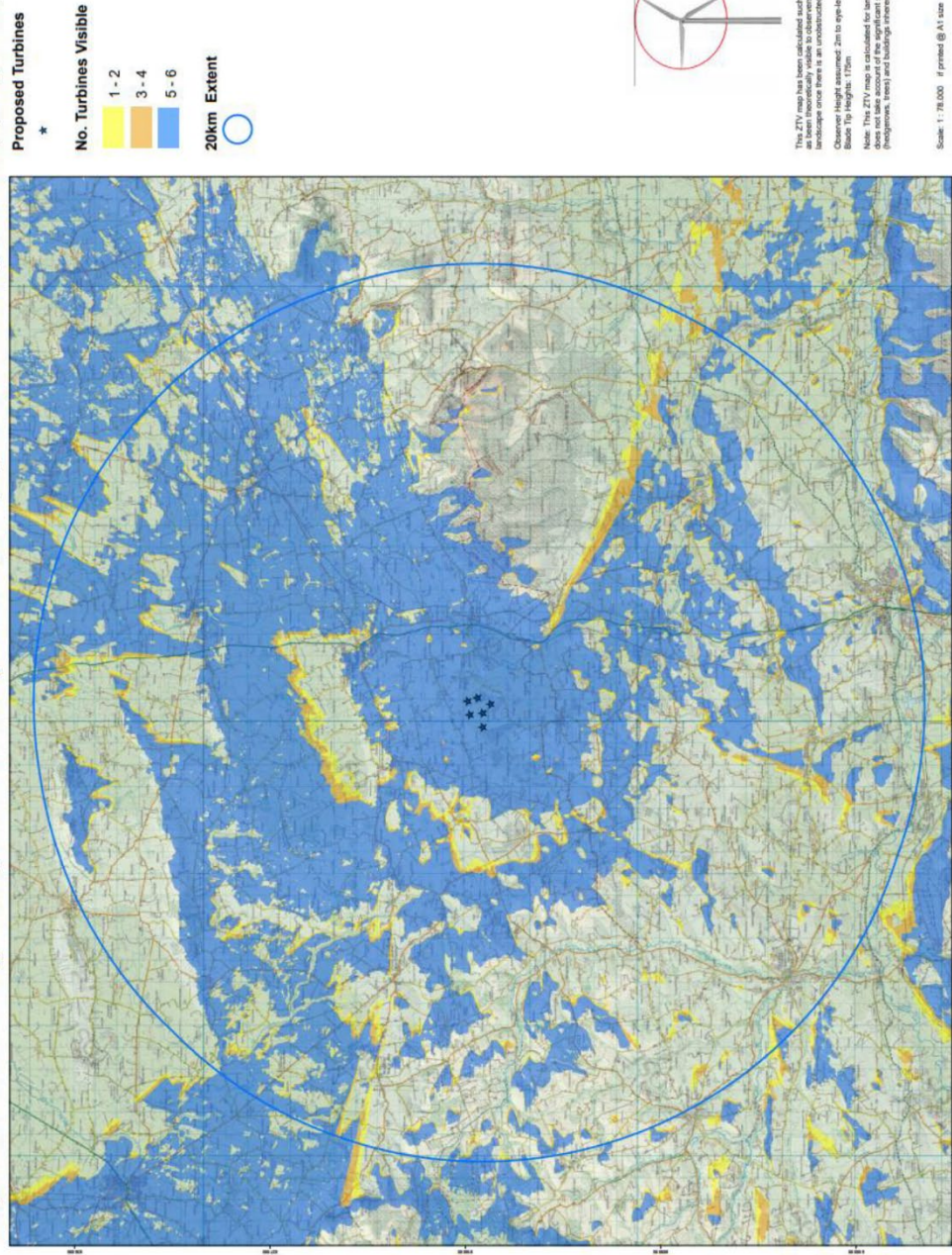
Landscape and Visuals



Environmental Impact Assessment



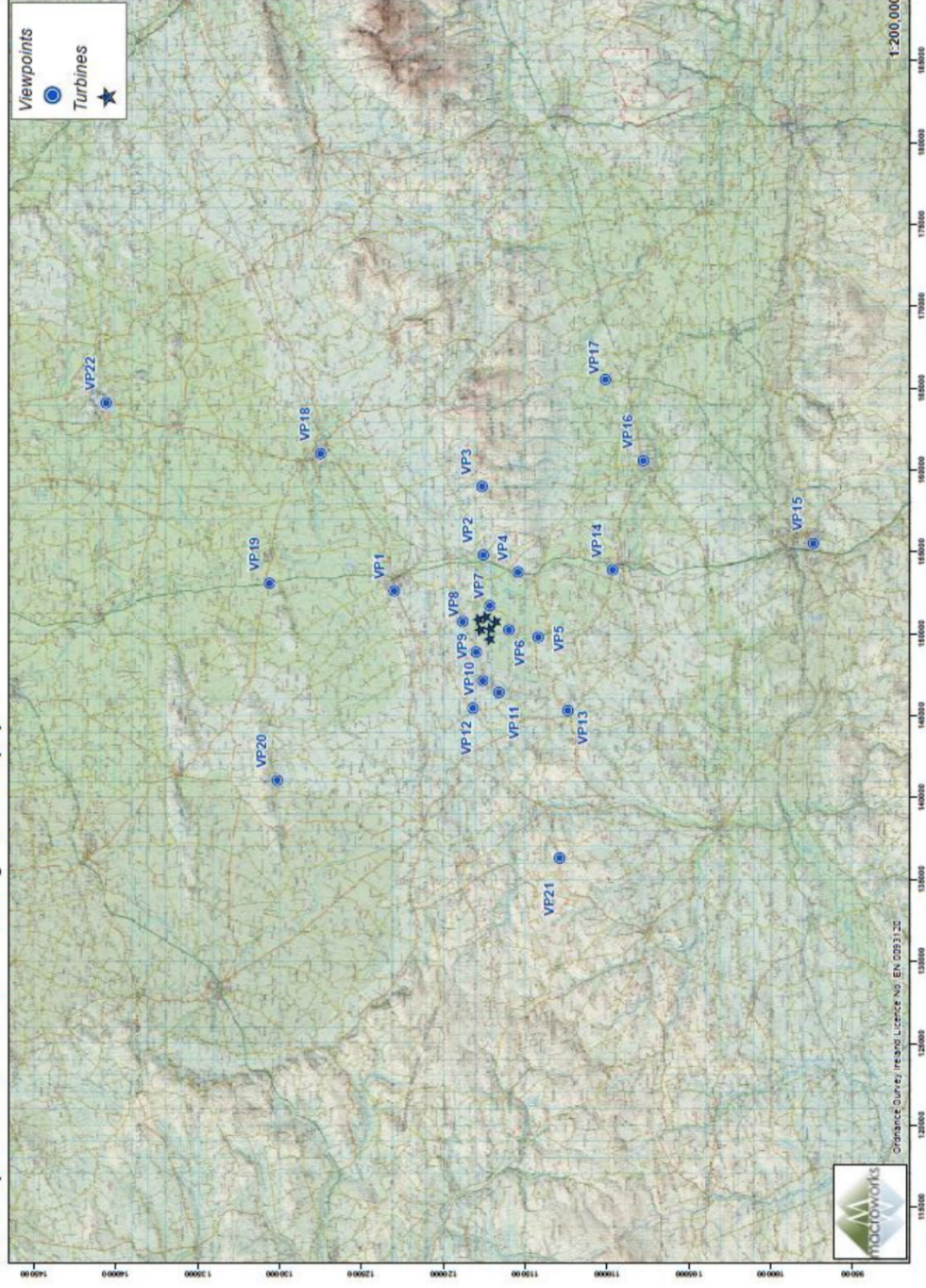
ZTV (Zone of Theoretical Visibility) indicating the areas that have a potential view of the proposed turbines at Annagh Wind Farm (Tip Height 175m)



