



# Pigeon Top Wind Farm

Cornavarrow Road, Dooish, Drumquin, Co. Tyrone

**EIS Volume 3**

Non Technical Summary of the Environmental Statement

January 2009





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This non-technical summary (NTS) is the third volume of the Environmental Statement (ES) and has been prepared by TCI Renewables to accompany its application to the Planning Service for planning consent to construct nine wind turbines at Pigeon Top, 8.5km south west of Omagh in County Tyrone.

**Site Address:** Pigeon Top Wind Farm  
Land approximately 1800m northeast of 26 Cornavarrow Road  
Dooish, Drumquin  
Omagh, Co. Tyrone  
BT78 4RN

The NTS provides a description of the Environmental Impact Assessment (EIA) and has been produced in accordance with the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 1999.

It contains an analysis of the environmental implications of the proposal to construct, operate and decommission the wind farm. All three volumes of the ES have been submitted to the Planning Service in Belfast where they may be examined by the public during normal working hours. Copies will also be made available for purchase and viewing - see Page 23 for details.

The EIA has been prepared by senior members of TCI Renewables' in-house technical and development teams with input from external specialists. The NTS is accompanied by two other volumes which together form the complete Environmental Statement:

- Volume 1- Environmental Statement
- Volume 2- General Appendices and Landscape and Visual Impact Assessment (mapping, graphics and photomontages)

Printed copies of the non technical summary and the environmental statement can be obtained from:

**TCI Renewables**  
The Old Throne Hospital  
244 Whitewell Road  
Belfast BT36 7ES

A printed copy of the NTS can be purchased for £5.00 or can be downloaded free as a PDF file from the our website at [www.tcirenewables.com](http://www.tcirenewables.com). Printed copies of the complete ES (including figures and appendices) can be purchased for £100.00 or are available as PDF files on a CD for £5.00 including package & posting.

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## the site

The site is located within the townlands of Legphressy, Segully and Unishinagh near to the summit of Pollnalaght in an area known as Pigeon Top. This is located approximately 8.5 kilometres south west of Omagh, County Tyrone. The proposed development area consists mostly of upland farmland and moorland, with the turbines located at elevations between 145 m-235 m above sea level (ASL). The peak ridge top at Pigeon Top is located at 298 m ASL so the turbines are placed well below the highest peak in the landscape view.

The site will be accessed from two entrances, the southern cluster of four turbines from Cornavarrow Road using an existing entrance turning and the northern cluster of five turbines from Rolsons Lane off Segully Road. Rolsons lane will require upgrade for the delivery of the turbine components. New tracks have been kept to a minimum across the site to limit impacts upon existing habitats.

The habitat character of the area is an upland landscape dominated by heavily cut over blanket bog and upland blanket bog grading to wet heath and marshy grasslands. Most common land uses include sheep and cattle grazing at lower elevations. There are scattered conifer plantations to the south and south west of the site with improved agricultural grassland further south. To the east and southeast, the area is dominated by upland blanket bog and improved agricultural grassland.

The Pigeon Top Wind Farm design team has sought to minimise the land-take required for the development of the project by following field boundaries and contours within the landscape and minimising impacts on the protected habitats. The number of turbines proposed has been minimised to avoid the protected blanket bog area in the centre of the site and create a uniform layout.

## the project

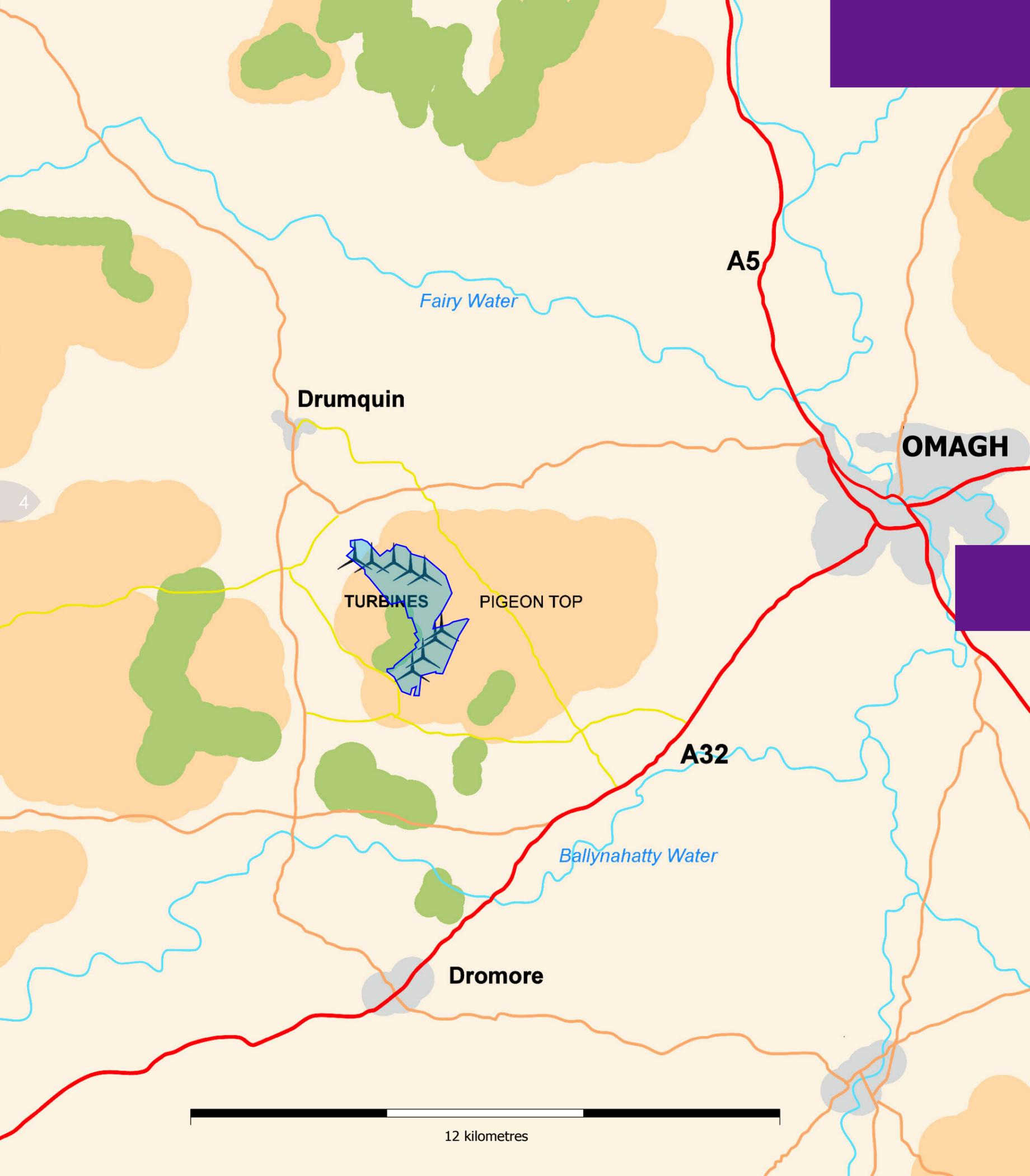
The proposed development consists of nine wind turbines up to 99.5 m in height, each of which will generate up to 2.3 megawatts of electricity. Other infrastructure will include underground electric cabling, a temporary site storage compound, road improvement works, sub station buildings, permanent met masts, new tracks and existing track upgrade and other ancillary site works associated with a wind farm development.

