POLICY & RESOURCES COMMITTEE	Agenda Item 58
11 October 2012	Brighton & Hove City Council

Subject:		Procurement of Automatic Meter Reading (AMR) Equipment to Electricity, Gas, Water & Heat Meters and of AMR Monitoring Software
Date of Meeting:		11th October 2012
Report of:		Strategic Director – Place
Contact Officer:	Name:	Angela Dymott Tel: 29-1450
	E-mail:	angela.dymott@brighton-hove.gov.uk
	Name:	Andy Batchelor Tel: 29-1441
	E-mail:	andrew.batchelor@brighton-hove.gov.uk
Wards affected:		All

FOR GENERAL RELEASE

1.   SUMMARY AND POLICY CONTEXT

1.1   One of the Council's key priorities is the creation of a more sustainable city reducing energy and water consumption from our own buildings through a combination of energy efficient and water saving technologies, improved insulation and staff awareness campaigns. In order to assess the effectiveness of these measures we need to have accurate consumption and billing information through the purchase and installation of Automated Meter Reading (AMR) equipment which will help to provide a full understanding of our baseline consumption profiles to enable robust budget and carbon management of our property portfolios. The information will also ensure that business cases for future energy efficiency projects are robust and realistic in respect of potential revenue savings generated.

1.2   This report explains the background behind the corporate proposal to introduce AMR equipment to energy and water meters within prioritised council buildings and the consequential need to procure AMR monitoring software to collect the data and to enable full analysis and reporting of consumption across our property portfolios.

1.3   Accurate, timely and reliable energy and water consumption data is required to assess and monitor the success or otherwise of projects commissioned through our energy and water reduction strategies, the Council's compliance with Bio Regional's One Planet requirements and our own targets and action plans to reduce our carbon footprint and assist with statutory returns including the Carbon Reduction Commitment (CRC) scheme.

2.   RECOMMENDATIONS

2.1   That the Policy & Resources Committee authorises the Head of Property and Design to approve the procurement and award of:

(i) A contract with a term of five years for the purchase and installation of AMR equipment to all Priority 1 and 2 sites for water, gas, electricity and heat metered supplies to schools, common ways of housing flats and other corporate buildings through the existing Government Procurement Services framework agreement at an estimated initial cost of up to £500,000 with subsequent annual data collection charges estimated at £60 per meter per annum (up to £50,000 per year) for five years.

(ii) A contract with a term of five years for the provision of a suitable AMR monitoring software tendered using an open procedure in order to maximise the benefits of the AMRs including consumption monitoring, high consumption alerts and web-based 'live' information available to schools and building users. The cost of the contract for the AMR monitoring software is included in Section 2.1 above.

3.   RELEVANT BACKGROUND INFORMATION / CHRONOLOGY OF EVENTS

3.1   Currently the Council's utility billing system is based on a combination of utility company reads, estimated reads and our own customer reads. The billing cycle is outside of our control and is often sporadic meaning that a full financial year can often pass without a bill being issued based on an actual read. This makes it difficult to fully understand the baseline consumption and how it varies over a period of time and between seasons. As a consequence we are unable to accurately determine the benefits of any energy and water saving measures we introduce. This has the following detrimental effects:

- One of the commitments within the 2011-15 Corporate Plan is to develop a carbon budget for the Council to be reported alongside the financial budget to provide accountability for our carbon emissions. This will be impossible to achieve with any degree of accuracy without AMR data.

- The Carbon Reduction Commitment (CRC) scheme introduced by the Department for Energy & Climate Change requires the Council to purchase carbon allowances based on the level of carbon emissions from its operations. Where we have to calculate these emissions based on estimated consumption data we are obliged to increase our consumption data by 10% resulting in a higher overall cost.

- The Council has committed to reducing its carbon footprint annually and to 'One Planet Council' accreditation. The installation of AMRs is key as the only way to produce the accurate consumption data necessary to demonstrate carbon reductions.

