

Operation & Maintenance contracts for large energy infrastructure projects

To: Environment & Green Investment Committee

Meeting Date: 16 March 2023

From: Executive Director, Place and Sustainability

Electoral division(s): All

Key decision: Yes

Forward Plan ref: 2023/045

Outcome: Maximise the performance and income of the large-scale energy projects through effective operation & maintenance agreements.

Recommendation: Committee is asked to:

- a) approve extending the warranty on inverters for the North Angle Solar Farm from five to ten years at a cost of £220,000 as set out in paragraph 2.6;
- b) approve the £140,000 of lifecycle replenishment costs (LIFEX) to purchase spare parts for North Angle Solar Farm and its Private Wire; Babraham Road Smart Energy Grid and St Ives Smart Energy Grid as set out in table 2;
- c) delegate authority to the Executive Director, Place and Sustainability in consultation with the Executive Director of Finance and Resources, and the Chair and Vice-Chair of Environment and Green Investment Committee to authorise the entering into and execution of 4-year Operation and Maintenance contracts with Bouygues Energies and Services for North Angle Solar Farm, its Private Wire; Babraham Road Smart Energy Grid and St Ives Smart Energy Grid; place orders for spare parts to be used during the operational phase for these schemes and secure extended warranties for the inverters at North Angle Solar Farm.

Officer contact:

Name: Claire Julian-Smith
Post: Delivery Manager - Energy
Email: Claire.julian-smith@cambridgeshire.gov.uk
Tel: 01223 715349

Member contacts:

Names: Councillors Lorna Dupré / Nick Gay
Post: Chair/Vice-Chair
Email: lorna.dupre@cambridgeshire.gov.uk / nick.gay@cambridgeshire.gov.uk
Tel: 01223 706398

1. Background

- 1.1 The Council has invested in a pipeline of large-scale renewable energy projects to generate revenue for the Council, deliver against its Net Zero ambitions and to support the development of a more resilient local energy economy.
- 1.2 In 2017, the Council ran a mini competition to appoint an energy services provider for its large energy projects using the Greater London Authority's RE:FIT 3 Framework. Bouygues Energies and Services were awarded the competition.
- 1.3 The RE:FIT 3 Framework is an energy performance contracting service. This means contracts are generally long-term partnering agreements that transfer much of the risk from the Council to the energy services provider to provide long-term budget stability by guaranteeing the energy generation (or savings) on a project. The guarantee under the RE:FIT 3 Framework is fifteen years for energy generation or savings.
- 1.4 North Angle Solar Farm and the smart energy grid project at Babraham Road Park & Ride site are being delivered under the RE:FIT 3 Framework. The energy generating scheme at St Ives Park & Ride site is being delivered under the previous version of the framework (RE:FIT 2). For all three, a performance guarantee applies on the energy generated for these projects and key part of this is ensuring an Operation and Management (O&M) agreement is in place.
- 1.5 The three key projects, namely North Angle Solar Farm, Babraham Road Smart Energy Grid and St Ives Park & Ride Smart Energy Grid are all due to complete construction this year and will enter into their operating phase. They will each require an O&M agreement.
- 1.6 To maintain the assets effectively, it is necessary to have an O&M arrangement in place to keep the assets running smoothly and to optimise their performance i.e., to maximise the volume of electricity being generated. O&M services primarily include:
 - Reactive maintenance – tending to immediate issues, including repairs, replacements and upgrades needed to keep the system operating at an optimal level.
 - Preventative maintenance – undertaking regular, planned maintenance to try to stop problems from occurring, including panel cleaning and annual equipment inspections.
 - Landscaping activities.
 - Ongoing compliance with any regulatory alterations.
 - Mitigate health and safety risks - any risks posed to the health and safety of people, both in and around the scheme.
- 1.7 Under the RE: FIT Frameworks, the Council can access a mechanism to enable Bouygues to provide the O&M service for an initial four years with the potential to extend (in blocks) for up to a total of fifteen years.
- 1.8 The Council's Triangle Solar Farm, operational since 2017, has used this contractual mechanism to provide the O&M for the project using Bouygues Energies and Services Ltd and this has operated successfully.
- 1.9 The outcome of this report is to negotiate and enter into O&M contracts with Bouygues Energies and Services Ltd. For the energy projects stated above due for completion in 2023.

2. Main issues

- 2.1 **Current position.** Investment decisions for the three energy projects were previously approved between December 2020 and March 2022 including approval to enter into works

contracts for the delivery of the projects. These are detailed in paragraph 5.1. Whilst the business cases approved included the O&M costs, approvals at Committee at that time were only for entering into works contracts, hence the need to seek approval now to enter into O&M contracts.

- 2.2 The budget allocations in the business cases for O&M budget are highlighted in table 1 below and cover the anticipated whole project O&M costs for a 30 year project life alongside the initial 4 year O&M contract costs.