The wind turbines will incorporate a tower and three blades forming a rotor attached to a nacelle housing containing a generator and other equipment. The towers will be fixed to the ground on substantial concrete foundation, approximately 18 m in diameter to incorporate tower base and foundation loading. The switch gear for the turbines will be contained within the base of the towers or inside an external kiosk situated adjacent to the tower.

Subject to the granting of planning consent and turbine procurement, it is anticipated that construction of the Pigeon Top Wind Farm will take approximately 14 months to complete. At the end of the wind farm's expected 25-year lifespan the turbines can be decommissioned and removed, with foundations broken to below ground level and the majority of the site rehabilitated. Underground electrical cables will be de-energised and removed.

Northern Ireland Electricity (NIE) will be responsible for the planning application and design for the grid connection route. The turbines will generate electricity at 690V. This will be stepped up to 33KV using transformers installed within the bases of the towers. Underground and overhead cables will connect the wind turbines to the most suitable NIE connection point.

Operations and maintenance (O&M) are the initial responsibility of the turbine supplier. After this warranty period has elapsed, a suitable company will be contracted to ensure the wind turbines are regularly maintained. The turbines will be monitored by remote internet computer links to ensure they maintain optimum efficiency.



All wind farm proposals in Northern Ireland are assessed by the Planning Service within the Department of the Environment (DOE). This planning process determines if the proposals should be assessed within the *Planning (Environmental Impact Assessment) (Amendment No.2) Regulations (Northern Ireland) 2008*.

The strategic regional planning for Northern Ireland is guided by *A Planning Strategy for Rural Northern Ireland*, and other relevant planning policy documents. However, this is gradually being superseded by individual and more detailed planning policy statements.

The Department of Regional Development published its regional development strategy for Northern Ireland, *2025 Shaping Our Future*, in which it aims to guide future development in Northern Ireland until 2025. The proposed Pigeon Top Wind Farm has been developed within this strategic planning framework.

Planning Policy Statements set out policies on land use and other planning matters and apply to the whole of Northern Ireland. They are gradually replacing the policy provisions of the Planning Strategy for Rural Northern Ireland. Their contents are taken into account in the preparation of development plans and are also relevant to decisions on individual planning applications.

The draft PPS 18: Renewable Energy was released for consultation in November 2007 in Northern Ireland and has been used as guidance in the preparation of this Environmental Impact Statement for Pigeon Top. PPS 18 sets out the DOE's planning policy for all renewable energy developments. The project design and layout also incorporates the new draft Supplementary Planning Guidance, which was released for public consultation in February 2008.

Northern Ireland's wind energy industry is maturing in response to the need to take immediate action to reduce greenhouse gas emissions and limit the effects of climate change. The development of wind energy projects in Northern Ireland can provide considerable benefits for the environment, the economy and the sustainability of the province's energy security.

In its fourth Assessment Report published in 2007, The Intergovernmental Panel on Climate Change projected that global average surface temperatures could climb by between 1.4°C and 5.8°C by 2100. This could trigger a rise in sea levels, which in turn would endanger coastal areas and small islands, and lead to a greater frequency and severity of extreme weather events.

The burning of coal, oil and gas for electricity generation is one of the major causes of climate change. It is widely recognised across the UK that current and future energy policy must be focused on low carbon and zero emission technologies, improving energy efficiency, and massively increasing the uptake of renewable energy resources such as wind energy.