- Underground leakage in water mains often cannot be readily identified and repaired until the next 'actual read' bill is sent by Southern Water. Thousands of litres of water can be lost in the meantime causing potential wastage and unnecessary spending on estimated bills.

3.2   To enable us to fulfil our commitments, the Council's Carbon Management Board approved a scheme to introduce AMR equipment and AMR monitoring software into council properties to cover electricity and gas meters in May 2011. The scope of the requirement has been increased to include the installation of AMRs to water meters to corporate operational buildings with budget allocation for all priority 1 and 2 supplies.

The specifications for both the AMR installation and the AMR monitoring software are currently being prepared with an expectation of inviting tenders for the AMR purchase and installation contract through the Government Procurement Services framework agreement during November 2012.

Housing are part of this exercise and the Housing Revenue Account has set aside funds to meet the purchase and running costs associated with the installation of AMR equipment and AMR monitoring software to their prioritised building list.

3.3   The expected benefits of completing this project are summarised in **Appendix C**.

3.4   Automated Meter Reading (AMR) Equipment

3.4.1   AMR equipment is the technology of automatically collecting consumption, diagnostic and status data from water or energy (gas, electric and heat) metering devices and transferring that data to a central database for billing, troubleshooting, and further analysis. Heat meters are installed to renewable heat installations such as ground source heat pumps to enable the Council to take advantage of the government's Renewable Heat Incentive (RHI) tariff payments.

3.4.2   AMR equipment is the only method of accurately recording water and energy consumption trends as a means to identify excessive usage or major water main leaks between meter reading cycles.

3.4.3   AMR equipment will be sited alongside existing metering equipment, translating the meter's pulse signal to a meter reading and transmitting this to a central data logger. Where an existing meter does not contain a pulse function then it will need to be replaced by the appointed installation contractor as part of this project.

3.4.4   Transmitted data will be collected and forwarded:

- to the utility company (for energy) for billing purposes which virtually eliminates future estimated reads and
- to the Council – to maximise benefits this requires dedicated AMR monitoring software to enable us to view, analyse and accurately report on consumption and cost data (see 3.5 below).

The AMR equipment installer and service provider appointed under this proposal will charge for on-going data collection services which are estimated to total approximately £60 per meter per year on average to include the on-going costs of licensing the AMR monitoring software.

3.4.5   The property Energy & Water Team currently manage approximately 2,300 utility meters. These have been prioritised for the AMR equipment installation programme according to the definitions set out in **Appendix A**.

3.4.6   Our aim is to install AMR equipment to the Priority 1 and 2 meters (approximately 950 in total). The number of meters provisionally included within each portfolio is set out in **Appendix B**.

The remaining 1350 meters are either considered to have too low a consumption to warrant the costs associated with an AMR equipment install, are on existing unmetered water supplies or have been excluded for service specific reasons.

3.4.7 However, until all of the sites are surveyed we will not know exactly how many gas and water meters will have to be replaced in order for the AMR equipment to operate (i.e. how many meters already have the necessary pulsed output).

This will affect the overall cost but, if the initial survey indicates that the final costs for the priority 1 and 2 meters would exceed the budget available, we will only instruct those that can be afforded within the budget, working down the prioritisation list and with the highest consuming meters installed first. The number of meter replacements has been approximated by Property & Design at this stage in order to calculate a budget estimate for the project.

3.4.8 It is proposed that the AMR equipment and installation is procured through an existing framework agreement managed by Government Procurement Services and a specification and Invitation to Tender document is currently being finalised. The successful provider will be appointed on the basis of both price and quality of service. It is intended that a contract for a period of five years will be called off from the framework agreement after which a new data collection service will need to be procured using the installed AMR equipment.

3.4.9 The benefits of the AMR installation programme are summarised in **Appendix C** and include the ability to calculate accurate baseline consumption data for our properties. This will enable us to develop robust business cases for future energy and water improvement projects and a means of monitoring the success of the projects over time.

