

## **FUTURE ENERGY SUPPLY – APPENDIX A**

Recent extraordinary rises in the market price for energy have highlighted the need for immediate measures to mitigate the impact of these increases on the Council. Beyond this initial response, there are further measures that the Council could undertake to reduce demand for energy, to reduce the cost of energy, and to reduce the carbon impact of the necessary energy we still need. This appendix sets out energy cost pressures the Council is being subjected to, and the details of short and medium-term proposals for demand reduction, carbon reduction, and contractual changes in the way the Council procures energy.

### **COST PRESSURES**

BCC currently contracts for gas and electricity supplies using fixed price contracts. This means that the rate paid per unit over the lifetime of the contract is set based on the market price on the day the contract is signed. Energy is a traded commodity, and the cost does fluctuate. Due to a number of factors the cost of energy has risen to extraordinarily high levels recently, just at the time the Council's supply contracts were coming to the end of their term. These contracts would normally have been renewed under delegation granted at the [December 2020 Cabinet meeting](#), but it was considered unwise to lock the Council in to the high rates prevalent at the time for any extended period. A decision was therefore taken (which the Cabinet is invited to note – Recommendation 8) to extend the previous contracts by a short period, in order to avoid locking in at a time of historic high prices, whilst bringing forward options to reduce energy demand and change the way the Council procures energy. Further detail of Officer Executive Decisions/Urgent Key Decisions taken is at Annex 3 below.

As set out below, and referenced in the report submitted to the [February Cabinet](#), work is under way to develop alternative energy procurement methods that would reduce the carbon load of the Council's energy supply and reduce the Council's level of exposure to market prices.

The overall impact of increased energy prices is expected to be an additional £6M in-year financial pressure on the Council's total energy costs. This includes energy used in Housing (HRA), by schools in the Schools Energy Club, in the district heat network operated by Bristol Heat Networks Ltd, and electricity used in streetlighting. Further detail of this pressure is given at Annex 1.

### **STRATEGIC INITIATIVES TO REDUCE ENERGY COST AND DEMAND AND TO REDUCE CARBON**

#### **Short-term (FY 21/22)**

These are measures that need to be taken within the remainder of the current financial year, especially over the forthcoming winter period, when energy demand is at its highest.

#### **Demand reduction measures**

##### *(Recommendation 1)*

Whilst the growing unpredictability of funding for energy efficiency measures makes planning difficult, there are no-cost and low-cost measures that the Council could be taking to reduce energy demand, and related costs, especially over the forthcoming winter. These have to be taken against factors that will increase demand over the winter, especially the increased ventilation requirements arising from Covid-measures.

The delivery of no-cost/low-cost measures will require co-ordination across a number of Council Teams, and will require strong messaging to support the need for some measures (eg reducing temperatures in offices). This will be best achieved by the establishment of a virtual Energy task force, supported by and involving key Council teams, to develop actions and assign tasks to appropriate managers to reduce energy demand. This task force will also have value beyond the immediate issue. Officers would develop no and low-cost proposals for energy reduction measures across the corporate estate, which will then be assigned to the task force to be implement as soon as possible.

It should be noted that the Council has run a successful 'recycling' fund with matched funding from Salix since 2005. This fund allows the delivery of energy efficiency measures, with resulting cost savings deferred to replenish the original fund for further re-investment. The original core funding of £1.8M has now been spend three times over.

## **Contractual Changes – Gas**

*(Recommendations 5-7)*

The Council has contracted for gas supplies on a fixed price basis. Whilst this gives financial certainty over the price paid for gas, there is always a risk that the Council could lock in to a high price in a falling market.

The alternative to a fixed price contract is to contract on a flexible price. Under this mechanism, the gas price is not set at the time the contract is signed. Instead, the supplier trades for the Council's expected demand over the life of the contract, securing better prices as trading opportunities arise. This works better over longer contracts, where the supplier is given a wider window in which to trade. There is some risk associated with flexible contracting, and a risk profile needs to be agreed with the supplier to cover aspects such as how much of expected demand needs to have been purchased ahead of use (eg we must have all the gas we need for next month bought by no later than the start of the previous month, etc). So long as the supplier is not overly constrained, they will typically achieve better than market prices under flexible procurement compared with fixed price contracting over the long term.

The other concern over flexible procurement is the variability of the price; we won't know for certain how much we have paid for gas until after we have used it. The risk profile constrains the range of expected prices, but there is an option to set a Reference price, a firm price agreed between the Council and the supplier for budgetary purposes, with a periodic (usually annual) reconciliation of the actual prices and amounts paid. If the supplier has done well in trading for Council requirements, the reconciliation will result in a refund to the Council, if less well, there may be an additional payment. We will be able to obtain forecasts of likely reconciliation costs/payment throughout the year ahead of the actual reconciliation.

