

Energy costs and purchasing strategy

Date: 16th March 2022

Report of: Director of Resources

Report to: Executive Board

Will the decision be open for call in? Yes No

Does the report contain confidential or exempt information? Yes No

What is this report about?

Including how it contributes to the city's and council's ambitions

- Energy usage accounts for around 83% of carbon emissions from the Council's activities, with gas and electricity costing over £23.5m per annum based on the budget position currently forecast for 2021/22.
- Due to a range of global political and economic factors, energy prices over the last year have increased massively to unprecedented levels, resulting in major anticipated budget pressures, in particular for future years. Since Summer 2021, short-term market prices for both gas and electricity commodities have consistently been four to five times higher than the average prices for any of the last five years alone.
- Most recently, there was a further increase in spot market prices of around 50% on 24th February when Russia started its invasion of Ukraine, and a similar further increase was subsequently observed on 2nd March. Given Europe's dependence on Russia for its gas supplies these price impacts are likely to remain an issue for as long as the associated political instability and economic sanctions remain.
- Market prices are so volatile at present that the cost figures included in this report are unlikely to reflect the up-to-date position at the time the report is considered by Executive Board. It is therefore intended that additional information on prices will be provided late to Members to ensure that the most current information possible is available.
- The Council has an approved strategy for forward purchasing a proportion of its gas and electricity requirement, and this has served to hedge the Council very effectively against these market price increases, particularly over the last year and looking ahead into next year. However, beyond this time the Council is increasingly exposed to the existing very high market prices.
- This report is intended to set out to Executive Board the current and future financial implications for the Council, to illustrate the potential future risks of different scenarios, and to seek approval for amendments to the Council's existing energy purchasing strategy in order to manage these risks most effectively.

- On 9th February 2022, Executive Board approved a new Energy Strategy and Action Plan (ESAP) for the Council, which was presented as an appendix to the annual Climate Emergency update. This sets out the Council's approach and a range of key actions to reduce energy consumption and its cost and environmental impact.
- The ESAP includes commitments to reduce the energy the Council uses by investing further in technologies such as solar, LED lighting and alternative heating sources, to build on the success of last year when £25 million of funding was secured to retrofit 40 buildings with decarbonised heating and solar generation across the corporate estate, and to complete the roll-out of the LED street lighting programme. The continued expansion of the Leeds PIPES district heating network supplied by the Recycling and Energy Recovery Facility is also planned, with the major civic buildings in the city centre now in the process of connecting.
- The ESAP also addresses the ongoing work to review and optimise the corporate estate in response to new ways of working and changes to models of service delivery, as well as raising awareness amongst building managers, staff and service users of the impacts of energy usage, and improving the use of data to understand where further energy savings can be achieved through better energy management.
- In addition to this the Council has set out its commitment to ensuring new build and retrofit schemes consider net zero ambitions, with work to be undertaken to develop high-level design principles to guide a review of the Council's approach to new build.
- At its February meeting, Executive Board also noted the intention to bring a review of the Council's energy costs and purchasing strategy to March Executive Board, and this report sits within the overall context of the ESAP.
- In terms of Best City Priorities, these proposals and the wider ESAP will contribute to promoting a more competitive, less wasteful, more resource efficient, low carbon economy, and building longer-term economic resilience. This will also contribute to the Best Council Ambition to remain an efficient organisation which makes best use of its resources.
- The Chief Officer, Sustainable Energy & Air Quality, will be responsible for implementing this strategy.

Recommendations

Executive Board is requested to:

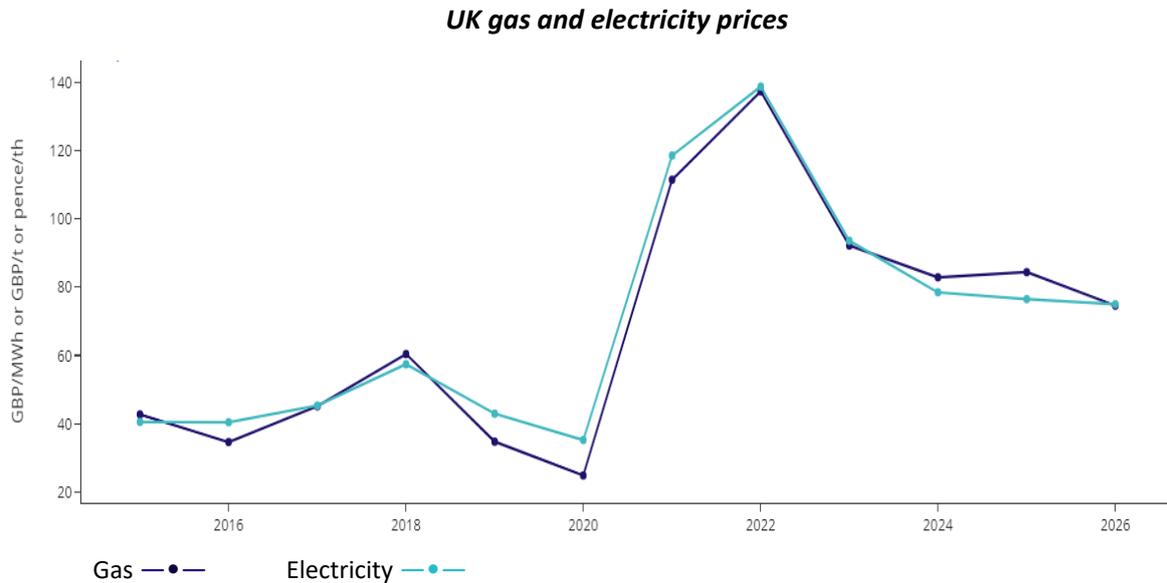
- a) Note the contents of this report and the budget pressures and risks resulting from the recent significant increases in global energy prices;
- b) Approve the proposals for a rolling four year forward purchasing strategy for gas and electricity, guided by external market advice, based on the following approach:
 - 85% of the Council's requirements to be purchased in advance;
 - up to 65% of the Council's requirements to be secured through longer-term trades (i.e. between 24 to 48 months in advance of when the energy is required);
 - observing the principles set out at paragraph 31 in the main body of this report.

Why is the proposal being put forward?

Background and context

- 1 As noted above, Executive Board approved a new Energy Strategy and Action Plan (ESAP) for the Council on 9th February 2022. The overall aim of the ESAP is for the Council's energy consumption to be 100% from zero carbon sources by 2030 in line with the declared climate emergency ambition.
- 2 The ESAP sets out a proposed pathway for the Council to minimise the environmental and financial costs of its energy usage, accepting that it will be necessary to review and update the strategy as national policy evolves. The key outcomes of the energy strategy will be to deliver a range of social, environmental and economic benefits as follows:
 - Reduce greenhouse gas emissions;
 - Contribute towards air quality improvements;
 - Ensure better controlled and managed buildings;
 - Achieve better energy cost certainty and stability;
 - Increase investment in local low carbon energy generation;
 - Increase local employment and skills development via the green economy.
- 3 Based on 2021/22 forecasts, the Council consumes around 153,000 MWh of gas and 108,000 MWh of electricity across its corporate estate and the schools whose energy supply it manages on their behalf at a cost of around £23.5m. It should be noted that a substantial proportion of energy costs are made up of grid costs, levies and other industry charges, with the commodity itself representing around 63% of the total costs for gas and around 47% for electricity. Although these non-commodity costs should be expected to rise at least in line with inflation, they are more predictable, and it is the commodity costs that the following sections address.
- 4 The global energy price market can always be volatile, but the last year has seen unprecedented levels of commodity price increases. This is due to the convergence of a range of global factors, including geo-political issues affecting gas supplies to Europe, major infrastructure maintenance outages, low UK gas storage levels and increasing costs associated with fossil-fuel based energy generation and its carbon impacts.
- 5 Figure 1 below illustrates the evolution of UK gas and electricity spot market prices over recent years and indicative prices looking ahead.