The UK government has set an achievable goal for renewable energy with a 15% target by 2020. An interim target of 12.5% for 2012 has also been established. In addition, the Climate Change Bill 2008 sets legally binding greenhouse gas emission targets, with the UK Government required to report progress every five years.

Progressive wind energy policy incentives across the European Union are backed up by market stimulus packages including Renewable Obligation Certificates (ROCs) and other mechanisms, which help drive major investment into the wind industry. At present, one ROC represents 1 Megawatt hour (MWh) of renewable energy. Energy suppliers need ROCs to prove compliance with the set targets. This they do through presenting ROCs each year to the electricity regulator, Ofgem.

Strengthening these obligations through the Energy Bill will drive greater deployment of renewable based energy in the UK. This will increase the diversity of the UK's electricity mix, thereby improving the reliability of energy supplies and helping to lower carbon emissions from the electricity sector.

Wind energy will play a vital role in helping to combat the effects of climate change and increasing the sustainability of our energy supply in Northern Ireland.



Photomontage view of the four southmost turbines at Pigeon Top - just south of the wind farm on the Cornavarrow Road



People have many questions about wind turbines; what they look and sound like and how it will look when a turbine or wind farm goes up in the community. As a relatively new feature in the environment they generate a lot of public interest and debate.

A survey conducted by Millward Brown Ulster revealed that 87% of people in Northern Ireland support the deployment of wind farms to help meet the country's current and future energy needs. This overwhelming endorsement for wind energy was unveiled by the BWEA in 2004 at the Northern Ireland launch of *Embrace the Revolution*.

Studies elsewhere have shown that people who live near wind farms have a more positive attitude than those who live further away.

Information about the wind farm has been posted to government agencies, the local council, local community groups and key stakeholders. Anyone requiring additional information is invited to contact TCI Renewables.

An information leaflet and Freepost comment postcard were distributed to approximately 460 homes within a three kilometre radius of the proposed site. This gave local residents the opportunity to comment on and receive further information about the proposal.

Two public exhibitions were held in the local area, which gave an opportunity for residents and other interested parties to view more details of the proposal and to put questions directly to TCI Renewables staff. The first exhibition was held at Omagh Community House on Friday November 21st 2008 from 1.00-7.30pm. The second was held at the Enterprise Centre in Drumquin on January 14th 2009 between 1.00pm and 7.00pm. Both events were advertised in the local press two weeks before.

So far, the response to the Pigeon Top Wind Farm proposal has been positive and we are confident that support will grow as people learn more about the project.

TCI Renewables will issue a press release to local newspapers when the project is submitted to the Planning Service.

Wind power delivers zero-emission renewable energy. Wind farms help in securing and safeguarding Northern Ireland's energy supply system. Furthermore, they reduce our reliance on imported fossil fuels such as oil, coal and gas.

Based on figures produced by the British Wind Energy Association and The Carbon Trust, over its expected 25-year operational life the 20.7 MW Pigeon Top Wind Farm will save around 570,000 tonnes of carbon dioxide (assuming the wind farm output is off-set against coal fired generation).

Construction contracts for the supply of concrete and stone will be available for tender by local companies and the construction of the turbine foundations, installation of the turbines and laying of the electric cables are all likely to involve the employment of up to 40 people over a period of around twelve months. Additionally, plant and materials will be sourced locally where available.

Income in the form of rates will also be generated by each turbine installed within the Omagh District Council area. These are paid annually and are estimated at approximately £100,000 per annum for the nine turbine proposed.

The operation of the wind farm also represents an educational opportunity for schools, local community groups and the public. It will help in raising awareness of wind energy generation, energy conservation and sustainability, and diversification for the local farming community.



Based on BWEA figures for average UK household electricity consumption of 4,700 per kilowatt-hour (KWh), the Pigeon Top Wind Farm will provide the equivalent annual electricity for about 11,500 homes.

Electricity generated by the proposed development will feed into the national grid and displace conventional forms of electricity generation. Using the electricity-to-carbon dioxide conversion factors from DEFRA and the Carbon Trust we can predict the volume of carbon dioxide offset as a result of the wind farm.

Using these guidelines, the proposed development will reduce annual equivalent carbon dioxide emissions by approximately 22,900 tonnes per annum (based on offsetting coal fired generation - see footnote).

The generation costs of onshore wind power are around 3.2 p/kWh (pence per kilowatt hour) (+/-0.3 p/kWh), with offshore at around 5.5 p/kWh, compared to a wholesale price for electricity of around 5.0 p-8.0 p/kWh. The additional system cost, should a wind energy penetration of 20% be achieved, is estimated to be around 0.17 p/kWh according to the Sustainable Development Commission (Nov 2005).

Besides these strategic environmental benefits there will be specific direct benefits to the local economy, including:

- Jobs during the construction phase.
- The purchase of local construction materials and the hire of plant and equipment.
- The potential for a local maintenance contract.
- The contribution to local government revenue via business rates.
- Additional benefits to other areas of the local economy (hotels, retailers and other businesses) arising from the temporary concentration of labour resources.

One of the largest forms of local benefit relates to the awarding of civil engineering contracts. Local contractors in County Tyrone are well placed to tender for this work, which typically accounts for up to 15% of the overall development costs of approximately £27 million.

