WEST OXFORDSHIRE DISTRICT COUNCIL	WEST OXFORDSHIRE DISTRICT COUNCIL
Decision Maker	CHIEF EXECUTIVE (DELEGATED DECISION)
Subject	DECARBONISATION OF CARTERTON LEISURE CENTRE
Wards affected	Carterton wards
Accountable member	Cllr Andrew Prosser, Cabinet Member for Climate Change Email: andrew.prosser <u>@westoxon.gov.uk</u>
Accountable officer	Claire Locke, Assistant Director - Property and Regeneration Tel: 01285 623427 Email: claire.locke <u>@publicagroup.uk</u>
Summary/Purpose	To consider whether the existing gas boilers at Carterton Leisure centre should be replaced with more sustainable Heat Pump systems and based on that decision whether an offer of Public Sector Decarbonisation Funding should be accepted.
Annexes	Annex A - Report from Hydrock January 2023 (version 27th January 2023) Annex B - Q & A clarifying data in Hydrock report (12th - 23rd January). Annex C - Further Q & A clarifying Hydrock report (31st January) EXEMPT Annex D - Contract implications (commercially sensitive) Annex E - Report from Hydrock February 2023 (Solar PV & Battery Storage)
Recommendation(s)	 That a decision is made to either, (a) Accept the Salix grant offer and proceed with proposals to decarbonise Carterton Leisure centre with a Heat Pump system and Solar PV. Mitigating some identified project risks by: (i) introducing project gateways, where a decision will be made to proceed to capital spend at the following stages:- acceptable contract variation agreed with GLL and,

	• completion of the Investment Grade Proposal, providing greater confidence in the modelled data around system performance, energy usage and potential savings from PV and battery storage;,
	(ii) maximising opportunities to reduce operating costs through energy purchasing agreements, Building Energy Management Systems and the installation of carport PV and battery storage where these options present a sound business case for investment.
	OR,
	 (b) Decline the Salix grant offer, on the basis of the cost risk associated with the decision, but commit funding estimated at £118,000 to complete the Investment Grade Proposal and to negotiate with GLL on a contract variation, so that the Council could consider any future funding rounds of Public Sector Decarbonisation Funding (not guaranteed).
	OR,
	(c) Decline the Salix grant offer and take no further action at this time but review cost projections and options before a decision is made on gas replacement (by 2033).
Corporate priorities	Responding to the Climate Crisis
Key Decision	YES
Exempt	NO (Annex D - Exempt)

Consultees:

Cllr Andrew Prosser Cabinet Member for Climate Change

Option a. This is the best route forward to achieve the Council's targets in terms of decarbonisation and managing the cost, technical and contract risks for the project. The cost modelling and project programme needs to be carefully managed and updated as the detailed programme planning and analysis is completed.

Cllr Dan Levy - Cabinet Member for Finance

Can I confirm that we have discussed this decision at length. There are risks involved in taking the decision to accept the grant, and these need to be mitigated, for example by ensuring that the project management of the decarbonisation project is tightly designed. The situation is complicated by the need to consult with GLL as operator of Carterton Leisure Centre. There is risk that running costs will increase as we move away from gas heating, and we must take steps to mitigate this risk.

WODC is committed to decarbonising its activities.

I am comfortable that WODC should go ahead with Option A.

Decision by Chief Executive

I have decided to accept the Salix grant offer and proceed with proposals to decarbonise Carterton Leisure centre with a Heat Pump system and Solar PV. Mitigating some identified project risks by:

(i) introducing project gateways, where a decision will be made to proceed to capital spend at the following stages:-

acceptable contract variation agreed with GLL and,

completion of the Investment Grade Proposal, providing greater confidence in the modelled data around system performance, energy usage and potential savings from PV and battery storage;,

(ii) maximising opportunities to reduce operating costs through energy purchasing agreements, Building Energy Management Systems and the installation of carport PV and battery storage where these options present a sound business case for investment.