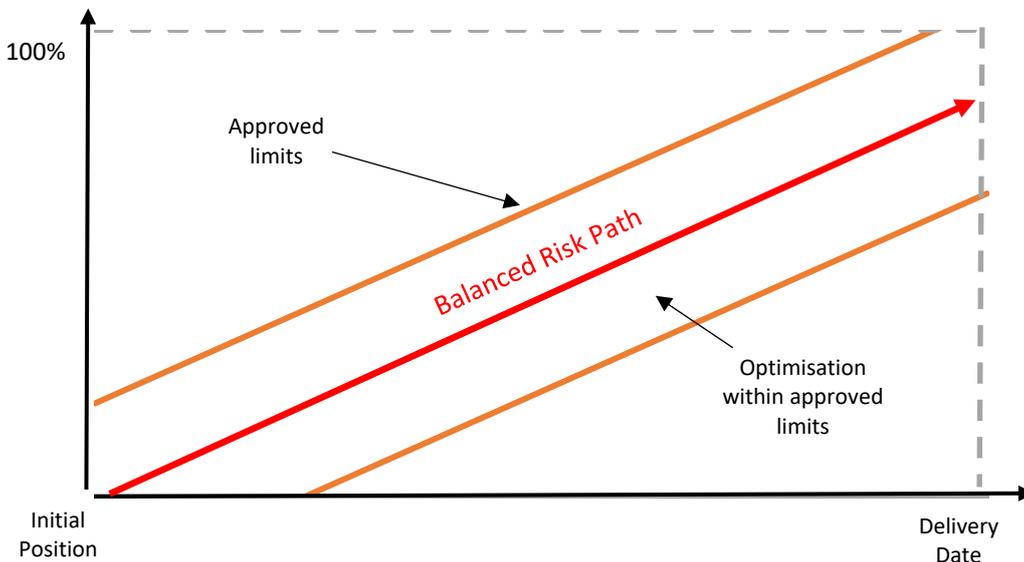
Figure 1



Energy purchasing

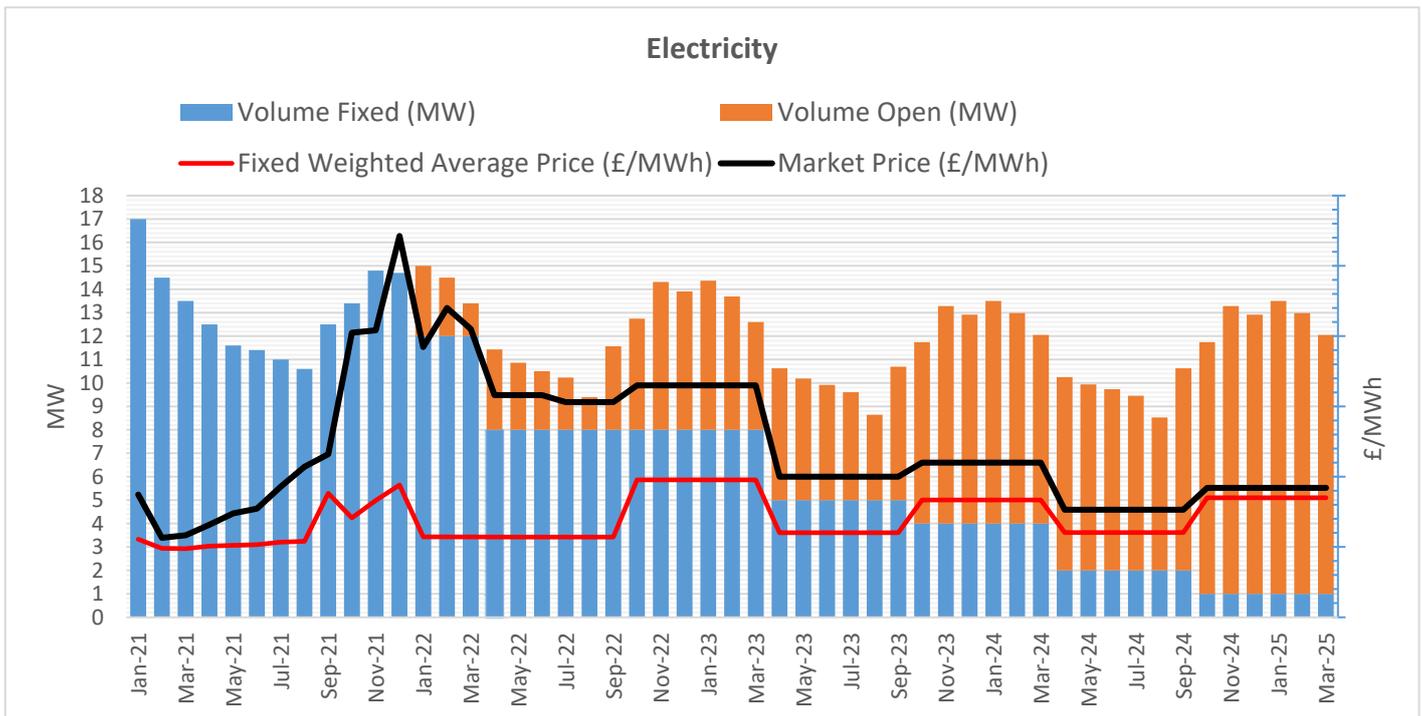
- 6 The Council purchases its energy via a supplier through its gas and electricity supply contracts. The Council's current purchasing strategy enables purchases of gas and electricity to be made for future periods, following a trajectory with a target for 80% to be secured in advance of the delivery period, and starting to purchase 30 months in advance. Any unsecured volume is then purchased at the 'day ahead' (or spot) price. Under its supply contracts, the Council has procured access to market portals to be able to track available prices, and access to regular expert market advice from its supplier's trading section on global market developments and to inform the timing of purchases.
- 7 This approach enables the Council to have budget certainty for an increasing proportion of its energy for future budget years rather than being exposed to the volatility of shorter term market prices, also allowing purchases to be made gradually over a longer period and at more favourable points in time in respect of market conditions rather than, for example, contract prices being set at a single, arbitrary point in time each year.
- 8 This 'balanced risk path' (illustrated in Figure 2 below) includes upper and lower tolerances either side of the pathway to allow a degree of flexibility, but has been established to ensure that neither an insufficient nor excessive proportion is purchased.