(Guidelines to Defra's GHG conversion factors for company reporting, DEFRA 2007. [www.defra.gov.uk/environment/business/envrpl/pdf/conversion-factors.pdf](http://www.defra.gov.uk/environment/business/envrpl/pdf/conversion-factors.pdf)).

## Flora and Fauna

A habitat survey was undertaken in accordance with industry standards. A *Phase 1 Habitat Survey* provides an assessment of habitat presence and quality. Otter and badger surveys were also made at the same time (in September 2006) by experienced ecology staff at RPS Planning & Environment. Additional site visits were carried out in June 2007, June 2008 and November 2008 to reflect finalised design layout changes and mitigation measures.

No plant species scheduled on the Wildlife (Northern Ireland) Order 1985 were noted during the surveys. Also, no field evidence of otter was noted in either of the two mammal surveys. One active badger sett was observed between Cornavarrow Burn and Small Point, however this is over 300 m from the closest turbine or access track. The site is not considered important for the roosting of bats and impact upon them is considered as low. No other faunal species listed on Northern Ireland Priority Species were noted using the study area.

The final proposed wind farm development has been redesigned significantly since the consultant was appointed to advise on ecological effects in 2006. In response to the findings of the initial habitat survey and concerns of the Northern Ireland Environment Agency, all steps have been taken to avoid blanket bog in the siting of the turbine and the routing of access tracks. Existing tracks are now extensively incorporated into the scheme design (approximately 60% of proposed total track length). Two turbines (and access tracks to them) have been relocated from blanket bog onto marshy and acidic grassland habitat. Therefore, mitigation-by-avoidance has been used to reduce the significance of effects on the most sensitive habitats present.

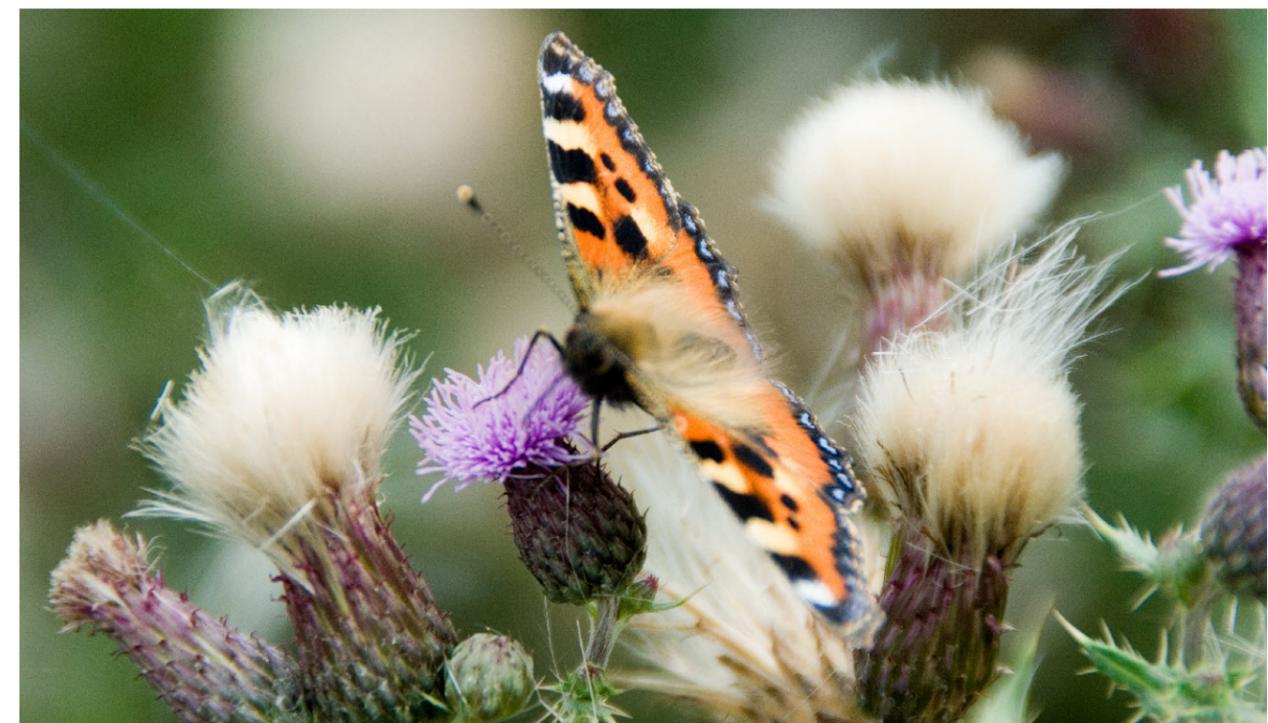
Construction of the turbines and ancillary equipment will be carried out between August and February to avoid the disturbance to breeding birds. Care will be taken to prevent construction activity extending beyond the footprint of the development.

A Habitat and Species Conservation Management Plan has been submitted with the application to ensure mitigation is fully observed. This outlines strategies to ameliorate the site after construction and manage the working wind farm for biodiversity gains.

## Birds

Ornithological studies took place at the site for a period of twenty four months and included vantage point, moorland, breeding bird, hen harrier specific and wintering breeding studies over the two year period. In total 48 species were observed during the vantage point watches of which 26 are considered of conservation note. 34 species of breeding bird were noted of which 11 are considered of conservation concern, however only the Hen Harrier was listed as an Annex 1 species.