Environmental Impact Assessment



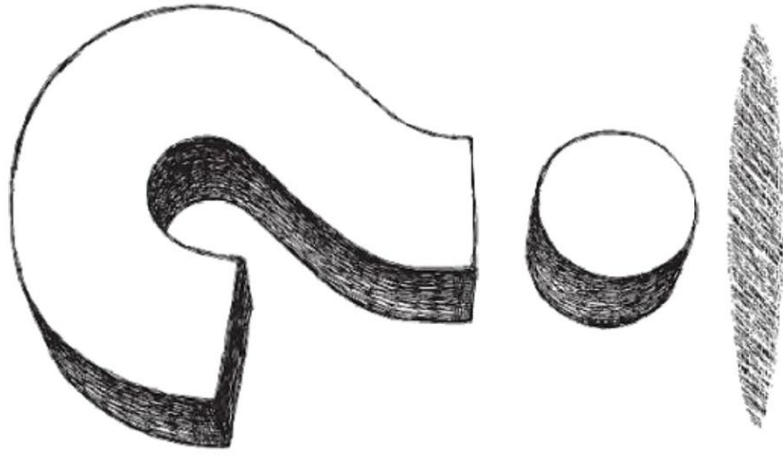
LVIA viewpoint locations selected for the Annagh Wind Farm project



Virtual Consultation Room



Question Time



Conclusion

- **Proposed Annagh Wind Farm**
 - 6 turbines
 - 33.6 MW
 - 20,000 Irish homes powered
- **Community Fund**
 - €166,594 per year
 - €1,000 per year (households <1km)
 - €500 per year (households > 1km <2km)
- **Next Steps**
 - Virtual consultation room Q1 2021
 - Submission for planning in Q2/3 2021



Get in Touch

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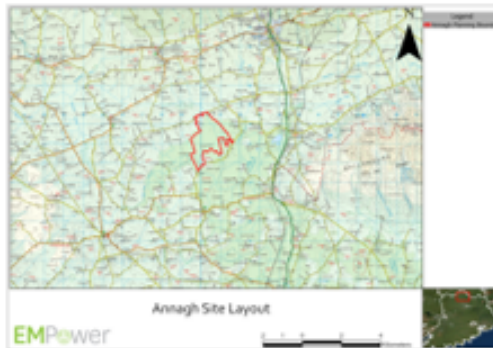
10.4 Appendix 4d 1st Public Consultation Event

EMPower

Annagh Wind Farm Proposal

The proposed development area of Annagh Wind Farm consists of a 700 acre site which is privately owned by 5 local landowners, located 5 Km south west of Charleville. The final footprint of the project will be approximately 10 acres. EIPower propose to develop 8 turbine wind farm, at hub heights of approximately 92.5 metres and blade length of 66.5 metres, capable of providing enough clean, affordable, indigenous energy to power over 23,000 Irish homes. The project will require no additional overhead transmission lines. EIPower propose to develop up to 8 turbines subject to environmental impact assessment and planning permission. The site was identified in the Cork County Development Plan where it is designated as 'Open for Consideration' for wind farm development.

8 Turbines
33.6 MW



Who We Are

EIPower was established to serve the growing Irish electricity market while creating the minimum environmental, ecological and social impact. Our vision is to provide low carbon, ecologically sustainable, affordable energy to facilitate Ireland's expanding economy and sustainable energy targets.

EIPower is a private limited company and a wholly owned subsidiary of EIPower Group, an international renewable energy developer jointly owned by EIPower (Ireland) and Vind Roen Invest (Denmark). We are in the final public consultation stage of development at the Annagh Wind Farm.

Our primary business is the development of appropriately positioned and scaled greenfield wind energy power plants. EIPower will utilize the considerable international project development experience of our management team, coupled with the market leading technical expertise of our partners to deliver clean energy assets in a cost effective and environmentally responsible manner.

EIPower is headquartered in Dublin with over 600 MW in development in Europe and Africa. EIPower's senior management team has a combined 70 years' experience delivering projects from conception to operation across five continents. The senior management team comprises four Irish, highly experienced professionals in the fields of renewable energy project management, corporate legal, finance and wind measurement.

EIPower commenced project development in Ireland in 2005 following the government announcement of the Renewable Energy Support Scheme (RESS) and Ireland's revised emissions target of 70% renewables by 2020. This will require an additional 8,000 MW of new onshore wind to be installed by 2020.



90 Years

Combined Experience of EIP Management Team across 5 continents

Why Annagh?