Figure 2



- 9 The value of this approach has been borne out particularly over the last year with the extraordinary level of market price increases observed, with the Council having already hedged the majority of energy for this last year and into next year. Nevertheless, the market increases have still produced substantial budget pressures, and beyond this time our level of forward purchases becomes progressively less, and the Council's exposure to high energy prices increases.
- 10 The current position in relation to electricity purchasing is shown in Figure 3 below (although there is a very similar picture for gas given how closely linked the two commodities are in terms of market price trends). The bars in the chart show the Council's overall forecast volume requirements, with the blue portion representing the proportion for which price has been fixed, and the orange portion the proportion for which price has not yet been secured and is therefore still subject to the prevailing market prices. The red line shows the average price level at which the blue portion has been fixed through forward purchases, and the black line the market prices.

Figure 3



- 11 When viewing the difference between the red and black lines, this clearly illustrates the very significant benefit of the forward purchasing strategy, in particular since the beginning of 2021 and for the financial year ahead. There is clear benefit from the purchases made beyond this time, but the proportion fixed progressively diminishes in line with the strategy, and therefore the Council become increasingly exposed to the future market prices.
- 12 Forward purchasing of the Council's energy presents a number of other challenges and potential issues with the way the current strategy is expressed. Firstly, when buying further ahead than the relatively short-term, energy can only be purchased in uniform blocks for whole summer and winter 'seasons' (i.e. April to September or October to March). This can be seen from the lines in Figure 3 above in relation to future years. Only as the delivery period for the energy approaches do individual quarters and then ultimately individual months become available to purchase.
- 13 Since the Council's energy requirements are seasonal and change from month to month, this will inevitably result in individual months within each future season which are either under-purchased or over-purchased (for example, compare January with March volumes in the winter 'season' or April with August in the summer 'season' in Figure 3 above). This can mean that achieving the right balance between the proportion of energy fixed and unsecured can be

difficult for certain months each year, potentially increasing the exposure to short-term market price changes for these months. Also, because there are minimum units in which energy can be purchased if a premium is to be avoided (i.e. 1MW for electricity and 1,000 therms/day for gas), this can mean that it is difficult to stay within the approved strategy parameters as currently expressed, particularly for longer-term purchases where the target volume to be secured is only very small.

