

**DERBYSHIRE COUNTY COUNCIL**

**CABINET MEMBER MEETING**

**23<sup>rd</sup> January 2014**

**SHIPLEY COUNTRY PARK WIND TURBINE**

**Report of the Director of Property and the Strategic Director of  
Economy, Transport and Environment**

**1. Purpose of the Report**

To provide an update on the issues encountered with the wind turbine at Shipley Country Park along with an overview of the remedial options that have been proposed and to seek approval for the preferred option.

**2. Information and Analysis**

At its meeting on 8<sup>th</sup> August 2006, Cabinet granted approval of the financing and installation of a Proven 15kW wind turbine at Shipley Country Park. Since the initial approval, the selected turbine experienced technical problems which delayed the progress of the wind turbine installation. Following the resolution of the issue and testing of the fix to the turbine, a subsequent report was considered by Cabinet on 6<sup>th</sup> May 2008 and approval was granted to proceed with the project with costs of £44,850 being met by the Council. At that time, the business case was approved on the basis of promoting the Council's commitment to sustainable energy and reducing carbon emissions and electricity costs. Feed in Tariffs (FiTs) did not come into effect until April 2010 and therefore the installation was not eligible for the FiT.

The turbine was installed and commissioned by Eagle Power on 24<sup>th</sup> September 2008, but during November 2008 and January, April, May and November 2009 was off-line due to a series of intermittent faults. Subsequently, on 4<sup>th</sup> December 2009, the manufacturer, Proven Energy, advised customers to put the brakes on the unit until further notice due to a major fault. During 2010, Proven energy returned to the site to undertake remedial works on the turbine and was brought back into service again in July 2010. In September 2011, Proven Energy advised all customers to shut down their machines again due to a number of major faults and later that month, Proven Energy entered into receivership and was sold to Kingspan in October 2011.

Kingspan however have not taken on the liability for the previous owner and have no legal obligation to honour any outstanding warranties and as such all outstanding issues have been passed to the installer. As such, Council Officers have been working with the installer to assess the viability of fixing the turbine. The information below outlines each option.

### **Option 1 – rejected**

VG Energy is the primary company offering a fix for the turbine. The costs are suggested to be in the region of £10,000 excluding costs of transporting the turbine to VG Energy in Scotland. However, no data has been made available for any of the known turbines that have undergone this fix, providing no guarantee that this would work and no assurance against mechanical failure in the future.

### **Option 2 – rejected**

Eagle Power, the original installer, have proposed that parts of the turbine could be exchanged utilising parts of a 6kW turbine, essentially reducing the potential output of the turbine. With a quotation in the region of £8,000 and estimated annual electricity savings of £895, the payback on the cost of the fix would be least 23 years. The installer is currently trialling this fix, but cannot at present guarantee it.

### **Option 3 – rejected**

The Council could decommission and remove the wind turbine at a cost in the region of £1,500 based on a previous quotation. Once removed, the turbine could be sold for spare parts, but based on optimistic market values, this option could be cost negative to the Council.

### **Option 4 – recommended**

More recently, it has been suggested that the 15kW turbine be replaced with the Kingspan 6kW unit with adaptations made to the tower to accommodate the new unit, which the installer has provided a quote for £13,500. As the replacement would be a new turbine altogether, it would benefit from a 5 year guarantee and be eligible for the Feed in Tariff. Based on average site wind speeds and according to the manufacturer's product specification, the turbine should produce in the region of 10,000kWh annually. However, due to the location of the turbine and nearby obstructions, it is more conservatively estimated that output would be in the region of 6,000kWh, which would meet approximately 4% of on-site electricity demand. Based on that, the information below provides an overview of the estimated savings, income and payback on the capital investment.

6kW turbine head	£8,500
Top mast section	£1,350
Overvolt protection	£1,000

## PUBLIC

Installation	£1,200
Transport and offloading	£1,000
CAPITAL COSTS	£13,050
Corporate Property fee @ 10%	£1,305
<b>TOTAL COSTS</b>	<b>£14,355</b>
Annual saved electricity costs	£600
Annual FiT income (based on current FiT applicable until 31 <sup>st</sup> March 2014)	£1,438
Annual maintenance	£550
Annual net benefit	£1,488
Payback (years)	<b>9.6</b>

During November 2013, a 4kW solar PV was installed on the roof of the Visitor Centre. With an estimated annual generation of 2,750kWh, this system along with the proposed wind turbine replacement will meet 6% of the on-site electricity demand further helping to reduce energy costs.

### 3. Council's Commitment

This proposal demonstrates the Council's commitment to increasing energy efficiency and reducing carbon emissions from County Council buildings and developing the green technology sector, further developing its leadership role on mitigating climate change.

Offering a wide range of recreational facilities, Shipley Country Park attracts over 700,000 visits per year with visitors enabled to enjoy and understand the countryside, including; 20 miles of footpaths and bridleways, fishing lakes, orienteering and cross country trails, play areas, trim tracks, visitor centre and café, showground, picnic sites and attractive landscapes of meadows, woodlands and wetlands.

The development of renewable energy at Shipley Country Park enhances the commitment to develop the Country Park and Visitor Centre as an exemplar of environmental sustainability that will benefit the local community and users of the park. Historically, the site was dedicated to coal mining, either through deep seam pits or opencast mines. The development of renewable energy sources at the site is ideal as it compares and contrasts the old and new forms of energy generation.

## **PUBLIC**

Every year since 2008, Shipley Country Park has been awarded the Green Flag Award for the quality of green space provision, including a successful community woodland whereby the public can plant trees and native wild flowers as well as provide bird, bat and bug boxes to preserve local wildlife. Shipley Country Park is also home to Green Health Enterprise, an award winning project that trains and support people back into work through developing projects that promote wildlife, woodland growth and horticulture.

The Countryside Rangers also manage volunteer groups that provide opportunities for local people to gain new countryside related skills and make a valuable contribution to park management.

### **4. Financial Considerations**

It is considered that option 4 presents the best value solution. It is proposed that the project can be financed through the Council's Carbon Reduction Initiative Fund, a £500,000 allocation for the investment of energy efficiency and carbon reduction projects on an invest to save basis that was agreed by Cabinet on 3<sup>rd</sup> July 2012.

It should be noted, that the current FiT rate on which the financial income and payback period has been based on is only valid until 31<sup>st</sup> March 2014 after which the FiT rate will be reduced. It is currently thought that the FiT will be reduced in the region of 20%, which will mean the payback on the investment will be extended to over 11 years.

### **5. Legal Considerations**

The contract for the supply and installation of the 6kW unit will be awarded by the Strategic Director for Economy, Transport and Environment in accordance with his powers under the Council's Financial Regulations.

### **6. Considerations**

In preparing this report the relevance of the following factors has been considered; financial, legal, prevention of crime and disorder, equality and diversity, human resources, environmental, health, property and transport considerations.

### **7. Key Decision**

**NO**

### **8. Call-in**

Is it required that call-in be waived for any decision on this report? **NO**

### **9. Background Papers**

Cabinet report – 8<sup>th</sup> August 2006: Shipley County Park Wind Turbine  
Cabinet report – 6<sup>th</sup> May 2008: Shipley County Park Wind Turbine

**10. Officers' recommendation**

That approval is granted to proceed with the proposal to replace the 15kW wind turbine unit with the 6kW unit as detailed in the report.

**JEREMY GOACHER**

**Director of Property**

and

**MIKE ASHWORTH**

**Strategic Director of Economy, Transport and Environment**