- Land is not subject to environmental designation
- Land is designated as 'Open for Consideration' for wind development in Cork County Development Plan
- High Wind Speeds
- Available grid capacity on at the Charleville 110 KV substation located less than 5 km from the site which will be accessed via underground cables

What We Do

EIP follows Equator Principles and IFC Performance Standards throughout all stages of development in order to ensure the protection of our local ecology and communities. In selecting a suitable site, we examine housing density, wind resource, and use, topography, ecology, archaeology, cultural heritage, and existing infrastructure (roads and electricity grid). Once a feasible site is identified, development may progress with the establishment of land agreements and more thorough investigations such as wind measurement, an environmental and social impact assessment and a grid integration study. Upon completion of these studies and after all relevant permits are secured, construction may begin on the wind farm, typically lasting 10-18 months.

Commercial wind farms have an operating lifetime of 25 - 30 years, after which the wind farm may be decommissioned, restoring the landscape to its original condition.



Wind Energy in Ireland

Current Situation

Wind energy is currently the largest contributing resource of renewable energy in Ireland. It is both Ireland's largest and cheapest renewable electricity resource. At present the Republic of Ireland has over 250 operational onshore wind farms consisting of 3,278 turbines. In Q4 2019, wind energy provided 37% of the state's electricity demand and had a total installed capacity of 3,700 MW (IEA, 2019). This is enough to power 2.2 million Irish homes and accounts for the second largest source of electricity generation in Ireland after natural gas. Ireland is one of the leading countries in the deployment of wind energy and 3rd place worldwide in 2019, after Denmark and Uruguay.

3.7 GW

Enough power for 2.2 million Irish homes in 2019



National Goals

In June of this year, the government published the Climate Action Plan 2019, which sets out their proposed pathway to 2050 that is consistent with a net zero carbon emissions target by 2050. The Plan commits to increasing Ireland's renewable share in electricity from 32% in 2018 to 70% by 2050, which will involve the addition of 12 GW of renewable electricity generation. In the IEA's techno-economic analysis referred to in the Climate Action Plan, onshore wind is identified as the most cost effective energy source, accounting for 8.0 GW, or two thirds of additional renewable generation being targeted by the government for 2050.

32%

2018
Renewable Electricity Share



70%

2050
Renewable Electricity Share

RESS Auction

The new Renewable Electricity Support Scheme (RESS) announced in July 2018, will help deliver Ireland's contribution to our national and EU-wide binding renewable energy targets. The scheme is based on competitive, technology neutral auctions in which renewable energy projects compete with one another for contracts. In order to ensure minimum cost to the consumer, one of RESS key objectives is to increase community participation, as well as community benefits, some of which are highlighted below. The first auction is due to begin in late 2019.

- Over 250 Operational Wind Farms in Ireland.
- 3,278 wind Turbines.
- 3,700 MW of Installed Capacity.
- Deployed 2.7 million tonnes of CO₂ emissions in 2017

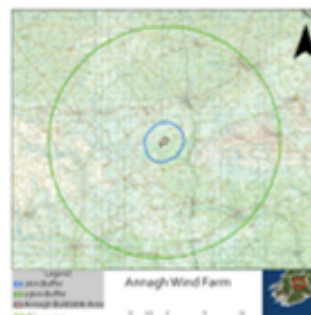


Community Benefit

Anagh wind farm will require a €55.5 million investment into the Irish energy sector, providing sustainable, low carbon energy generation infrastructure to meet Ireland's growing demand. The development benefits to the local community include significant investment in local infrastructure, local job creation and a €3.56 million community fund, to be made available to the local community over a 15 year period. This fund will be divided into a near neighbour scheme to benefit residents within 2 km of the site, and a wider community fund to benefit community groups and sports clubs within a 15 km radius. Additionally, based on current rates, Anagh wind farm will contribute €6 million in county council rates over the project lifetime.

The local community will also be afforded the opportunity to invest in the Anagh wind farm. More detail on the structure of this investment opportunity is expected in the coming months, following the launch of the RESS-1 auction by the department of communications, climate action and environment (DCC-CE).

As well as these direct financial benefits, Anagh wind farm will provide local job creation, expected to total 47 direct jobs and 39 indirect jobs created during construction. Additionally 20 highly skilled jobs will be created and sustained throughout the 25 years of operation. Local infrastructure such as roads and electrical systems will be upgraded and maintained for the life of the project.



