

<b>Report to:</b>	<b>EXECUTIVE</b>
<b>Relevant Officer:</b>	Steve Thompson, Director of Resources
<b>Relevant Cabinet Member:</b>	Councillor Jane Hugo, Cabinet Member for Climate Change
<b>Date of Meeting:</b>	12 July 2021

## **SOLARIS CENTRE: RENEWABLE ENERGY PROJECT - REPLACEMENT WIND TURBINES HEADS**

### **1.0 Purpose of the report:**

- 1.1 To seek approval for the project and the Prudential Borrowing required for a renewable energy project to install new wind turbine heads at the Solaris Centre to provide cost viable renewable electricity, contributing towards the Council's Climate Emergency target of achieving 100% clean energy across the Council's full range of functions by 2030.

The cost of the project is £22,380 to be Prudentially Borrowed over 15 years, which amounts to £30,097 including £7,717 interest.

### **2.0 Recommendation(s):**

- 2.1 To approve the project and the Prudential Borrowing of £22,380 required to fund the renewable energy project to install new wind turbine heads at the Solaris Centre.

### **3.0 Reasons for recommendation(s):**

- 3.1 On the 26 June 2019, the Council approved a Climate Change emergency declaration noting:
- That that the impacts of climate breakdown are already causing serious damage around the world.
  - That the 'Special Report on Global Warming of 1.5°C', published by the Intergovernmental Panel on Climate Change in October 2018, (a) describes the enormous harm that a 2°C average rise in global temperatures is likely to cause compared with a 1.5°C rise, and (b) confirms that limiting Global Warming to 1.5°C may still be possible with ambitious action from national and subnational authorities, civil society and the private sector.

Setting the following carbon dioxide emission and renewable energy targets to:

- Make the Council's activities net-zero carbon by 2030;
- Achieve 100% clean energy across the Council's full range of functions by 2030

If the Council is to achieve net-zero carbon by 2030 and achieve 100% clean energy across the Council's full range of functions by 2030 it will need to expand its on-site renewable deployment whilst maintaining existing installations.

The UK has an excellent wind resource available to generate cost viable renewable electricity, which has seen wind energy increase to over 20% of the UK's annual electricity requirement based on 2019 data and have the largest offshore wind capacity in the world.

Blackpool has an average wind resource of 6–7 ms<sup>-1</sup> available, which is ideal for wind turbine electricity generation, particularly in the micro to small generation range.

3.2 Is the recommendation contrary to a plan or strategy adopted or approved by the Council? No

3.3 Is the recommendation in accordance with the Council's approved budget? Yes

**4.0** Other alternative options to be considered:

4.1 Decommission and removal

If the project is not approved, the turbines will be required to be decommissioned and removed from site with the associated ancillary equipment. Budget cost to undertake the works £5,000.

This option would see the removal of Solaris Centre's iconic turbines and an increase in the centre's energy costs and carbon dioxide emissions through the increase in imported electricity from the grid.

It could also potentially compromise the council's ability to meet the 2030 net zero carbon and 100% renewable energy targets across Council services and risk reputational damage to the council's credibility for its climate emergency intentions.

## 5.0 Council priority:

5.1 The relevant Council priorities are both:

- “The economy: Maximising growth and opportunity across Blackpool”
- “Communities: Creating stronger communities and increasing resilience”

## 6.0 Background information

6.1 On the 26 June 2019, the Council approved a Climate Change emergency declaration noting

- That that the impacts of climate breakdown are already causing serious damage around the world.
- That the ‘Special Report on Global Warming of 1.5°C’, published by the Intergovernmental Panel on Climate Change in October 2018, (a) describes the enormous harm that a 2°C average rise in global temperatures is likely to cause compared with a 1.5°C rise, and (b) confirms that limiting Global Warming to 1.5°C may still be possible with ambitious action from national and subnational authorities, civil society and the private sector.

Setting the following carbon dioxide emission and renewable energy targets to:

- Make the Council’s activities net-zero carbon by 2030;
- Achieve 100% clean energy across the Council’s full range of functions by 2030

6.2 Based on 2019 data, the Council is responsible for approximately 12,500 tonnes of Carbon Dioxide due to the associated electricity, gas and water use. Electricity use is the largest cause of emissions accounting for 57%, with gas second at 42%. The Council’s water consumption only accounts for 1% of emissions.

If the Council is to achieve net-zero carbon by 2030 and achieve 100% clean energy across the Council’s full range of functions by 2030 it will need to expand its on-site renewable deployment whilst maintaining existing installations.

## 6.3 The Solaris Centre

In August 2003, construction started on the dilapidated Harrowside Solarium to transform it into The Solaris Centre, the Council’s flagship and regional centre for environmental excellence.