Two years of specific Hen Harrier breeding surveys were carried out to ensure that the bird was monitored adequately and that appropriate mitigation measures were put into the design process to mitigate potential disturbances of this species. This involved the removal of the two most proximate turbines to the species potential nesting ground.



The landscape and visual assessments are separate, but linked procedures. Landscape impacts describe changes in the physical character of the environment and how this is experienced. Visual impacts relate to the actual views and visual effects of the turbines when they are in place.

To establish a thorough understanding of what the turbines will look like when built, a series of photomontages have been produced using selected locations around the site. Montages use a combination of original photographs and computer rendered images. All the images are reproduced in an A3-sized portfolio, which is a part of the overall Landscape and Visual Impact Assessment and which contains other map-based visual studies and models such as wire frame diagrams, zone maps and shadow flicker graphs.

The assessments were undertaken with reference to guidelines published by the Landscape Institute/Institute of Environmental Management and Assessment.

## Landscape Character Assessment

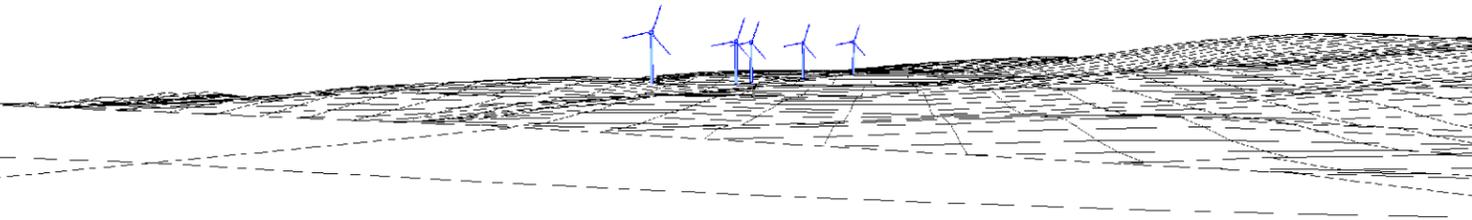
The starting point for the assessment was to gain a detailed appreciation of the existing landscape with reference to guidance published by the Northern Ireland Environment Agency (NIEA). The assessment subdivided the landscape around the site into areas with shared or similar characteristics (character areas). Once this detailed breakdown had been completed, the effect of the proposed wind turbines on each of the character areas was assessed.

The proposed site is located within the Lough Bradan Landscape Character Area that extends from north east Fermanagh to the Lough Bradan Forest in West Tyrone. The area is characterised by valleys and steep drumlins on the lowlands, with a transition to an undulating sandstone plateau. To the north east, the land rises to the rounded summits of Pollnalaght (268 m ASL), Dooish (341 m ASL) and Tappaghan Mountain (333 m ASL).

The landscape assessment also considered the effects on the physical components of the landscape such as trees, hedgerows and existing tracks around the site. The proposed Pigeon Top Wind Farm will result in no direct loss of key features but will result in the introduction of tall vertical structures within this elevated landscape. The immediate surroundings are complex with numerous low rounded hills, extensive plateau incised with river valleys.

The new turbines will be relatively prominent features in the immediate area of the site at Pigeon Top. They will be read with other man made features that will distract the eye of the viewer interpreting this landscape however, the magnitude of landscape change will be high in close proximity. The nature of the undulating topography, the fact that the site is surrounded by taller hills (particularly to the west and north) and the presence of extensive forestry within this and surrounding landscapes significantly restricts the influence of the turbines on this extensive landscape character area. The proposed wind farm therefore has very low levels of influence over large parts of this landscape character area.

The predicted significance of landscape impact will be substantial for the immediate Landscape Character Area at Pigeon Top. The remaining Landscape Character Area on adjacent hills and mountains will not be significantly affected by the proposal.



A wire frame model of the view from the Glen Road - west of the site and about 1.8 kilometres to the nearest turbine

## Visual Impact Assessment

Using computer based techniques, the visual assessment identified areas from which the proposed development would be theoretically visible. These Zones of Theoretical Visibility ZTVs, were tested in the field.

A total of 30 of viewpoints have been assessed and only three viewpoints (V06 Dooish Road Bridge, V21 Dooish Crossroads and V26 Omagh Road) will have a significant visual impact because of the close proximity of the turbines.

An assessment of potential cumulative landscape and visual impacts has been completed for Pigeon Top Wind Farm incorporating the five existing, four approved and six proposed wind farms within a 20 km radius. The assessment of the nearby Pollnalaght proposed wind farm, when combined with Pigeon Top, results in a cumulative landscape and visual impact that is limited but significant, confined within a narrow upland valley between the two proposed developments. Significant cumulative visual impacts have been predicted for a total of just seven of the 30 assessed viewpoints. Overall, there will be no significant cumulative landscape and visual impacts for the vast majority of the 20 km study area when combined with existing and proposed wind farms.