- 14 Also, although the Council continuously reviews and updates the forecasts for its energy requirements and its supply contracts allow for this flexibility without penalty, future changes in the Council's requirements are difficult to predict with certainty. Potential longer-term future changes in the corporate estate are not known, the pace of transition in the market to making low-carbon technologies more affordable or mandatory remains to be seen, and although the Council has made significant progress recently in installing decarbonisation measures across its buildings through the Public Sector Decarbonisation Scheme (PSDS), there is no forward programme of grant funding availability from Government beyond 2022/23 to inform further roll-out. A general move away from gas heating in corporate buildings to heat pumps might be expected to reduce gas demand whilst increasing electricity demand, and the planned transition of the Council's fleet to electric (as detailed in the Electric Vehicle Charging Strategy and Action Plan presented to Executive Board in February) might also be expected to increase the Council's electricity requirement.
- 15 These factors make adhering precisely to a forward purchasing trajectory, balancing risk and providing budget certainty challenging, and the strategy now needs to be amended in acknowledgement of these issues.

Costs

- 16 The 2021/22 budget for gas and electricity combined was originally set at **£20.9m**. This and the figures below include General Fund, Housing Revenue Account and schools for which the Council meets the energy costs.
- 17 Since this time further market price increases have been observed with the result that the latest forecasts are at **£23.5m** for 2021/22. This shortfall for this year will be met primarily through reserves. However, although, as noted above, a substantial proportion of the Council's energy requirement is already fixed for 2022/23 at an average price well below current market levels, there is still a significant proportion unsecured which is expected to attract the extremely high prices currently available, to the extent that the current forecast for 2022/23 is **£32.4m**.
- 18 An allocation of £2.9m from reserves has already been made within the budget for 2022/23 in response to expected cost increases previously reported, although this will not now be sufficient based on the latest forecast above which shows further substantial energy cost increases over those previously reported to Executive Board in September 2021.
- 19 As can be seen from Figure 1 above, energy prices currently available for the short to medium term are hugely higher than they have been historically for the same periods. However, although the longer-term prices remain substantially higher than historically, they are still significantly lower than the short to medium term prices available. Although the current situation appears extreme, it is possible that the current short to medium term prices could become the long-term prices, with very significant budget implications, and market insights indicate that prices for longer-term seasons will ultimately increase above currently available levels.
- 20 Given this risk, this raises the question as to whether the Council should seek to buy a greater proportion of its energy requirement further ahead than the approved purchasing strategy currently allows. However, to pursue this alternative strategy also involves risk, both in the event of longer-term prices unexpectedly returning to historical levels, and in terms of how this

sits with, for example, potential unforeseen future reductions in the Council's energy requirements due to major strategic, policy or infrastructure changes at national or local level.

- 21 The Council has also undertaken in its ESAP to enter into a renewables power purchase agreement (PPA) for up to 65% of its electricity demand and to deliver 10% of its electricity requirement from local renewables generation, and the purchasing strategy needs to anticipate and be sufficiently flexible to adapt to these changes.
- 22 To assess the financial risks, the costs of three scenarios have been modelled in Table 1 below. These forecasts take account of currently planned and funded initiatives such as the ongoing street lighting LED roll-out and the next round of PSDS schemes.
- 23 It must be noted that these cost forecasts are based on the market position at a single point in time and may be subject to significant change given the volatility of the energy markets (especially in light of developments in Ukraine). However, the figures represent the best available forecasts at the time of finalising this report and illustrate the order of financial impacts associated with the various scenarios modelled.