1. BACKGROUND

- **1.1.** PSDS is the public sector decarbonisation scheme that provides grants to help fund the conversion from gas powered systems to more sustainable options like solar power and air source heat pumps.
- **1.2.** Having been forced to withdraw from PSDS3a due to time delays associated with SSE installing a new sub-station, the Council had the opportunity to reapply under the next funding round, PSDS3b and submitted an application in October 2022.
- **1.3.** The previous funding round highlighted that an Investment Grade Proposal (IGP), would be required to fully understand the requirements of decarbonising the leisure centre. If the Council decided to proceed with or without grant funding, this advanced design proposal would still be required. A design and build contract was procured and the Council has been working with Kier and their sub-contractor Hydrock in preparing detailed modelling of the available options for replacement heating systems. The options considered were for space heating, swimming

pool heating and hot water and are different combinations of gas heating, high temperature heat pumps and low temperature heat pumps. This is set out in Annex A on Page 2 of the report.

- 1.4. Only four of the modelled options are eligible for PSDS 3b funding; they are scenarios 1 & 4, which have no reliance on gas and options 6 & 7 which use direct point of use electric systems. Options 6 & 7 present some risk that they will not be accepted by Salix as their carbon performance is relatively poor.
- **1.5.** The modelling looks at whole life costs. This is important as the utility costs over the life of the systems far outweigh the initial capital investment. In order to compare options the capital costs (Capex), operating costs (Opex) and replacement costs (Repex) all need to be considered.
- **1.6.** Cabinet delegated the decision making on the option to be pursued and whether PSDS funding should be accepted on 11th January 2023.
- 1.7. The decision must be made with delivering the Councils commitment to carbon reduction balanced against affordability and contract risk. A range of options have been presented here but the focus is on a comparison between a gas only replacement system (BAU) in 2033 or option 4, as the other options are deemed either unaffordable or are not as favourable as option 4. However, it should be noted that gas replacement is the least positive carbon option, with only minimal reduction in carbon from the installation of a more efficient heating system.

FINANCIAL IMPLICATIONS

- 2.1 The modelling looks at whole life costs. This is important as the utility costs over the life of the systems far outweigh the initial capital investment. In order to compare options the capital costs, operating costs and replacement costs all need to be considered.
- 2.2 The PSDS3b grant bid includes the financial assumptions shown in Table 1 overleaf and therefore any grant eligible option (options 1, 4, 6 & 7) should be eligible for up to £1,606,968 of capital funding. Operating and replacement costs are not covered by the grant. There is a requirement for the Local Authority to fund some of the costs, this equates to 7% of the overall Capex.

Cost element	Cost
Design and Engineering costs (includes IGP)	£79,100
Main equipment capital costs	£965,100
Installation and Commissioning	£528,600

Table 1 - financial assumptions in grant submission (October 2022)

Project Delivery costs inc external project Mgt	£39,600
Contingency sum	£213,700
Total project costs	£1,826,100
Required contribution from WODC	£219,132
Grant sum	£1,606,968

2.3 The Option Summary table 2 on the next page provides all costs. Note that option descriptions are summarised and relate to different configurations of low and high temperature systems for the different space, swimming and hot water heating. Therefore, the report should be referred to for the full descriptions.

2.4 The £1,606,968 grant sum that was bid for was based on original calculations before the Hydrock optioneering model was produced. That model shows updated costs specific to individual models and these are higher than the original estimates. This will be due primarily to increased inflation, material and general construction costs over the last 6 months.

2.5 The figures are all based on totals over 30 years. No contingency sums have been included against these figures however a contingency sum of around 15% should be set aside should costs exceed the estimates in the table.

2.6 There is no cost of borrowing currently included against Capex but it is likely to be around £790,000 for BAU and Option 4. Borrowing costs are generally lower in options that have grant support due to the lower reliance upon council funds. The BAU borrowing cost is lower as the borrowing would be delayed until the gas replacement date.

2.7 Each option is likely to require some degree of centre closure whilst new equipment is installed, temporarily leaving buildings without heating or appropriate ventilation. There will be a cost associated with this as the Council will be required to pay GLL compensation for lost income during that closure period. The period of closure will be dictated by the heating solution installed and compensation payments are normally based on income during comparable periods i.e. an average of the three months prior to closure. These costs are not included here but should be noted as an additional cost implication.