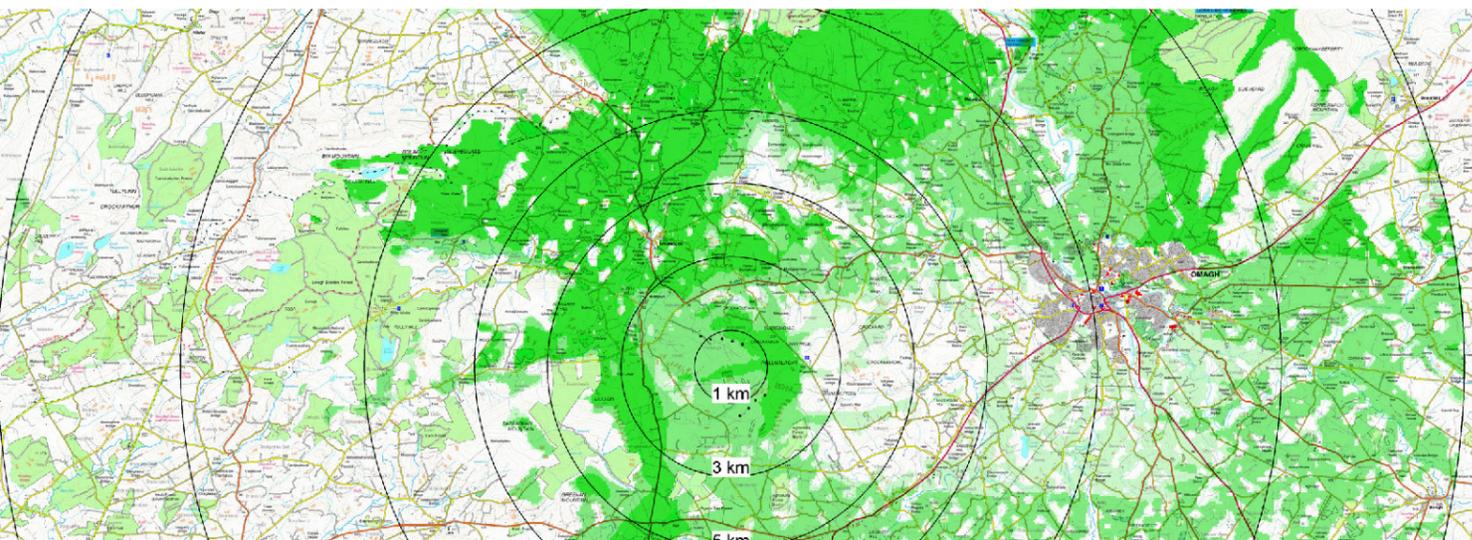
The overall predicted landscape resource change caused by the proposed Pigeon Top development will be slight/moderate across the wider landscape within a 20 km radius. It is only in close proximity to the proposal that significant impacts occur. The landscape assessors have concluded that the broader landscape character area has the capacity to absorb a development of this scale.

The fixed lifetime of the proposed wind farm is such that the duration of any effects would be limited and reversible (consent is being sought for a period of 25 years).

## Photomontages

Using turbine geometry and digital terrain data a wire frame image of the wind farm and surrounding terrain is generated from each viewpoint using a standard proprietary software package. The wire frame model is combined with a photograph from each location to produce the final representative photomontage of what the eye would see at that vantage point.

Extract from a ZTV map showing varying degrees of visibility of the turbines



Archaeology consultants Gahan and Long assessed the effects the proposed development might have on any archaeology within the development site and in the surrounding area.

A desk top survey was made to identify any known sites of archaeological importance within the development area, extending to a radius of five kilometres around the wind farm. Coupled with this, a site inspection was undertaken to identify any previously unknown or unrecorded upstanding sites which may exist within the area.

No archaeological sites were identified within the area of the proposed development. The search of the five kilometre radial area revealed 21 sites, none of which are scheduled monuments.

Following an evaluation it was found that the construction of the wind farm may have a slightly adverse effect on the localised archaeological environment.

Given the existence of archaeological activity in the surrounding environs, it is possible that previously unknown sub-surface archaeological deposits may exist within the limits of the proposed development site. Should such features be discovered during development, then a potential impact and mitigation strategy will be implemented.



## Hydrology, Geology and Hydro-geology

The assessment of soils, existing ground conditions, geology and hydro-geology was undertaken by WYG Environmental with a detailed peat risk analysis carried out by Whiteford Geoservices. The proposed development area is predominantly underlain by peat which is typical of upland areas of Ireland. These areas are considered as having very limited agricultural potential.

A site walkover survey and a review of current Ordnance Survey maps assessed the surface water regime and feasibility of the proposed wind turbine locations. It was found that all of the proposed locations are in areas of low risk to peat slide and bog burst due to the presence of thin peat cover over the majority of the site (predominantly under one metre deep). In addition, mitigation measures will be implemented during construction to ensure that all on-site water courses are protected fully from potential pollutants.

The Rivers Agency has confirmed in a consultation letter that the site contains no designated water courses and that no flooding incidents have been recorded at the Pigeon Top site. All of the proposed turbine locations are positioned on raised topography and no evidence of flooding was observed during the site walkover.

A detailed peat probe and peat slide risk assessment was also undertaken to confirm the extent of peat cover and peat depth at each turbine location, access track, temporary storage compound and substation building. The assessment revealed that all nine turbine locations and the access tracks were deemed to be at insignificant risk to peat slide if all mitigation measures recommended are carried out fully during project construction.

## Air and Climate

Wind power avoids many of the environmental costs of conventional electricity generation, including reduction in air quality and damage to the natural environment caused by acid rain from pollutants such as oxides of nitrogen (NO<sub>x</sub>) and sulphur dioxide (SO<sub>2</sub>).