Over a four-year contract, we would expect there to be residual consequences from the current high prices over the first year or so, but also some reduced expenditure on gas as the transition to low carbon heating systems takes effect (see gas decarbonisation below). The expectation is that the usual fixed-price contracting would incur a spend of around £12.5M over four years. Allowing for a modest (5%) reduction over market prices as a result of using flexible procurement, the expectation is that a 4-year flexible gas contract for the corporate estate, HRA, and schools would cost around £11M. It should be noted that the UK Government intends to shift carbon-related tax levies from electricity to gas, so gas will become a more expensive fuel.

The Council currently operates a Dynamic Purchasing System (DPS) for grid gas and electricity supplies. Previous Cabinet approval (December 2020) gave authority for the Executive Director Growth and Regeneration, in consultation with Cabinet Member for Climate, Ecology, Energy and Waste, to approve procurements using this DPS within an overall spending envelope, up until the current expiry of the DPS in October 2023. The current DPS may provide a suitable procurement vehicle for flexible contracting, but the approval envelope would limit any new contract to less than two years duration, which is less optimal for flexible pricing. We would therefore need approval for the current grid DPS to be extended from October 2023 to March 2026 (end FY 25/26), in order to allow a longer flexible contract to be set up. There are also a number of Public Sector Buying Organisations (Crown Commercial Service, Laser, etc) that offer a flexible procurement options with trading desk support, that might also provide a suitable route to market for flexible gas contract. We would therefore also need approval for BCC to join and make use of a suitable Public Sector Buying Organisation framework, if this was to prove a better route to market.

## **Contractual changes – Electricity**

*(Recommendation 2)*

A previous Cabinet Approval ([February 21](#)) gave authority for Officers to develop proposals to make more direct use of the Councils own renewable energy generation and to recruit additional local generators to help supply the Councils zero-carbon electricity requirements. Preparations to go to tender on this are progressing, and it is anticipated that the new arrangements will go live from April 2022.

The sleeving arrangements approved in February 2021 were intended as an interim step and will significantly reduce the Council's exposure to market prices for electricity. The long-term plan is to move to a 'Sleeved Pool' model, which will better support multiple generators supplying multiple customers through a locally virtual pool of zero-carbon electricity. A [report](#) commissioned by BCC on the feasibility of the Sleeved Pool model indicated a number of procurement and operational issues that would need to be resolved, so it has been proposed that a pilot pool

(known as the Sleeved Puddle) should be set up to work through these issues. This would need to be carried out with the support and involvement of the City Leap partner, who may well take on the 'Pool Manager' role. The intent would be to run the pilot alongside the new sleeving arrangements for up to 12 months, starting in mid-2022 when the City Leap partner is on board. Approval is therefore sought to conduct a pilot of the Sleeved Pool model, working with the City leap partner once appointed.

### **Contractual Changes – Biomass**

*(To Note)*

BCC has a number of biomass boilers, which use wood pellets or wood chip as a carbon-neutral fuel to generate heat. The four wood-chip systems are supplied by arboriculture wastes from the Councils own estate; the six wood pellet systems are operating on a rolling supply arrangement with a biomass supplier. Now that it has been confirmed that the biomass systems will be remaining under BCC management (as opposed to transferring to City Leap), we need to regularise the contractual position in order to secure ongoing biomass supplies. Advice from Procurement is that the best route to market would be through a Public Sector Buying Organisation framework. The duration and value of a biomass framework contract would be below Key Decision level and would be agreed with Executive Director Growth and Regeneration in consultation with the Cabinet Member for Climate, Ecology, Energy and Waste.

### **Medium-term (beyond 21/22)**

These are measures that would be introduced after the current financial year but require development work to start within the current financial year.

### **Demand management**

*(Recommendation 3)*

In line with industry codes and legislative requirements, BCC has in place a number of arrangements for managing energy supply meters and for collecting data from these. Some of these charges are covered by specific metering contracts, some are embedded in fixed charges within energy bills that are not broken down (the intent is to move to full pass-through tariffs to increase visibility of charges such as this). Together, these services incur charges of around £300K pa.

The Energy Service currently manages approximately 150 half-hourly settled- and 1100 non half-hourly settled- electricity meters, 450 gas meters, and a growing quantity of metering equipment for generation, heat and electric vehicle charge point assets in and around the Bristol area.