Operating Costs (Opex)

2.8 Utility costs are the main variable and are very challenging to model accurately. The report in Annex A provides operational expenditure (Opex) on page 11 which is summarised in table 4.

2.9 There are three utility cost projections. The most recent datasets from the Department for Business, Energy and Industrial Strategy (BEIS) include the lowest utility costs. However, they are known to be out of date due to the rapid escalation of utility prices in the last 12 months, fueled by the Ukrainian conflict.

2.10 Hydrock have therefore put together their own figures based on in-house expert market knowledge and using Cornwall Insight and Financial Times forecasts. They have therefore provided an Optimistic view and a Pessimistic view as the longer term energy markets are very difficult to predict due to their volatility. By their nature, these figures are subjective and cannot be based on any hard data. Forecasted average wholesale prices from Cornwall Insights align with these utility cost projections. The Optimistic case has a lower gas price and lower electricity prices with a short-term spike to reflect the current market. The Pessimistic view has a higher gas price and higher electricity prices in the long term. So while the comparison has been done on the optimistic case and shows it to be more costly, this is a likely best case scenario with the potential for the additional costs to be significantly worse.

2.11 The figures used in the table overleaf are the Optimistic view provided by Hydrock. The reason for this is the BEIS figures are known to be low but using the Pessimistic Hydrock figures will only widen the gap between options. Regardless of the forecasting scenario, the rank 'cost' order of the options remains the same.

2.12 The operational costs in the report are based on 2019 consumption data as it is the latest full year available prior to the COVID-19 pandemic. While the 2021/22 financial year demonstrated a return to higher leisure centre usage, consumption figures remain below pre-COVID baselines. Nonetheless, applying the same energy price forecasting figures to the 2021/22 consumption data provided by GLL (the leisure provider for Carterton Leisure Centre) shows a reduced gap between the BAU scenario and Option 4 costs but does not fundamentally affect the comparison.

2.13 If over time the energy market stabilises and prices drop below those projected in the Optimistic model, replacement of a gas system with heat pumps will become more viable. If a decision is made that Heat Pumps will not be installed at this time, based on current forecasts this should be reviewed periodically, to see if the financial picture has improved and a heat pump system could be introduced.

Options (Options 1 - 8 include	Capex – equipment	Capex – installation and	Additional project capex -	Total Capex	Combined sums fund Capex		Opex (Based on Optimistic	Repex	Total estimates net cost to	Annual cost
solar PV)		commissio ning	IGP, project Mgt etc.		PSDS eligibility (up to £1,606,968 for capital costs)	WODC contributio n	model)		WODC over 30 years	
BAU(a) BASELIN ECurrent system only	None included	Х	None included		Х	Х	£5,946,200	None Included	£5,946,200	£198,20 7
BAU(b) Gas replaceme nt + Solar PV	£1,548,453	£528,600 + £28,967 solar	Not full IGP and less project mgt - Estimate £70,000	£2,176,020	Х	£2,176,020	£4,724,057	£218,485	£7,118,562	£237,28 5
1 Heat pumps	£1,548,453	<£1,057,20 0	£118,700	£2,724,353	£1,606,968	£1,117,385	£6,483,847	£1,508,938	£9,110,170	£303,67 2
2 Heat pumps + gas	£1,548,453	<£1,057,20 0	£118,700	£2,724,353	x	£2,724,353	£6,455,256	£1,198,302	£10,377,911	£345,93 0
3 Heat pumps +	£1,548,453	<£1,057,20 0	£118,700	£2,724,353	х	£2,724.353	£6,594,449	£627,426	£9,946,228	£331,54 1

 Table 2 - Financial summary of options (uses Optimistic Opex)

gas										
4 Heat pumps	£1,522,026	<£1,057,20 0	£118,700	£2,697,926	£1,606,968	£1,090,958	£6,344,885	£1,268,180	£8,704,023	£290,13 4
5 Heat pumps + gas	£1,340,527	<£1,057,20 0	£118,700	£2,516,427	Х	£2,516,427	£6,381,752	£809,046	£9,707,225	£323,57 4
6 Heat pumps + point of use electric	£1,222,622	<£1,057,20 0	£118,700	£2,398,522	£1,606,968	£791,554	£7,689,995	£1,224,808	£9,706,357	£323,54 5
7 Heat pumps + point of use electric	£860,553	<£1,057,20 0	£118,700	£2,036,453	£1,606,968	£429,485	£7,563,216	£835,552	£8,828,253	£294,27 5