- € 35.5 million Infrastructure Investment
- € 3.56 million Community Fund - 15 years
- € 6 million County Council Rates Contribution

- 39 Indirect jobs in construction phase
- 47 Direct jobs in construction phase
- 20 Highly skilled jobs over 25 year operations



EMPower

Environmental Impact Assessment

EMPower have commissioned an ongoing Environmental Impact Assessment (EIA) for the wind project to assess what effects the project might have on the local human and ecological environment. EMPower are the primary project management contacts during these assessments and the company will engage with the key stakeholders at every stage of this research to ensure we keep the community up to date with the wind farm development. The results of these assessments will be made public prior to submission to the planning authority. The following studies will be conducted as part of this process.



Population and Human Health

The Population and Human Health assessment includes the processes of analysing, monitoring and managing the intended and unintended consequences, both positive and negative, of planned interventions (e.g. a wind farm project) on the local human population. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

This includes includes of the following activity:

- identify interested and affected peoples;
- collect baseline data (social profiling) to allow evaluation and audit of the impact assessment process and the planned intervention itself;
- give a full picture of the local historical and cultural context;
- predict (or analyse) likely impacts and how different stakeholders are likely to respond;
- recommend mitigation and coping measures;
- describe potential conflicts between stakeholders and advise on resolution processes;



Biodiversity

A detailed biodiversity, flora and fauna study will be conducted in order to understand the current biological conditions present at the Wind Farm site, as well as the likely impacts of such a development on surrounding environments. Surveys include habitat mapping and targeted sampling of flora and non-avian fauna at a variety of survey points within different identified habitats on the Project site, as well as additional survey points along the transmission corridor. Timed species counts can be used to record resident fauna species at each survey point.

Plant species will be recorded using baseline study investigations and any protected or endangered species will be noted. The final site design will avoid any sensitive habitats and mitigate by design where possible.



Ornithology

The Royal Society for the Protection of Birds (RSPB) states that wind power has the greatest potential to make a significant difference in mitigating climate change in the coming decade as: it is the most advanced and widely available of the new renewable technologies. RSPB insists that wind farm projects that may affect sensitive bird populations or their habitats are subject to rigorous environmental assessment before development is permitted and that the effects of any approved developments are monitored before and after construction.

Impacts of wind farms on bird populations can occur through collisions, habitat loss, avoidance/barrier effects, disturbance, displacement, or exclusion, e.g. from breeding grounds or foraging areas. For this reason, EMPower take the utmost due care and diligence to ensure that any wind turbines are positioned to cause the minimum possible impact to the native birds and habitat. In line with industry best practice, EMPower will be conducting a minimum of 2 years bird surveys prior to submission of a planning application.

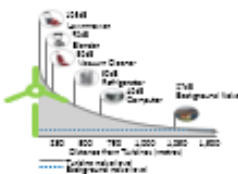


Noise & Vibration

The evolution of wind farm technology over the past decade has rendered mechanical noise from turbines almost undetectable with the main sound being the aerodynamic swoosh of the blades passing the tower. However, strict guidelines on wind turbines and noise emissions remain to ensure the protection of residential amenity.

Noise assessments that will be undertaken as part of the EIA and will comply with the wind farm planning guidelines. Independent noise consultants will undertake a noise assessment to consider the impact of the turbines at the Wind Farm on the surrounding area, in particular on nearby residential properties. Measurements of background noise will be taken from the closest dwellings to the site, allowing wind farm noise emissions to be simulated based on the background levels measured combined with turbine noise emissions. All windfarms must meet a maximum night time noise limit as per the planning guidelines, which is currently set at 45db.

The final EIA will include a report describing the findings of the noise assessment and any impact on local dwellings from the proposed wind farm. This final report and research will be available for review by any member of the public.



Water & Hydrology

Hydrology and hydrogeology refers to the study of how water flows under and through the landscape. A desktop survey to establish the baseline conditions within and adjacent to the site will be undertaken. Following this desktop survey, field visits will confirm a number of these findings and inform any required actions or mitigation strategies for the various stages of the project development, most notably construction. The final site design will minimise the risk of construction materials disturbing local water courses, streams and rivers close to the site.