At present, the Council has a collection of contracts with meter operators / data collectors / data aggregators (MOP/DC/DA) and data software providers. Some of the existing arrangements are supplier-led or on an informal or rolling basis. This is leading to patchy customer service. There are data quality issues for about 15% of our portfolio of metered supplies, which is hampering energy management. A lack of reliable metering data could potentially risk loss of generation income, and increased disputes with Suppliers and end users. We are also concerned about the increased likelihood of delays to metering works for major projects, posing risks for on-time project delivery.

We need to improve opportunities to take advantage of technologies such as Artificial Intelligence and bespoke time of use and flexi price supply contracts. Additionally, there is an increasing requirement for sub metering and heat metering of our energy assets

The proposal is to co-ordinate the procurement via a Dynamic Purchasing System (DPS), whereby industry-approved providers can apply for appointment to various Categories (LOTS) for metering provision and ancillary services. A DPS will enable us to call-off contracts in a timely manner within an annual cost envelope and to set clear requirements for metering agents that are independent of our energy supply contract arrangements.

Approval in principle is therefore sought to start procurement for a new 10-year Metering DPS. Bids will be sought to set up and operate contracts with metering agents, which will encompass the requirements of BCC-managed assets such as wind turbines, PV, Redcliffe Housing district heating and electric vehicle charge points. The Metering DPS will align with our energy procurement strategy such as the sleeving of the Council's own renewable energy generation to nominated Council sites.

The cost of metering and data collection services is estimated at £3M over a 10-year DPS lifetime. This is comparable with current charges over the same period.

### **Tenant billing**

*(Recommendation 4)*

Other than the wider Commercial estate (where BCC leases whole buildings to third parties), BCC has a number of tenants in its own buildings, such as DWP in 100TS. The leases for these tenancies includes provision for utility supplies (electrical power, lighting, heating, water, etc), often on a fixed cost basis, ie a fixed monthly contribution towards these costs, irrespective of how much utility the tenant actually consumes. This does not incentivise the tenant to share in efficiency measures being promoted by BCC; it makes no difference to the cost paid by the tenant whether they use more or less of any given utility. Whilst the measurement of utilities by tenants within a building can be complex, and potentially not always cost effective for all utilities, as a general principle, BCC leases should make provision for tenants to be charged for their utility use based on measured consumption at an agreed recharge rate, rather than on a fixed cost basis. Approval is therefore sought to introduce measured consumption as the basis for charging commercial tenants in Council corporate buildings for energy and water supplied from Council funded supply contracts.

## Annex 1 to Appendix A - Cost Pressures<sup>1</sup>

Cost Pressures against previous rates	21/22 at previous rates	Expected 21/22 spend	21/22 cost pressure	22/23 at previous rates	Expected 22/23 spend	22/23 cost pressure	Comments
Corporate (Gas and Electricity)	£4,444,806	£7,483,904	+£3,039,098	£4,444,806	£7,502,047	+£3,057,241	Un-sleeved/non-flex costs for 22/23
HRA (Gas and Electricity)	£2,752,173	£4,885,265	+£2,133,092	£2,752,173	£4,457,829	+£1,705,656	
Schools (Gas and Electricity)	£1,245,127	£2,690,045	+£1,444,918	£1,245,127	£2,625,081	+£1,379,953	
Heat Centres (Gas and Electricity)	£755,311	£1,162,588	+£407,277	£755,311	£889,934	+£134,623	
<b>Totals</b>	<b>£9,197,418</b>	<b>£16,221,803</b>	<b>+£7,024,385</b>	<b>+£9,197,418</b>	<b>+£15,474,891</b>	<b>+£6,277,473</b>	
<b>Effect of Strategic Measures</b>							
Sleeved Electricity					(£2,828,046)		Avoided cost of Sleeving v Grid supply (Spend would be this much higher on a grid contract) Avoided cost of flex v fixed contract (Spend would be this much higher on a fixed contract)
Flexible Gas					(£163,003)		
Task Force/no- & low-Cost measures		(£75,376)			(£61,864)		Assumes 1% saving in winter 21/22, enduring 0.5% annual saving thereafter, net of any costs incurred
Sleeved Puddle (Sleeved Pool Pilot)							No Net cost, would involve reallocation of c£100K of existing electricity spend
Metering DPS					(£15,000)		Assumes 5% reduction from consolidation of current arrangements, from 22/23
Corporate buildings tenant billing					(£45,000)		Estimated revenue over current fixed rate charges, from 22/23
Biomass		(£3,000)			(£7,500)		
<b>Net effect after strategic measures applied</b>	<b>£9,197,418</b>	<b>£16,143,427</b>	<b>+£6,946,009</b>	<b>£9,197,418</b>	<b>£12,354,479</b>	<b>+£3,157,061</b>	