Table 1

	2021/22 budget + 5% inflation (£'s)			Currently available prices (£'s)			Prices continue at levels available for 2022/23 (£'s)			Prices return to average historical levels from 23/24 onward (£'s)		
	Elec	Gas	Total	Elec	Gas	Total	Elec	Gas	Total	Elec	Gas	Total
21/22	16.4m	4.5m	20.9m	18.4m	5.0m	23.5m	18.4m	5.0m	23.5m	18.4m	5.0m	23.5m
22/23	17.2m	4.7m	22.0m	25.0m	7.4m	32.4m	25.0m	7.4m	32.4m	25.0m	7.4m	32.4m
23/24	18.1m	5.0m	23.1m	21.8m	5.5m	27.2m	28.7m	8.6m	37.3m	20.0m	4.9m	24.9m
24/25	19.0m	5.2m	24.2m	20.9m	5.6m	26.5m	34.0m	11.7m	45.6m	16.5m	4.0m	20.5m
25/26	20.0m	5.5m	25.4m	21.9m	5.5m	27.5m	37.0m	12.5m	49.6m	15.5m	3.3m	18.9m
TOTAL	90.7m	24.9m	115.6m	108.1m	29.0m	137.1m	143.1m	45.3m	188.4m	95.4m	24.6m	120.1m

- 24 The scenarios above show the potential range of financial risk of the Council's currently unsecured gas and electricity volumes for future years being purchased at: b) the currently available market prices for these periods (see black line in Fig 3 above); c) the current very high short-term prices available which could potentially become the new norm, but could also be considered to be at a peak now, with this therefore a possible worst-case scenario; d) a return to much lower historical prices in the unlikely event of a return to these levels. These are compared to scenario a), which shows a position based on the original 2021/2022 budget, then including what might historically have been a normal level of year-on-year inflation.
- 25 This analysis shows that the cumulative cost over the whole period shown in Table 1 above of a progressive return to average historical prices for the Council's unsecured volume would be around **£17.0m** less than a scenario whereby prices remain at the levels currently available for future years. However, if the very high prices currently available for 2022/23 become the new norm and the Council were to pay this price for its unsecured volume for all future years shown above, the cumulative impact over this time would be an additional cost of an estimated **£51.4m** to the Council over the currently available future prices.
- 26 Market insights suggest that, whilst a longer-term downturn in prices is expected in line with the lower prices now available to buy for these seasons or years (as illustrated by the black line in Fig 3 above), the possibility of prices remaining nearer to the current short-term levels more permanently is by no means ruled out, whereas a return to historical levels is considered very unrealistic given the general trends and market factors contributing to price increases and the current situation.

27 In light of these market insights it is recommended that the current purchasing trajectory be revised to allow a higher level of forward purchasing over the longer-term.

Energy purchasing strategy

28 Since energy is generally only available to purchase up to 4 years in advance, it is proposed that the purchasing strategy cover this time-frame.

29 A new rolling four year forward energy purchasing strategy is therefore proposed, guided by external market advice, and based on the following approach:

- 85% of the Council's requirements for gas and electricity (excluding any sourced through local generation schemes) to be purchased in advance;
- up to 65% of the Council's requirement to be secured through longer-term trades (i.e. between 24 to 48 months in advance of when the energy is required).

30 These levels allow a degree of headroom to accommodate future reductions in the Council's energy volume requirements, in particular in relation to gas where there is a greater expectation of a progressive reduction in demand with the general move away from this fuel in national strategy. With the expected transition over to electricity, including low-carbon systems such as heat pumps replacing gas boilers (and an increase in electric vehicle charging), the same decrease in electricity demand is not expected. It should be noted here that, whilst low-carbon technologies like heat pumps provide net carbon savings, they do not generally in themselves result in cost savings due to increased electricity demand off-setting the gas savings.