The low energy design building married together glazed solar photovoltaic panels, wind turbines and combined heat and power to provide zero and low carbon energy to the building as a regional first.

The wind turbines, installed in December 2003 at the front of the building comprised 2 No 6kW turbines were also a Blackpool and regional first operating in the public realm, with a revolutionary downwind design.

Following the service and condition inspection in May 2021 the Solaris Centre wind turbines have been put on brake and are no longer in operation. After 18 years of operation and exposure to a harsh marine environment, the inspection identified excessive corrosion outside acceptable tolerances on both turbine head hubs and frames and in line with the manufacturer recommendations the turbines were put on brake and removed from operation.

The options going forwards are:

1. Replace with new marine grade turbine heads
2. Decommission and remove turbines.

**1. Replace with new marine grade turbine heads**

The cost to replace with marine grade turbine heads is £23,880

The enhanced construction of the marine grade turbine heads will provide extra durability in a marine environment giving 20 to 25 years of protection and operation. The design and manufacturer comprises additional resilience through protective rotor coatings, inconel springs opposed to traditional 316 stainless steel and zinc coated frame.

**2. Decommission and remove turbines.**

The cost to decommission and remove the wind turbines and ancillary equipment would be approximately £5,000.

This option would see the removal of Solaris Centre's iconic turbines and an increase in the centre's energy costs and carbon dioxide emissions through the increase in imported electricity from the grid.

It could also potentially compromise the council's ability to meet the 2030 net zero carbon and 100% renewable energy targets across council's services and risk reputational damage to the council's credibility for its climate emergency intentions.

6.4 Does the information submitted include any exempt information? No

**7.0 List of Appendices:**

7.1 None.

## **8.0 Financial considerations:**

- 8.1 The cost of the Solaris Centre replacement wind turbine project is £22,380, which is to be prudentially borrowed over 15 years, which amounts to £30,097 including £7,717 interest.

Based on pre covid levels and current energy prices the annual utility costs of The Solaris Centre amount to approximately £23,000, with electricity accounting for half of the annual spend.

Assumptions:

- £22,380 is the total required borrowing
- Blackpool Council's cost of borrowing remains constant at 4.31% throughout the life of the project.
- The expenditure takes place upfront at the start of the year.
- MRP is charged in accordance with option 3 of the 2018 regulations which were adopted by Blackpool Council in February 2021.

Based on current savings projections, operational history and forecast generation, including maintenance, the turbines should generate approximately £120,000 of renewable electricity over their lifetime, an average saving of £5,700 per year. Versus the capital costs and repayment proposal the project will payback in 12 years.

## **9.0 Legal considerations:**

- 9.1 The Climate Change Act 2008, originally required the UK to achieve an 80% reduction in greenhouse gas emission levels by 2050 and the UK government updated the Act in June 2019 by order (2050 Target Amendment) Order 2019 (SI 2019/1056) and revised this target upward, from 80% to 100% and the UK become the first major economy in the world to pass laws to end its contribution to global warming requiring net zero by 2050.

## **10.0 Risk Management considerations:**

- 10.1 Failure to deliver the project would see the Council's renewable energy generation reduced, with an increase in the Solaris Centre's energy costs and carbon dioxide emissions whilst potentially compromising the council's ability to meet the 2030 net zero carbon and 100% renewable energy across council's targets and risk reputational damage to the council's credibility for its' climate emergency intentions.

**11.0 Equalities considerations:**

11.1 None.

**12.0 Sustainability, climate change and environmental considerations:**

12.1 The entire report addresses the Council's ambitions to address climate change and the following targets Make the Council's activities net-zero carbon by 2030 and Achieve 100% clean energy across the Council's full range of functions by 2030.

**13.0 Internal/external consultation undertaken:**

13.1 None.

**14.0 Background papers:**

14.1 None.

**15.0 Key decision information:**

15.1 Is this a key decision? No

15.2 If so, Forward Plan reference number:

15.3 If a key decision, is the decision required in less than five days? No

15.4 If **yes**, please describe the reason for urgency:

**16.0 Call-in information:**

16.1 Are there any grounds for urgency, which would cause this decision to be exempt from the call-in process? No

16.2 If **yes**, please give reason:

**TO BE COMPLETED BY THE HEAD OF DEMOCRATIC GOVERNANCE**

**17.0 Scrutiny Committee Chairman (where appropriate):**

Date informed: N/A

Date approved:

**18.0 Declarations of interest (if applicable):**

18.1

**19.0 Executive decision:**

19.1

**20.0 Date of Decision:**

20.1

**21.0 Reason(s) for decision:**

21.1

**22.0 Date Decision published:**

22.1

**23.0 Executive Members in attendance:**

23.1

**24.0 Call-in:**

24.1

**25.0 Notes:**

25.1