

Outline Business Case for a Small Wind Turbine

1. Executive Summary

Proposal for Rochdale MBC to develop a small wind turbine on Council owned land as a pilot project for a wider wind programme.

The project will be owned by RMBC and the pilot turbine will be operational during the 2013/14 financial year. The turbine will operate for a total project life of 25 years. The preferred turbine is a Gaia 11 kW, which has a hub height between 15 to 25 metres, and will power the equivalent of 6 homes whilst offsetting 14 tonnes of CO₂ annually.

2. Introduction

Our ambition, as set out in the Wind Energy Strategy is to become a council that is self-sufficient in energy. This would be a fantastic achievement and wind energy can provide a significant contribution towards the council realizing this vision.

To achieve this ambition, a feasibility assessment was commissioned in April 2013 which assessed the suitability of land owned by the Authority for locating small and medium scale wind turbines. This assessment identified suitable locations for supporting three medium scale turbines, and nine small wind turbines.

Wind energy is a commercially mature technology, with a number of projects either operational or at application stage within the Borough from private sector developers. The projects receive subsidies from the UK Government which are guaranteed to increase by RPI for 20 years, providing highly attractive returns on investment.

A number of Local Authorities across the UK are developing wind energy and renewable energy programmes. RMBC has the opportunity to take the lead within AGMA and have the first wind energy programme within the GM sub-region. This will deliver strong reputational benefits to the Borough's environmental credentials as the capital of wind in Greater Manchester.

3. Overview & Strategic Context

National Policy Framework

There are clear aims and policies at a national strategic level that underline the need to meet renewable energy targets. The Government renewable energy target seeks to generate 10% of UK electricity from renewable sources by 2010. As a minimum, the UK must meet its legally binding target of 15% by 2020 as set out in the EU Renewable Energy Directive.

Sub Regional and Local Policy Framework

The Council has a statutory duty to meet stringent carbon reduction targets. The Council is a partner to the Greater Manchester Climate Change Strategy and has agreed targets to reduce CO₂ emissions by 48% by 2020. Through the Rochdale Green Action Plan, the Council has already made inroads in to saving energy, reducing water usage and making carbon reduction savings.

4. Links with other projects

This project links with the Rochdale Green Action Plan, which is the Council's overarching sustainability strategy. The Rochdale Green Action Plan sets out our ambitions to be the "Greenest Borough" in the country. It covers actions across seven strategic themes including; Green Economy, Built Environment and Waste & Recycling.

This project also links with the activities of the recently established Greater Manchester Low Carbon Hub. This body is driving projects aimed at delivering significant CO₂ reductions across the city region as part of GM's City Deal with Central Government.

The pilot wind turbine, as part of the Council's wider wind energy programme, will significantly contribute to the efficiency programme across the authority, creating sizeable revenue streams that will reduce budget pressures on other areas of the authorities work.

5. Proposal

The proposal is for the Council to develop a pilot project of a single small wind turbine on land owned by the Authority.

The project will be owned by RMBC and the pilot turbine will be operational during the 2013/14 financial year. The turbine will operate for a total project life of 25 years. The preferred turbine is a Gaia 11 kW, which has a hub height between 15 to 25 metres, and will power the equivalent of 6 homes whilst offsetting 14 tonnes of CO₂ annually.

The pilot project will be the first in a series of wind projects which will potentially deliver 3 medium scale turbines and up to 9 small wind turbines. All of the follow-on wind projects will be subject to individual business case proposals and will all contribute positive financial returns on investment of between 8.6% IRR for small wind turbines, and IRR of 13% to 14% for Medium scale turbines. Each medium scale turbine will deliver lifetime returns in excess of £9 million from an initial £1.6 million investment.

From an initial 147 potential sites for small wind turbines, after the first and second stage feasibility assessments there are nine initial suitable locations for small wind turbines.