Table 3 - Impact on net cost to WODC is Pessimistic Opex is used

Options (Options 1 - 8 include solar PV)	Opex (Based on Pessimistic model)	Total net cost to WODC over 30 years (Capex, Opex & Repex)
BAU(b) Gas replacement + Solar PV	£8,221,871	£10,616,376
1 Heat pumps	£13,262,204	£15,888,527
2 Heat pumps + gas	£12,975,908	£16,898,563
3 Heat pumps + gas	£12,807,761	£16,159,540
4 Heat pumps	£12,976,003	£15,335,141
5 Heat pumps + gas	£12,824,522	£16,149,995
6 Heat pumps + point of use electric	£15,746,338	£17,762,700
7 Heat pumps + point of use electric	£15,485,230	£16,750,267

2.13 In Table 2 the BAU (a) figure effectively shows what we pay now but modelled over 30 years. This is not a separate option as the current system would not last another 30 years so would need replacement and would clearly have repair, maintenance and replacement costs. However, this shows the baseline energy usage projection.

2.14 Using the Optimistic Opex figures, Table 2 shows that a gas replacement system is cheaper by just over £1.5M over 30 years than the next cheapest option, which is option 4 (heat pumps). Pursuing option 4 would be more expensive by an average £52,849 a year over the 30 year life of the systems. However, with the pessimistic Opex model showing a cost difference of £4,718,765, between these options, this means the difference in annual budget required between these two options would be £157,292.

MAXIMISING OPEX SAVINGS

2.15 To assess any mitigation that could be used to reduce ongoing OPEX, Hydrock were commissioned to undertake a high level assessment of the potential reduction in electricity demand from the grid if solar PV on-site was maximised and battery storage was used. This report is attached as Annex E. This was not included in the original PSDS 3b grant submission so would not be eligible for grant funding.

2.16 The report shows that £291,826 in energy savings could be achieved through a combination of roof mounted solar PV, Carport PV and Battery storage. Of this £91,000 is already included in the OPEX figures in Table 2 of this decision report. The Carport PV and Battery storage could contribute up to £200,000/year of additional savings. However this is based on annual not half hourly data, so does not account for Winter periods when a lower level of energy is generated and Summer periods when some energy is 'spilled'. These figures should be viewed as high level and be considered an indicator only.

2.17 The fabric of the leisure centre is considered to be good, however there may be opportunities to better manage energy usage by maximising performance of systems and ensuring heating periods and temperatures are designed around building usage, so energy isnt wasted. A business case for a Building Energy Management System has not been included in modelling to-date but will be considered as part of the Investment Grade Proposal.

2.18 There may be opportunities to consider alternative ways of purchasing energy to acquire cheaper, greener and/or fixed price energy to reduce overall energy costs. Options such as Power Purchasing Agreements to purchase off-site renewable energy will be considered.

PSDS FUNDING

2.17 If a gas replacement system is pursued it is not eligible for PSDS funding. If the decision is made to pursue Option 4 and install heat pumps, PSDS3b funding should be accepted as it will fund a significant proportion of the Capex.

2.18 The proposed Heat Pump solution (low & high temperature ASHPs) under Option 4 is a variation to the original (low temperature) Heat Pump solution that the grant application was based on. The Council will need to submit a change request to Salix once the grant offer has been accepted. Salix have 10 days within which to respond. It is unlikely this will cause any issues as proposals and benefits are broadly similar.

MEDIUM TERM FINANCIAL STRATEGY (MTFS) IMPLICATIONS

2.19 The greatest risk to the MTFS is from the contract risks highlighted in Annex D. The current MTFS identifies annual management fee income. However, the risk is greater than this and could be the loss of the full management fee and all other operating losses currently being incurred by the contractor if this implementation gave an avenue for the contractor to exit the contract early.