Electricity produced from wind farms can displace electricity that would otherwise be generated from fossil fuel power stations and reduces greenhouse gas emissions. For each year of its operation, the Pigeon Top Wind Farm will help prevent the annual emission of approximately 22,900 tonnes of carbon dioxide (CO<sub>2</sub>).

As such, the Pigeon Top Wind Farm will help improve air quality and contribute towards achieving national targets to reduce carbon dioxide emissions and increase the percentage of renewable energy generated within Northern Ireland.

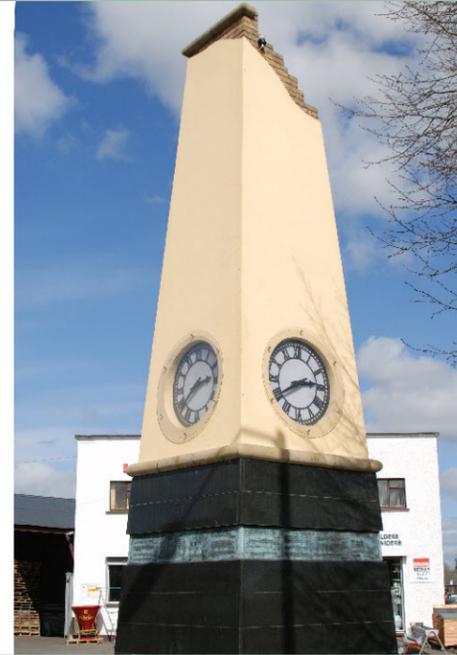


Noise is created by wind turbines as they rotate. The principle sources of noise are the turbine blades passing through the air and the internal machinery such as the gearbox and generator. Wind turbine blades are carefully designed to minimise noise and the nacelle which houses the mechanical equipment at the top of the tower is sound insulated. Modern turbines are so quiet that it is possible to carry out a normal conversation standing at the base of a tower.

The potential noise effects have been assessed in accordance with the accepted methodology as set out in government planning guidance. A background noise survey was carried out by environmental engineers White Young Green at the nearest residential properties around the site boundary between September 4th and September 11th 2008.

Predictions of worst-case noise level were carried out based on the proposed site layout and the maximum warranted noise level emitted by turbines of the type proposed. This assessment also included a cumulative study to include the turbines proposed for the adjacent Pollnalaght Wind Farm project (12-turbine proposal). The predicted noise levels were then compared with the noise limits defined in the recognised guidance document, ETSU-R-97, over a wide range of wind speeds. The assessment concluded that noise emitted by the wind turbines will comply with the defined noise limits during the day and night at all locations and that there will therefore be no significant effect on amenity at properties in the area from the proposed wind farms.

Noise from construction activities will be within normal guidelines and have a minimal affect. Increased traffic noise will be experienced for the days during pouring of the concrete turbine foundations and construction of the access tracks.



It is anticipated that local opinion will reflect the attitudes held by the participants of the surveys to wind farms undertaken in the UK between 1992 and 2005, with the majority of local people supporting wind energy developments in Co. Tyrone.

The results of visitor-surveys in the UK show that visitors to an area are unlikely to be put off by the presence of a wind farm and that while people can be concerned at proposals for wind turbines in their area, these fears are generally eased when the development becomes operational.

In May 2006 the BWEA released a report, 'The Impact of Wind Farms on the Tourist Industry in the UK'. It revealed that visitor numbers in popular tourist areas with wind farms increased in Northern Ireland in 2001-2004 from 1.68 million to over 2 million. During this period 10 wind farms were operational, thus indicating that wind turbines are not having a detrimental effect on tourism.

The effects on tourism by the Pigeon Top Wind Farm are difficult to quantify; however, TCI Renewables considers that the nine turbines at Pigeon Top will not make a significant difference to the attitudes of tourists in the area. In fact, turbines may help stimulate the local economy through increased spending from people visiting wind farms in the Omagh region.

## shadow flicker and reflectivity

Shadow flicker from wind turbines can occur when a particular combination of weather conditions coincide in specific locations at particular times of the day and year. It usually occurs when the sun is low in the sky and shines on a building or location from behind a turning rotor. The shadow of the turbine blades appears to flick on and off as the turbine rotates.

TCI Renewables has counted the number of hours per year likely to be experience shadow flicker under exceptional circumstances using the geometry of the machines and the latitude of the potential site. There are no properties located within the potential shadow flicker zone (10 rotor diameters - just over 700 metres) at the Pigeon Top site and as a result there is not expected to be any shadow flicker impact as a result of the proposed turbines.

Measurements can be taken to minimise the potential occurrence of reflectivity from the turbines by carefully selecting both the colour and finish of the turbine blades. It is proposed to use an industry-recommended pale grey colour with a semi-matt finish for the turbine blades. This colour is considered the best to achieve minimal reflection in the Northern Ireland locality.

Post construction monitoring can be implemented if deemed necessary by the Planning Service.

## transport

The Environmental Statement provides a detailed description of the route to be followed from the chosen port facility to the Pigeon Top site including traffic management procedures required at junctions and roundabouts. It also details the breakdown and schedule of the number and size of vehicles associated with the construction, operation and decommissioning phases of the development.

The effect of increased wind farm construction traffic on the local road network has also been assessed. It is acknowledged that during the construction phase there will be a temporary increase in traffic flows on the local road network due to vehicles carrying turbine components and building materials.