6. Consultation

Consultation has taken place with the Leader of the Council, Cabinet Member for Economic Development and Customer Services, Chief Executive, Director of Finance, Director of Economy and Environment, Finance and Procurement Service, Legal Service and Planning and Regulation Service. Further consultations are planned also with the Leadership Team and Informal Cabinet later this month. It may be appropriate for Informal Cabinet to review and discuss the potential locations for the pilot wind sites.

We have also consulted other local authorities who are developing wind energy and an independent expert through the Association for Public Service Excellence.

7. Viability & Affordability

Electricity prices have risen on average over 9.1% over the past 10 years. Department for Energy and Climate Change's (DECC) central scenario predicts electricity prices will increase by a further 58% over the next ten years. It makes sound financial sense therefore, for the council to install renewable energy technologies on its premises, especially wind power.

Wind energy is the most profitable form of renewable energy generation technologies and has been commercially viable for over 20 years in the UK.

The small wind pilot project would be funded from prudential borrowing and will have a total life span of up to 25 years. The project has an initial capital investment of £68,000 and would generate a total return of £165,000 over its lifetime, delivering a positive IRR of 8.6% as set out in the table below:

Investment (2013)	£68,000
Total Income (25 years)	£233,000
Total Net Return (25 years)	£165,000
Project IRR	8.6%

The project will generate income from both the sale of electricity back to the grid and from the Feed-in-Tariff subsidy, which is Government backed and

guaranteed for the first 20 years. The financial returns include the cost of the project being fully maintained and serviced to ensure optimum performance throughout the projects lifetime. No further capital outlay would be required from the Council following the initial investment.

The turbine would also deliver environmental benefits, offsetting 14 tonnes of CO₂ annually, delivering 25 MWh of clean electricity each year.

Risk	Severity	Likelihood	Mitigation
Proposals not profitable	High	Low	Through undertaking comprehensive business plan and use of suitable partner
Costs increase	Medium/ High	Medium	Through full site investigation as each site identified and use of suitable partner
Procurement issues	Medium / High	Low	Legal advice secured on procurement options
Lack of internal expertise	High	Low	Use of suitable partner Develop local expertise Enter into life of asset management arrangements
Future energy price increases	High	High/Medium	The wind energy programme would generate and sell electricity delivering a natural hedge against raising electricity costs
If the project is delayed	Medium	Medium	Decision risk; the borough reaches saturation before the RMBC wind programme is progressed effectively blocking any further wind development. Decision requested from Cabinet to proceed with the pilot Delivery/Operational risk; use of a suitable partner so that the project is not delayed

8. Project Management and Timescales

Should the project be approved by the Cabinet in July 2013, the turbine will likely be operational during the 2013/14 financial year. Dispensation is requested for the project to be managed by ASC Renewables, a Manchester based wind energy specialist company which completed the initial

assessment of the wind capacity across the Council land ownership. ASC Renewables will be paid a small project management fee of £8,000 which is only payable at the point the project is commissioned (turbine is erected and first connected to the grid). The proposed project timeline is set out below:

July 2013	<p>Project approved by the Cabinet.</p> <p>Legal contracts and SLA will be reviewed and negotiated with ASC Renewables, who will manage the delivery of the project, and the turbine manufacturer who will supply and install the turbine</p> <p>The Leader of the Council, the Cabinet Member for Economic Development and Customer Services and the Director of Economy and Environment to agree the location of the pilot wind turbine</p>
August 2013	<p>Letter of engagement / contract signed with ASC Renewables and the turbine manufacturer.</p> <p>Order placed with turbine manufacturer which will be paid directly by the Council subject to a Service Level Agreement for ongoing service and maintenance.</p> <p>Further assessment of the site location to include the turbines preferred location, transport access and grid connection</p>
September 2013	Planning application submitted by ASC Renewables
October 2013	On-going ground preparation and feasibility reviews conducted
December 2013	<p>Planning approval granted</p> <p>Turbine delivery preparation undertaken</p>
January 2014	Turbine delivered, installed and connected to the local grid
February 2014	Turbine test period completed and the Feed-in-tariff subsidy documentation formally submitted
March 2014	Project fully operational