2.20 In addition, the implications of selecting option 4 with a projected increase in costs over a gas replacement system of between $\pounds 52,849 - \pounds 157,292$ annually would place a further burden on the MTFS unless offset by other mechanisms.

2.21 If the Council does not accept the grant funding offer and then decides to proceed with decarbonisation at a later date, grant funding may not be available and the Council would have to bear the full CAPEX costs.

LEGAL IMPLICATIONS

3.1 The Council is not legally required to decarbonise its buildings but must ensure suitable heating systems are in place for tenants (GLL) and leisure centre users.

3.2 Signing the offer letter would not legally commit the Council to deliver the scheme. However, to withdraw after accepting the offer would be reputationally damaging and could affect the Councils future chances of securing PSDS funding.

3.2 Save from the above, there are no other legal implications arising directly from this report.

RISK ASSESSMENT

4.1 The biggest financial risk is the volatility of the utility markets. It is extremely difficult to accurately predict the cost of gas and electricity into the future. Whilst expert consultants have been used and the Council has also cross checked data with other parties to gain further assurance, there is no solid evidence on which costs can be modelled. An optimistic and pessimistic view has therefore been included to provide a range of costs. However, there is also the chance that the costs could fall outside of this range (positively or negatively) and that gas prices rise disproportionately so higher BAU costs may be incurred. The pessimistic view provides the best estimate of cost risk for utilities.

4.2 At present the leisure contract includes terms that require the leisure contract operator (GLL) to cover the operating costs of the leisure centres, including utility bills. The utility risk is transferred to the contractor. The operator then pays the Council a management fee, which enables the council to achieve a return against these assets. If the heating system at Carterton Leisure Centre is changed, the utility cost risk changes and therefore GLL are likely to seek a change to the current contract terms. This could substantially increase the cost risk for the Council. The Council could not reasonably require this change in heating system without GLLs agreement and any attempt to force them to bear the cost risk is likely to result in dispute and/or contract default, which could affect the operation and opening of the leisure centre. The short timescale available to implement this project also means that delays caused by contract renegotiation could affect the timing of costs either delaying the completion of the project beyond the two years available or at the very least shifting the profile of the spend such that the Council becomes unable to reclaim significant amounts of spend currently profiled in year 1.

4.3 The PSDS grant requires that the Council identifies how much of the funding will be spent in each of the two grant years. Based on Option 1, the Council concluded, in consultation with its consultants Kier, that 38% of the funding would be spent in 2023/24 and the remaining 62% would be spent in 2024/25. Unfortunately there is no flexibility in this, so if the Council accepts the grant offer and then spends less than 38% in year 1, it cannot carry the funding forward and this proportion of unspent funding would be lost. This would then mean the Council would need to cover the gap in funding for year 2. Expenditure would also have to be carefully managed to avoid spending more than 38% in Year 1. Since this matter was agreed, a reassessment of the modelling has indicated that Option 4 is cheaper than Option 1. This is unlikely to affect the financial profile of spend but there is some risk that it does.

4.4 Officers have been in dialogue with consultants Hydrock to fully understand the report and the outcomes that have been modelled. It was surprising that the heat pump options resulted in operational cost increases, as it was initially thought these greener solutions would be financially beneficial but the switch from relatively cheap gas to expensive electricity means the net cost is greater than a gas system. Any further modelling to challenge assumptions or further test utility cost modelling could not be delivered within the timeframe for a decision on the PSDS grant offer. The grant offer letter has now been received and the Council have until 15th February to make a decision. Further modelling could not be completed in this timeframe. The Council would then have to accept the grant offer, to keep a PSDS grant open to them, despite the current projections showing that option 4 is not affordable. This could be reputationally damaging to the Council.

4.5 A gas only system will be at odds with the Council's Climate Change Strategy 2021-25 which makes multiple references to a move away from fossil fuels, carbon reduction and leading by example in this change. The Carbon Action Plan also describes a "transition away from fossil fuels including gas..." as one of the Guiding Principles for delivery of the Council's objectives and identifies this as "an essential step". Failing to decarbonise buildings and selecting a gas based option could be reputationally damaging to the Council. However, these risks need to be weighed against affordability.