31 A number of other principles are proposed to address the practical constraints in relation to energy purchasing referred to in paragraphs 12-14 above:

- It is acknowledged that it is not achievable to adhere to a precise straight-line trajectory for forward purchasing due to seasonal/monthly variations in the Council's demand and due to the constraints in terms of the periods for which, and the units in which, it is possible to purchase. Progress against the forward purchasing strategy and targets will therefore be considered in relation to whole season averages rather than monthly totals;
- A level of flexibility is proposed which enables the responsible officer to purchase 10% above or below the strategy levels for any season so as to take account of monthly variations in demand, unforeseen changes in the Council's volume requirements or to respond to market opportunities as informed by external advice;
- Since gas and electricity must generally be purchased in whole units of a minimum volume to avoid incurring premiums, this can make staying within the strategy parameters challenging for certain periods (in particular when buying further ahead when the targeted volume for a future season is very low). The strategy parameters above for future seasons may therefore be exceeded where it is unavoidable to do otherwise for this specific reason.

32 As noted above, the Council has committed to entering into a corporate renewables PPA for a substantial proportion of its electricity demand and to deliver 10% of its electricity requirement from local renewables generation. The timing of these initiatives coming into effect represents a risk in that unexpected delays could leave the Council under-purchased for electricity against its strategy for any period between their originally anticipated and actual start dates. This risk will be managed through effective procurement, project management and exploring options such as phased starts to agreements. The option to profile the PPA such that this smooths out the monthly variations in the Council's demand referred to above for the purchase of its remaining electricity requirement will also be explored.

- 33 It should also be noted that the Council's gas and electricity supply contracts allow the Council to continuously amend its forecasts, and the level of purchasing will be made against this continuously updated position in respect of the volume requirements.
- 34 This purchasing strategy will need to be subject to ongoing monitoring and review to determine its effectiveness and whether any amendments are required in light of the evolving position.
- 35 The current market position for energy prices clearly highlights the need for change and strengthens the business case for an acceleration in the roll-out of decarbonisation and energy efficiency measures across the corporate estate and increased internal resources in support of energy management across the Council.
- 36 As noted, this purchasing strategy sits within the context of the Council's new Energy Strategy and Action Plan (ESAP) which sets out the key areas of action for reducing its carbon impact from energy usage. The measures set out within the ESAP clearly form a key part of the strategy to mitigate the cost as well as the environmental impacts relating to energy.

What impact will this proposal have?

Wards affected:

Have ward members been consulted?

Yes

No

- 37 This proposal has significant risk and financial implications, but represents a risk management strategy to ensure that the potential cost impacts to the Council are managed as effectively as possible.
- 38 An Equality, Diversity, Cohesion and Integration (EDCI) screening assessment is appended to this report, which concluded that there are no EDCI impacts resulting from the proposals.

What consultation and engagement has taken place?

- 39 The Council has sought expert external advice on the proposals to validate the approach. The Executive Member for Resources has also been consulted on the proposal.

What are the resource implications?

- 40 This report is fundamentally concerned with managing energy costs, and the potential resource implications are set out within the main body of the report above.

What are the legal implications?

- 41 There are no specific legal implications.

What are the key risks and how are they being managed?

- 42 There are significant financial risks associated with the Council's energy purchasing, and the main body and recommendations of this report are fundamentally focused on implementing a strategy that will provide for the most effective management of these risks. Due to the volatile nature of energy prices and their link to global political, economic and other factors, energy purchasing is inherently risky and carries the potential for judgements and decisions which, with the benefit of hindsight, prove to have been costly. The Council's strategy involves buying energy progressively over a range of time periods in order to balance the risk, with the timing of purchases informed by market insights and advice provided by the Council's energy supplier via its professional trading desk.

Does this proposal support the council's three Key Pillars?

Inclusive Growth

Health and Wellbeing

Climate Emergency

43 Although this report is primarily concerned with managing energy costs, this clearly forms part of the Council's energy strategy which will make a significant contribution to reducing carbon, reducing emissions, with the associated links to air quality, and securing investment and employment opportunities in the City through the expansion of local renewables and low-carbon technology schemes.

Options, timescales and measuring success

What other options were considered?

44 The main options considered are detailed through the energy purchasing scenario modelling outlined above.

How will success be measured?

45 Success will be measured through comparing the Council's average purchased prices against market indices to determine the effectiveness of the strategy.

What is the timetable for implementation?

46 Subject to approval and call-in, the revised purchasing strategy will be implemented immediately.

Appendices

47 EDCI screening assessment.

Background papers

48 None.