EMPower

Environmental Impact Assessment

Landscape and Visual

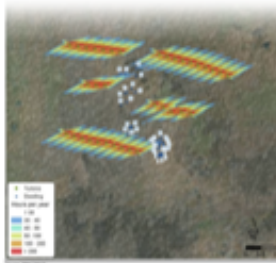
A landscape and visual impact assessment will be carried out to ascertain the visual impact of the wind farm on the surrounding community. This will be done initially by desk based assessment with subsequent site visits by a landscape consultant to photograph the landscape. A range of theoretical visibility (TV) has been produced outlining which turbines will be visible from what areas surrounding the site. Photo-montages will also be produced to show what the turbines will look like once operational, from the areas identified in the TV as most visible. An example of a photo-montage is presented below. EIPower will design the wind farm to minimise the visual impact of the project on surrounding residents.



Shadow Flicker

Shadow flicker is the name given to a phenomenon caused when the sun is behind the turbine blades as it rises or sets, casting a moving shadow over a small opening in a building such as a window, creating a flickering effect within the building. This cannot affect properties outside the rotor diameters of the turbines so the potential impact is restricted to the immediate vicinity of the site.

The current Irish planning regulations has a zero limit tolerance for shadow flicker occurrence, to protect local residential properties. A shadow flicker assessment is carried out to demonstrate the potential for occurrence, and the wind farm layout can be modified to design out the risk of occurrence. Additionally where there is potential for occurrence, software can be installed which identifies when shadow flicker is occurring, and the wind turbine is shut down for a period of time, therefore mitigating the effect. Employing this mitigation measure ensures that no residents living near the wind farm experience shadow flicker.



Cultural and Archaeological

This study will include the identification of significant archaeological, architectural and cultural heritage constraints in the site and surrounding lands (within 2km). A local archaeologist will conduct a desk based assessment followed by field inspections to identify and categorise all significant archaeological sites found within the study area. A report describing the findings of the archaeological survey and possible impact from the proposed wind farm will be produced as part of this EIA research and will be available for review by the public.



Civil Engineering

Civil engineering will be a major part of the project as we move from planning to construction. On commencing the planning work on the site, the civil engineers must review and implement methods, processes and mitigation measures outlined in the EIA as part of their planning and construction work. The ERA will require that their recommendations and mitigation measures for the construction of the wind farm, outlined in the EIA guidelines, will be implemented and followed as part of the civil engineering work. The main areas of civil engineering for the wind farm development are:

- Site design
- Geotechnical and site investigations
- Turbine foundation and crane pad construction
- Cable installation
- Sediment and erosion control measures
- Traffic Impact Assessment for the construction phase of the project
- Wind turbine equipment assembly and construction
- Commissioning of the wind farm
- Site clean-up and restoration.



EMPower

Wind Energy FAQ

What are a turbine's turbine emissions?

Wind energy emits no toxic substances such as mercury and air pollutants like smog-causing nitrogen oxides, acid rain-forming sulphur dioxide and particulate deposits. These pollutants can trigger cancer, heart disease, asthma and other respiratory diseases, can acidify terrestrial and aquatic ecosystems, and corrode buildings. Wind energy creates no waste or water pollution. Unlike fossil fuel and nuclear power plants, wind technology uses very little water to produce electricity. Given the fact that water scarcity is pressing and will be exacerbated by climate change and population growth, wind energy is key to preserving water resources. (Source: EWEA)

In 2014, the Intergovernmental Panel on Climate Change (IPCC) compared the lifetime CO2 equivalent (CO2e) emissions of all major energy technologies in operation worldwide. Onshore wind energy was found to have the lowest mean lifecycle emissions of all sources at 11 grams CO2e per kWh. In comparison nuclear energy has 25 grams CO2e per kWh, utility solar PV has 48 grams CO2e per kWh and combined cycle natural gas had 470 grams CO2e per kWh. (Source: IPCC)

How efficient is wind energy?

Wind turbines produce electricity approximately 85% of the time. The other 15% of the time they are not turning for reasons such as very low wind speeds, very high wind speeds, and maintenance/repair work. After 6 to seven months, a wind turbine will have produced as much energy as it has consumed constructing it. (Source: EWEA)

The output of a wind turbine depends on the turbine size and the wind speed through the rotor. A wind turbine with a net capacity factor of 35% and a capacity of 4.0 MW can produce more than 12,000 MWh in a year – enough to supply approximately 5,000 average Irish households. (Source: Egrid)

What happens when the wind stops blowing?