Table 1: O&M budgets included within the business cases including forecast inflation

Project	Cost of initial 4-year O&M contract per site, (including inflation adjusted forecast at 2.75% annually)	O&M budget approved at Committee over the 30-year lifetime of the project, (including inflation adjusted forecast at 2.75% annually)
North Angle Solar Farm*	£902,422	£10,226,959
St.Ives Smart Energy Grid	£142,070	£1,546,411
Babraham Rd Smart Energy Grid	£217,459	£2,352,603

* Including Private wire

- 2.3 The business case assesses the Return on Investment (ROI) based on the adjusted costs for inflation. This is currently based on a long-term annual impact of 2.75% over 30 years. As such, there is no significant impact on the business cases from O&M costs over the full 30-year life of the project, as the high inflation seen in the short term should be balanced with periods of low or negative inflation in the future.
- 2.4 **Scope.** The scope of the O&M contracts for each of the projects is now being drafted. (Each project will have a separate O&M contract.) As part of the drafting of the specifications, Bouygues provide confirmation of the spare parts and equipment to be held through the operational lifetime of the assets, so that in the event of a failure, the replacement item is readily available. This precaution is important and is learning from market disruption resulting from Covid-19. The risk of further market disruption from infectious disease caused by the SARS-CoV-2 virus, or other diseases, or global demand remains within the lifetime of these projects.
- 2.5 **Spares.** In terms of impact on cost, from these risk mitigation measures, the original business cases included forecast lifecycle expenditure costs and the intention is to bring forward some of these costs to purchase the spare equipment. The impact of this is marginal on the return on investment for the business cases. Budget estimates for spare equipment for each of the projects are set out in table 2 below:

Table 2: Budget estimates for spare equipment

Project and types of spare items	Budget estimate for spare parts (£k)
North Angle (incl. cabling) Spare solar modules, fuses, electrical components etc.	93
Babraham Rd P&R Solar modules, inverters, lighting, switchgear components	30
St Ives P&R As above with additional battery storage components	17

- 2.6 **Warranties.** The equipment and components are covered by warranties of varying lengths of time, which help to mitigate risk of underperformance. For North Angle Solar Farm, there is an option to purchase an extended warranty that would increase the duration of the warranty from five to ten years, increasing the protection of the asset, should a fault occur with one of the inverters. The inverters are one of the most important pieces of equipment in a solar energy system. As it is the component under the most strain, it is also the most likely to fail. The budget estimate provided for this is £220,000 in total, payable in five annual instalments.
- 2.7 **Performance guarantee.** As previously described, these three large energy projects completing construction this year are designed and built under an energy performance contracting arrangement, whereby Bouygues guarantee the energy generation for 15 years. It is recommended that the mechanism under the RE:FIT Framework is utilised to award the O&M service contracts to Bouygues for the initial 4 years of operation for all three projects. This means that should there be issues with energy generation, the whole system of design, construction and maintenance sits with one contractor to resolve. Having different providers for O&M in the first years introduces the risk that in the event of any under-performance, this may lead to extended discussions on where liability sits. This is particularly important in the first years of operation, where any design faults, if there are any, are most likely to be discovered. It would still be prudent to consider continuing with this arrangement for subsequent O&M contracts beyond this initial 4-year period. However, if the system has been performing well and any issues ironed out during the first four years, then the risk of going to a separate O&M contractor should be lower.
- 2.8 This utilisation of the of the RE:FIT Framework mechanism to appoint Bouygues for the first 4 year O&M term is especially important for the smart energy grid project at Babraham and St,Ives Smart Energy Grids. This is because the smart energy grid links together a range of low carbon technologies and electric vehicle (EV) charging infrastructure and the risks around the interactions of these technologies is not as well documented as for single technology, turnkey solutions, such as solar farms. However, in the lead up to the renewal of these contracts, careful consideration of best value and an evaluation of risk will inform the process by which the contracts are renewed for the subsequent contracting periods.
- 2.9 **Best value.** Testing best value will also be included in the scope of the O&M contracts. Ahead of contract award, the North Angle Solar Farm contract will be reviewed by Local Partnerships under the support agreement in place, to benchmark costs and make recommendations for the contracting. In addition, a further review of value will be included by way of an independent benchmarking exercise in year 2 ahead of any extension to the contract, referenced in paragraph 1.7.

2.10 **Alignment with Triangle solar farm.** The Council has an existing O&M arrangement in place with Bouygues, for the maintenance of Triangle solar farm. The aim is to align the renewal dates for the O+M contracts dates for both solar parks over time. It is anticipated that the scale achieved by combining the volumes of electricity being generated, along with the close proximity of these assets could be attractive to the market and deliver better value.

3. Alignment with corporate priorities

3.1 Environment and Sustainability

Ensuring that the assets are well-maintained during their operational phase will help to maximise the volume of clean electricity generated, thereby supporting the development of a more resilient local energy economy.