A relatively small number of oversized loads will be required to carry the long blades, towers and heavy turbine components to the site. Once these are delivered and installed, traffic entering the site will be substantially reduced, with maintenance vehicles visiting the site only intermittently. The haulage route and traffic assessment concluded that the local transport network will require some improvement and widening works at some junctions to accommodate the additional traffic movements associated with the construction of the wind turbines.

Any transport mitigation measures proposed by the Roads Service and TCI Renewables in cooperation with the turbine haulage contractor will be agreed prior to construction. A traffic management plan will also help to minimise the impact on local roads and traffic to ensure the safety of all road users.



Wind turbines, as with any large structures, have the potential to interfere with electromagnetic signals, such as television, civil and military aviation activities, communication and microwave links and radar. The turbine construction phase must include provisions for safeguarding existing aviation and ground based infrastructure.

TCI Renewables has consulted extensively with public and private operators to establish the electromagnetic environment within and around the Pigeon Top site.

Through careful selection of the turbine site and ongoing consultation with operators, TCI Renewables is working to avoid the possibility of interference with any radio broadcast communication equipment. If television reception problems do occur once the turbines are operational, then remediation measures can be taken. These may include the restoration (or even improvement) of TV reception by redirecting or replacing domestic TV aerials or installing digital TV facilities.

## Aviation

Belfast International Airport, George Best Belfast City Airport and City of Derry Airport were sent details of the wind farm proposal. No objections were raised.

There are a number of potential hazards and risks that might be associated with the construction and operation of the Pigeon Top Wind Farm. However, all statutory health and safety requirements and planning conditions will be adhered to during the construction phase of the project.

All hazardous areas will be fenced off and unattended machinery will be stored on site and immobilised to prevent unauthorised use within an enclosed compound. Any potentially hazardous materials will be managed in accordance with Duty of Care. In addition, temporary construction safety signs will be erected and placed in the most appropriate locations.

The lands on which the wind turbines will be sited are privately owned and there will be no unauthorised access to the wind farm site. Public health and safety measures will be confined to working personnel and landowners.

The turbine towers will be locked at all times, except when attended by authorised maintenance personnel.

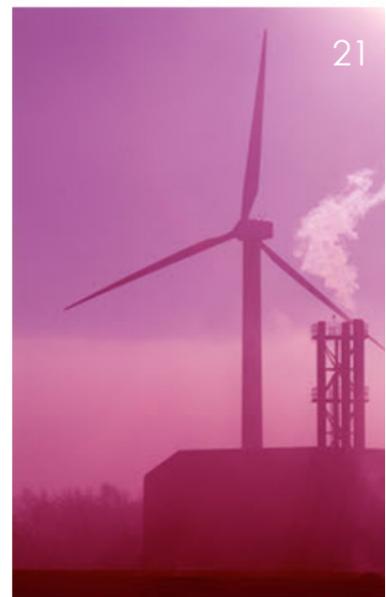
The turbine models being considered for this site will operate automatically and have sensors to detect any voltage irregularities or unsafe operation during periods of severe winds. Should a technical fault be diagnosed via a computer control system, the individual turbine or wind farm will shut down.

No negative impacts have been identified regarding public health and safety issues and as a result, no mitigation measures are considered necessary other than the implementation of all relevant standard health and safety legislation and by regulating public access.

## Decommissioning

At the end of their operational life, it is proposed that the turbines will be removed. The upper sections of the turbine foundations will be taken away and the voids will be backfilled with appropriate material, the topsoil replaced, and the area re-seeded.

Tracks that are to be utilised by the landowners will be left in-situ, otherwise these will be covered by topsoil and re-seeded. At least six months prior to decommissioning works a decommissioning method statement will be prepared for agreement with the Planning Service and Omagh District Council.



This non technical summary has outlined the findings of the Environmental Impact Assessment (EIA) for the proposed nine-turbine, 20.7 MW Pigeon Top Wind Farm development. Full details are set out in the Environmental Statement and its accompanying technical appendices.

The Pigeon Top site was selected for its excellent wind resource, suitable topography, noise compliance, sparse residential population in proximity to the site and accessibility with due regard to challenging planning constraints.

The EIA has demonstrated that any potential adverse effects of the wind farm can be managed and mitigated and that there will be lasting social and environmental benefits arising from this wind energy development.

Whilst the wind farm will have some minor residual effects on the local environment, most of these have been addressed through mitigation measures, good management and proposed construction techniques. The primary residual effect is predicted to be the cumulative visual change within the Lough Bradan Landscape Character Area.

The Pigeon Top project will make a positive contribution to sustainable energy generation in Northern Ireland. When added to the other existing and proposed wind farms in County Tyrone, they could potentially generate more than 130 MW of wind power into Northern Ireland's electricity system.

The wind farm will also contribute to a reduction on the production of greenhouse gases and provide over 54 gigawatt hours every year of stable, secure energy for this region. The wind farm will also help diversify and sustain the rural economy of County Tyrone through farmland diversification, construction and operation and maintenance activities.

It is the view of TCI Renewables that the proposed wind farm at Pigeon Top, County Tyrone, is a justifiable and environmentally sustainable development and should be granted planning permission.

*Computer-generated cumulative photomontage looking northeast from the crossroads of the Dooish and Drumlish Roads at about four kilometres from the Pigeon Top site (indicated). The two turbines at the far left are from the Curraghmulkin proposed wind farm site. Those in the centre and far right are from the Pollnalaght proposed wind farm site.*

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