The power grid operator constantly matches the electricity generated available to electricity demand. No power plant is 100% reliable, and the electricity grid is designed to cope with power plants shutting down unexpectedly, and times when the wind is not blowing. Wind is variable, but predictable. Wind farm sites are chosen after careful analysis of wind patterns. This enables a forecast of output to be made – information which can be made available to the network operators who will distribute the electricity.

In the future, once a truly European electricity grid has been constructed, wind-powered electricity will be able to be traded between EU countries to balance out supply and demand even more easily. Other renewables such as solar will also form part of this electricity exchange. (Source: European Wind Energy Association)

Do wind farms create noise?

It is the duty of EMPower to demonstrate during the planning process noise levels of 50% turbines will not adversely affect local residents. The studies completed during this period will be used to design each new wind farm so noise levels at nearby residential homes do not exceed national planning guidelines. Currently in Ireland and the United Kingdom, guidelines in relation to wind turbine noise levels are set at 45 and 48 decibels respectively on the time of day and the level of background noise. In line with international best practice.

Do wind turbines create harmful health impacts?

Concerns over impacts on health from wind farms are usually related to noise, shadow flicker, infrasound or vibration. In general, the evidence suggests that there are no direct health impacts from wind turbines, however what is recognised is that annoyance causes health impacts and wind farms can cause annoyance, most often when people do not like wind farms.

In response to a Parliamentary Question in May 2014, the European Commission stated 'The Commission keeps a continuous watch on the possible impacts of wind turbines on health and well-being, taking into account the results from on-going projects and other sources. So far there has been no scientific evidence of lasting impacts, but there is recognition, also in industry, of public perception of impacts and nuisance.' (Source: Friends of the Earth Ireland)

Do wind farms produce harmful infrasound?

Infrasound, sometimes referred to as low-frequency sound, is generally regarded as sound that is lower in frequency than 20 cycles per second. Infrasound is a frequently present element of the natural and man-made environment. It is produced by sources such as sea waves, rainfall, animals, vehicle traffic, buildings, appliances and indeed wind turbines, to name a few.

The overwhelming consensus in peer reviewed scientific literature, much of which is readily available on the internet, is that there is no sound evidence to indicate infrasound caused by wind turbines creates harmful health impacts. In 2010, the Ministry for the Environment, Climate and Energy of the Federal State of Baden-Wuerttemberg in Germany published an investigation into infrasound produced from wind turbines.

'Infrasound is caused by a large number of different natural and technical sources. It is an everyday part of our environment that can be heard everywhere. Wind turbines make no considerable contribution to it. The infrasound level generated by them is clearly below the limits of human perception. There is no scientifically proven evidence of adverse effects in this level range. The measurement results of wind turbines also show no acoustic abnormalities for the frequency range of audible sound. Wind turbines can thus be assessed like other installations according to the specifications of the 76.34m noise protection regulations. It can be concluded that they fully respect compliance with legal and professional/technical requirements for planning and approval. harmful effects of noise from wind turbines cannot be deduced.'

Similar conclusions have also been reached by British Wind Energy Association (November UK 2009), Swiss University Medical School (2011), Massachusetts Institute of Technology (MIT) (2014) and The Quebec National Institute of Public Health (2015), to name a few.

Do wind farms require pylons or overhead transmission lines?

No. EMPower wind farms involve the installation of no electrical pylons or overhead transmission lines. Instead, all transmission lines will be buried out of sight in the form of underground cables. EMPower will endeavour to create the minimum visual and acoustic impact by locating these transmission lines along existing public roads and access tracks where possible.

Will local residents be affected by shadow flicker?

Shadow flicker refers to the effect of the sun (low on the horizon) shining through the rotating blades of a wind turbine, casting a moving shadow. Present planning guidelines require that any possible effects of shadow flicker are mitigated where possible by installing solar sensors on the turbine which slow or shut down the turbine during times of possible shadow flicker. Therefore, no residents will be affected.

Do wind farms affect house prices?