3.2 Health and Care

There are no significant implications for this priority.

3.3 Places and Communities

See wording under 3.1 above.

3.4 Children and Young People

There are no significant implications for this priority.

3.5 Transport

There are no significant implications for this priority.

4. Significant Implications

4.1 Resource Implications

The contracts will provide expert technical skills to maintain the assets effectively. The costs incurred will be charged to the respective income-generating project.

4.2 Procurement/Contractual/Council Contract Procedure Rules Implications

As detailed in paragraph 1.4, Bouygues Energies and Services were procured under mini competition under the RE:FIT 2 and RE:FIT 3 Frameworks, respectively. The contracting arrangement includes a mechanism to award O&M service.

4.3 Statutory, Legal and Risk Implications

The operation and maintenance service contracts are considered key to ensuring the ongoing success of the Council's renewable energy project portfolio. Scheduled, routine maintenance can help to avoid disruption to generation and therefore income for the council, as well as extending the life of the plant. In addition to maintenance, an O&M provider will also ensure ongoing compliance with any regulatory alterations.

4.4 Equality and Diversity Implications

There are no significant implications.

4.5 Engagement and Communications Implications

There are no significant implications.

4.6 Localism and Local Member Involvement

There are no significant implications.

4.7 Public Health Implications

The large energy projects must be safely managed and maintained to prevent any health and safety impacts on communities and businesses. This is especially relevant for the smart energy grids which are based at the Council's park and ride sites.

4.8 Environment and Climate Change Implications on Priority Areas

4.8.1 Implication 1: Energy efficient, low carbon buildings.

Positive/neutral/negative Status: Neutral

Explanation: No implications from procuring these services are expected.

4.8.2 Implication 2: Low carbon transport.

Positive/neutral/negative Status: Positive

Explanation: The Smart Energy Grids include EV charging and the O&M contracts will ensure greater reliability for accessing working charge points.

4.8.3 Implication 3: Green spaces, peatland, afforestation, habitats and land management.

Positive/neutral/negative Status: Positive

Explanation: Operation and Maintenance contracts often include landscaping activities. Bouygues, as the service provider, will be contracted to provide grounds maintenance to promote healthy growth and maintain the ecological and biodiversity benefits of the projects. This is especially true for North Angle Solar Farm and private wire.

4.8.4 Implication 4: Waste Management and Tackling Plastic Pollution.

Positive/neutral/negative Status: Negative

Explanation: No implications from procuring these services are expected. Over the lifetime of these projects, it is likely that equipment will need replacing. Therefore, failed parts will need to be removed from site and disposed of correctly. Plastic may be used as packaging. This too will need to be removed from site and recycled where possible.

4.8.5 Implication 5: Water use, availability and management:

Positive/neutral/negative Status: Neutral

Explanation: No implications from procuring these services are expected.

4.8.6 Implication 6: Air Pollution.

Positive/neutral/negative Status: Neutral.

Explanation: No implications from procuring these services are expected.

4.8.7 Implication 7: Resilience of our services and infrastructure, and supporting vulnerable people to cope with climate change.

Positive/neutral/negative Status: Positive

Explanation: Ongoing O&M is highly recommended in order to achieve and maintain the best possible performance and return on investment over the entire useful life of the assets. Unreported system outages can negatively impact both revenue and productivity. Procuring these services will help to maximise the revenues that can be used to fund the Council's front-line services.

Have the resource implications been cleared by Finance? Yes

Name of Financial Officer: Sarah Heywood

Have the procurement/contractual/ Council Contract Procedure Rules implications been cleared by the Head of Procurement? Yes

Name of Officer: Clare Ellis

Has the impact on statutory, legal and risk implications been cleared by the Council's Monitoring Officer or Pathfinder Legal? Yes

Name of Legal Officer: Linda Walker

Have the equality and diversity implications been cleared by your EqIA Super User?

Yes Name of Officer: Sheryl French

Have any engagement and communication implications been cleared by Communications?

Yes Name of Officer: Kathryn Rogerson

Have any localism and Local Member involvement issues been cleared by your Service Contact? Yes Name of Officer: Sheryl French

Have any Public Health implications been cleared by Public Health?

Yes Name of Officer: Iain Green

If a Key decision, have any Environment and Climate Change implications been cleared by the Climate Change Officer? Yes Name of Officer: Emily Bolton

5. Source documents

5.1 Source documents

- [North Angle Solar Farm Investment Decision – 18th December 2020 \(Commercial & Investment Committee\)](#)
- [Private Wire Investment Decision - 03 March 2022 \(Environment & Green Investment Committee\)](#)
- [Babraham Road Park & Ride Smart Energy Grid Investment Decision - 16 December 2021– \(Environment & Sustainability Committee\)](#)
- [St Ives Park & Ride Investment Smart Energy Grid Decision - 01 July 2021 \(Environment & Green Investment Committee\)](#)