<sup>1</sup> Based on market Prices as at pm 15<sup>th</sup> Dec 21

## Annex 2 to Appendix A – Approval Envelopes

Table of Approval envelopes requested

<b>Flex Gas Envelope<sup>2</sup></b>	21/22 (Feb/Mar)	22/23	23/24	24/25	25/26	Total
Previous spend	£539,750	£2,429,077	£2,429,077	£2,429,077	£2,429,077	£10,256,058
Fixed Price at market rates	£1,032,423	£4,268,022	£2,570,170	£2,425,331	£2,425,331	£12,721,277
Flex Gas Envelope	£1,032,423	£4,105,020	£2,441,661	£2,243,431	£2,182,798	£12,005,333
Annual saving	£0	<b>-£163,003</b>	<b>-£128,508</b>	<b>-£181,900</b>	<b>-£242,533</b>	<b>-£715,944</b>
		-3.82%	-5.00%	-7.50%	-10.00%	-5.63%

<b>Biomass Envelope</b>	21/22	22/23	23/24	24/25	Total
Previous spend	£60,000	£150,000	£150,000	£150,000	£510,000
Biomass Framework	£57,000	£142,500	£142,500	£142,500	£484,500
Annual saving	<b>-£3,000</b>	<b>-£7,500</b>	<b>-£7,500</b>	<b>-£7,500</b>	<b>-£25,500</b>
	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%

<b>Metering DPS</b>	21/22	22/23	23/24	24/25	26/26	26/27	27/28	28/29	29/30	30/31	31/32	Total
Previous arrangements	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£300,000	£3,000,000
Consolidated DPS arrangements	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£285,000	£2,850,000
Annual saving	<b>-£15,000</b>	<b>-£150,000</b>										
	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%	-5.00%

<sup>2</sup> Based on current Market prices (15<sup>th</sup> Dec 21) out to 2023, assumes gas prices return to historic levels by 24/25

**Annex 3 to Appendix A – Urgent Key Decisions**

Contract	Period	Total Contract Value	Total Contract Pressure	Total Contract Pressure	By Cost Centre	Contract Value	Value for period at previous rates	Contract Pressure	Comments
<b>October Electricity/November Gas Extensions</b>									
HH Electricity DN508612 (HH) DN508618 (CH)	Oct - Dec	£1,261,598	£565,629	£695,969	G&R (ES)	£591,131	£264,587	£326,545	Paid by ES then Recharged Paid by ES then Recharged
					HRA	£518,304	£230,983	£287,321	
					Heat Centres	£152,162	£70,059	£82,103	
					<b>Total</b>	<b>£1,261,598</b>	<b>£565,629</b>	<b>£695,969</b>	
Schools Electricity DN511370 (HH) DN511373 (NHH)	Oct - Dec	£499,487	£263,083	£236,404	Schools	£499,487	£263,083	£236,404	Paid by ES, recharged to schools
Streetlighting Electricity DN359558	Oct - Dec	£1,304,750	£727,682	£577,068	G&R (Highways)	£1,304,750	£727,682	£577,068	Highways budget
Corporate Gas DN524199 (LSP) DN352351 (SSP)	Nov - Jan	£1,509,265	£635,564	£873,701	G&R (ES)	£519,388	£210,311	£309,077	Paid by ES then Recharged Paid by ES then Recharged
					HRA	£798,307	£323,250	£475,056	
					Heat Centres	£191,570	£102,003	£89,567	
					<b>Total</b>	<b>£1,509,265</b>	<b>£635,564</b>	<b>£873,701</b>	
Schools Gas DN352351	Nov - Jan	£639,295	£206,380	£432,915	Schools	£639,295	£206,380	£432,915	Paid by ES, recharged to schools
<b>Total All October/ November OEDs</b>		£5,214,395	£2,398,338	£2,816,057	G&R (ES)	£1,110,519	£474,897	£635,622	Cost neutral to G&R, recharged Cost neutral to G&R, recharged Cost neutral to G&R, recharged <b>Funded from ES Budget</b> <b>ES Net Spend after recharges</b> Energy Service & Highways
					HRA	£1,316,611	£554,234	£762,378	
					Schools	£1,138,782	£469,463	£669,319	
					Heat Centres	£343,732	£172,062	£171,670	
					<b>Funded from ES Budget</b>	<b>£3,909,645</b>	<b>£1,670,655</b>	<b>£2,238,989</b>	
					<b>ES Net Spend after recharges</b>	<b>£1,110,519</b>	<b>£474,897</b>	<b>£635,622</b>	
					G&R (Highways)	£1,304,750	£727,682	£577,068	
					Combined G&R	£2,415,270	£1,202,580	£1,212,690	
					<b>Total all areas</b>	<b>£5,214,395</b>	<b>£2,398,338</b>	<b>£2,816,057</b>	