Several studies from the United Kingdom by The Centre for Economics and Business Research (CEBR), The Institute of Chartered Surveyors, The House of Commons Library and Renewable UK conclude wind farms have little or no impact on property values.

Do wind turbines create harmful electric-magnetic fields (EMF)?

No. Wind turbines are not considered a significant source of EMF exposure since emissions levels around wind farms are low. The overwhelming scientific evidence is that there is nothing unique to wind farms with respect to EMF exposure. In fact, magnetic field levels in the immediate vicinity of wind turbines are regularly lower than those produced by many common household electrical devices and are well below any existing regulatory guidelines with respect to human health. (Source: Chief Medical Officer of Health of Ontario)

What is the future of wind energy, globally and in Ireland?

Wind energy is among the fastest growing energy sources globally. According to IEA, in 2008 the world added 47,400 MW of wind capacity, representing a 9.5% annual increase. In the same year, wind accounted for 44% of all new power installations across Europe – more than any other technology. By 2020, wind is predicted to serve a quarter of the EU's electricity needs and be the backbone of Europe's energy system (Source: IEA, EWEA)

The Climate Action Plan to Tackle Climate Breakdown, issued by the Department of Communications, Climate Action and Environment (DCCAE) in June 2014, commits Ireland to supplying 70% of our electricity needs from renewable sources by 2020. According to this paper, this is likely to involve the addition of over 12 GW of renewable capacity, of which the government recommends that 5.2 GW, or 43%, should be onshore wind. This recommendation is based on their Marginal Abatement Cost Curve (MACC) analysis, showing wind energy to be Ireland's most economic solution to our energy targets and a vital component in the future of non energy. (Source: DCCAE)

Are wind farms a blot on the landscape?

Some people find wind farms unacceptably intrusive in our much loved countryside. Others see them as graceful structures, generating local electricity prices – unlike electricity pylons, for example, which we have had with for decades. It's a highly subjective judgement. Climate change – unless tackled effectively now – is far more likely to have a severe and widespread impact on the landscape in the longer term than wind plants. Our willingness to take a energy and reduce our dependence on traditional means of power generation will help to safeguard the landscape for the use and enjoyment of future generations. (Source: UK Sustainable Development Commission)

Are wind farms unpopular?

No. This is a common misconception resulting from the disproportionate coverage generated by inherently opposition groups. An opinion poll conducted by Interactions Research and commissioned by WEA in November 2012 dispelled the following:

- 85% in favour of the use of wind power (54% strongly) in favour
- 91% of rural residents favour the use of wind power (85% strongly) in favour up 12 points since 2011.
- 87% say Ireland should promote an indigenous source of energy and not rely on imported fossil fuels (54% strongly) in favour up 11 points since 2011.
- 80% would choose renewables over fossil fuels to power their homes (up 10 points since 2011)
- 85% see reduced CO2 emissions as a benefit of wind power (up 8 points since 2011).
- 77% see cheaper electricity as a benefit of wind power (up 9 points since 2011)
- 85% are in favour of a wind farm set up in their local area – up 9 points since last year (44%)

Do wind turbines harm wildlife, birds and marine life?

Leading environmental and nature conservation groups like BirdLife, WWF, Greenpeace, Friends of the Earth, and Scottish National Heritage Trust support appropriately planned wind energy. BirdLife recently stated that climate change was the single largest threat to birds and wind and renewables were a clear solution to climate change.

Wind farms are always subject to an Environmental Impact Assessment to ensure that their potential effect on the immediate surroundings, including fauna and flora, are carefully considered before construction is allowed to start. Deaths from birds flying into wind turbines represent only a tiny fraction of those caused by other human-related sources such as wildfires and buildings. A 2012 study carried out in the UK (Reaner-Higgins et al.) concluded that a large majority of species can co-exist or thrive with wind farms once they are operating (Source: Journal of Applied Ecology).

According to the Greening Blue Energy study, 'including both on and offshore facilities, estimated rates of mortality for different bird species range from 0.02 to 0.03 mortalities per turbine per year' (Chris P. Langston, 2008). It has been estimated that wind turbines in the UK cause the direct deaths of only 0.01-0.02% of all of the birds killed annually by collisions with man-made structures and activities.

Figure 28 Presentation Materials October 2019 - 1st Consultation Event