4.6 There is a risk that there are no more PSDS funding rounds or other sources of funding made available to the Council to support decarbonisation of public sector buildings. may not become available to support future decarbonisation. Carbon offsets may be required at a cost to

the Council. Gas replacement would need to be taken by 2035 before boilers are banned. Gas replacement parts may be difficult to source.

- 4.7 The uncertainty regarding data obtained presents a risk (refer to Annexes B & C):
 - The Council is not completely confident in the modelling obtained but has tested and sought assurance on the data, as much as is possible within the timeframe available. The long term uncertainty on utility costs and the cost modelling around this, means projections are very broad estimates and could change significantly.
 - The Consultants have not included an assessment of the swing in utility costs if gas taxation is induced, which would push gas costs up. They have stated there is too much uncertainty on this to include it. However, should this occur it would significantly change the OPEX modelling for each option, rendering a gas system much more expensive.
 - It is likely the building could be run more efficiently. Whilst overall the fabric of the building is good, building energy management systems could drive down utility usage. However, this has not been assessed at this stage.
 - Half hourly data has not been used to assess seasonal and daily fluctuations in PV generation against energy usage. This granularity would show when there would be a higher reliance on the grid and when some PV generated energy would be 'spilled' during periods of peak generation (Summer).

4.8 If Recommendation (a) or (b) are pursued the Council will be committing to the costs associated with completing the Investment Grade Proposal, estimated at £118,000. Whilst this may be eligible for funding even if the Council halts the project it should be considered a cost that is 'at risk'.

4.9 As highlighted in 2.18, a change request is required to enable the Council to proceed, There is a risk this is refused but it is considered highly unlikely.

EQUALITIES IMPACT

5.1 None.

CLIMATE AND ECOLOGICAL EMERGENCIES IMPLICATIONS

6.1 Page 20 of the report in Annex A sets out the carbon impact of each option. Table 6 shows the total generated carbon and makes it clear that replacement with a gas only system is the worst performing, generating 11,671,000 Kg of carbon over 30 years. Whereas, Option 4 (next cheapest) is the best performing and results in carbon being reduced to 4,745,000 Kg over 30 years.

6.2 The Council has made a climate and ecological emergency declaration, and pledged to become a carbon-neutral Council by 2030. In addition, the newly approved Council Plan identifies responding to the climate and ecological emergency as a key priority, and a focus for action is to drive down carbon emissions from Council operations.

6.3 Not taking up PSDS3b funding will reduce the rate of carbon reduction. With leisure centres and waste services being the two major contributors to the Council's own carbon emissions, failure to decarbonise these buildings and services will have a major impact on the Council's ability to meet its net zero targets. Leisure centres and facilities account for 38% of the Council's carbon emissions, across all scopes, and the operation of Carterton leisure centre makes a significant contribution to these emissions. In 2021/22, the Council's CO2e emissions totalled 3,072,154 kg. Replacement with a gas only system equates to 391,389 kg of carbon per annum, which is approximately 13% of the Council's total annual carbon emissions. Option 4 equates to 114,843 kg per annum, which is approximately 9.3% of the Council's total annual carbon emissions.

6.4 If the decision is made to install a gas only system when it is replaced there would still be scope to introduce an ASHP at a later date and reduce the reliance on gas.

6.5 Regardless of the heating option selected, the intention is to maximise the solar PV array on the buildings to reduce grid electricity usage. The Council has a separate project currently underway which is due to go out to tender in February to select a contractor to install PV on both Council occupied buildings, those leased under contract (Leisure centres) and leased commercially (offices, warehouse etc). The Carterton Leisure Centre already has some solar PV but the intention would be to include it in this procurement, to install additional PV, based on a detailed business case which will be brought before Cabinet and Council.

6.6 Carbon offsetting is a greenhouse gas reduction or removal to compensate for CO2 emissions emitted elsewhere. The cost of carbon offsetting has not been included in the modelling until 2050, as offsetting is not currently a legal requirement and would add considerable cost to options that are not net zero carbon. However, there is a risk this could change and a requirement for off-setting is imposed.

ALTERNATIVE OPTIONS

7.1 The options are set out above and in Annex A.

BACKGROUND PAPERS

None

(END)