Contract	Period	Total Contract Value	Total Contract Pressure	Total Contract Pressure	By Cost Centre	Contract Value	Value for period at previous rates	Contract Pressure	Comments
<b>January Electricity Extensions (final values subject to contractual action)</b>									
HH Electricity DN508612 (HH) DN508618 (CH) DN511370 (Schools)	Jan -	£2,406,849	£652,878	£1,753,971	G&R (ES)	£736,220	£206,022	£530,198	Paid by ES then Recharged Paid by ES then Recharged Paid by ES then Recharged
	Mar				HRA	£841,272	£235,419	£605,852	
					Schools	£448,804	£104,944	£343,860	
					Heat Centres	£380,554	£106,493	£274,061	
					<b>Total</b>	<b>£2,406,849</b>	<b>£652,878</b>	<b>£1,753,971</b>	
NHH Electricity (extension) DN508623 (Corporate)	Jan -	£1,810,038	£497,699	£1,312,338	G&R (ES)	£699,751	£192,408	£507,344	Paid by ES then Recharged Paid by ES then Recharged
	Mar				HRA	£1,110,153	£305,254	£804,899	
					Heat Centres	£133	£37	£96	
					<b>Total</b>	<b>£1,810,038</b>	<b>£497,699</b>	<b>£1,312,338</b>	
Streetlighting Electricity DN359558	Jan - Mar	£1,711,439	£658,820	£1,052,619	G&R (Highways)	£1,711,439	£658,820	£1,052,619	Highways budget
Schools NHH DN511373 (Schools)	Jan - Mar	£351,814	£161,567	£190,247	Schools	£351,814	£161,567	£190,247	Paid by ES then Recharged
Total All January OEDs		£6,280,139	£1,970,963	£4,309,176	G&R (ES)	£1,435,971	£398,429	£1,037,541	Cost neutral to G&R, recharged Cost neutral to G&R, recharged Cost neutral to G&R, recharged Balance is recharged Energy Service & Highways
					HRA	£1,951,425	£540,673	£1,410,751	
					Schools	£800,618	£266,510	£534,107	
					Heat Centres	£380,687	£106,530	£274,157	
					<b>Funded from ES Budget</b>	<b>£4,568,701</b>	<b>£1,312,144</b>	<b>£3,256,557</b>	
					<b>ES Net Spend after recharges</b>	<b>£1,435,971</b>	<b>£398,429</b>	<b>£1,037,541</b>	
					G&R (Highways)	£1,711,439	£658,820	£1,052,619	
	Combined G&R	£3,147,410	£1,057,249	£2,090,161					

Contract	Period	Total Contract Value	Total Contract Pressure	Total Contract Pressure	By Cost Centre	Contract Value	Value for period at previous rates	Contract Pressure	Comments
					Total all areas	£6,280,139	£1,970,963	£4,309,176	
Total All OEDs (Gas and Electricity) Oct - Dec plus Jan - Mar for Electricity Nov - Jan for Gas		£11,494,534	£4,369,301	£7,125,233	G&R (ES)	£2,546,490	£873,327	£1,673,164	Cost neutral to G&R, recharged
					HRA	£3,268,036	£1,094,907	£2,173,129	
					Schools	£1,939,400	£735,973	£1,203,427	Cost neutral to G&R, recharged
					Heat Centres	£724,419	£278,592	£445,827	Cost neutral to G&R, recharged
					<b>Funded from ES Budget</b>	<b>£8,478,345</b>	<b>£2,982,799</b>	<b>£5,495,546</b>	Balance is recharged
					<b>ES Net Spend after recharges</b>	<b>£2,546,490</b>	<b>£873,327</b>	<b>£1,673,164</b>	
					G&R (Highways)	£3,016,189	£1,386,502	£1,629,687	Energy Service & Highways
					Combined G&R	£5,562,679	£2,259,829	£3,302,850	
				<b>Total all areas</b>	<b>£11,494,534</b>	<b>£4,369,301</b>	<b>£7,125,233</b>		

ES = Energy Service