In addition the programme is expected to generate revenue savings including the following:

- Under the CRC scheme estimated meter readings incur a10% penalty uplift to our reported consumption resulting in the need to purchase additional carbon allowances. This uplift will be reduced by the removal of estimated readings through the AMR installation programme leading to a lower CRC carbon allowance charge.

- Lower overall water bills will result from early leakage detection. Recent examples are Saunders Park where an £89,000 bill was received for a major leak that went undetected for several months and Kingsway Bowling Greens where a leak resulted in an excess bill of £25,000.

- The ability to record energy and water consumption profiles over a period of time will allow Property & Design to identify and target unexpected consumption peaks especially in out-of-hours periods. The same information will support building managers to encourage staff and occupants to monitor and seek additional ways to reduce consumption through the Building Healthcheck process.

3.5 AMR Monitoring Software

3.5.1 A software solution is required to receive the AMR equipment data and translate this into usable information. AMR equipment data is usually collected on a maximum half hourly cycle and transmitted on a day plus one basis. This allows

daily usage profiles to be built up to identify baseline consumption, peaks of demand and where remedial actions can be targeted.

3.5.2 The benefits of the software solution are:

Value for Money Criteria: A dedicated energy management tool which can be used to carry out detailed analysis of consumption and cost data, analyse trends including comparisons of usage across similar sites, generate reports, factor in external influences such as external temperatures and issue alerts on unexpected consumption data as a means to identify excessive energy or water use including leaking water pipework.

Improving Customer Experience Criteria: An awareness tool allowing individual building users to view energy and water consumption for their own sites on a day plus one basis as a means to educate and encourage water and energy saving measures. The ability for schools to use energy and water consumption data for their own buildings as a curriculum teaching aid.

Statutory & Regulatory Criteria: Provides support for the information required to generate statutory Display Energy Certificates (DECs). This also supports data input for the statutory CRC requirements including an audit trail of data and data changes.

3.5.3 A specification of requirements for the AMR monitoring software has been produced, consulted on and approved by the ICT Change Advisory Board in July 2012. It is proposed that the AMR monitoring software is procured through an open tender process advertised on the South East Business Portal as no suitable framework agreement exists for the Council's requirement. The successful supplier will be appointed on the basis of both price and quality of product.

4.   COMMUNITY ENGAGEMENT AND CONSULTATION

4.1   Initial consultation has been undertaken with housing management, the schools team and the sustainability team to agree the method of prioritisation and funding availability. The specification for the AMR monitoring software has been circulated to these teams and suggestions for improvements have been incorporated into the final document which was reviewed and approved by the ICT Change Advisory Board in July 2012.

4.2   Further consultation will be undertaken with building managers and relevant stakeholders prior to the commencement of the installation project.

5.   FINANCIAL & OTHER IMPLICATIONS

Financial Implications:

5.1   The purchase, installation and initial software cost of the AMR equipment is to be funded from existing reserves of £307,000 specifically set aside for AMR equipment plus a further contribution of £90,000 from the school's Carbon Reduction Commitment (CRC) budget in this financial year and £100,000 from the One Planet Living Fund. The ongoing annual running costs associated with the data collection service will be met from existing CRC budgets for the schools

estimated at £20,000 per annum and the £26,000 for the corporate AMR equipment will be met from the Corporate CRC budget and utility bill budgets. The purchase and running costs associated with the Housing AMR equipment will be met from reserves set aside with the Housing Revenue Account.

Whilst it is difficult to project accurate figures for savings until the scheme is in operation, it is expected that savings will be generated through more efficient monitoring of energy and gas usage and therefore plans can be implemented to rectify excessive use at schools and operational buildings as well as the early detection of water leaks to reduce water bills. The accurate submission of energy use will reduce the Council's contribution towards the CRC scheme by as much as 10% for submissions where AMR equipment is to be fitted and which are currently based on estimated reads.

Finance Officer Consulted: Rob Allen   Date: 23rd August 2012

Legal Implications:

5.2   The approval of Policy & Resources Committee is required for matters with corporate budgetary implications, such as the procurement of AMR equipment and monitoring software for which the costs are likely to exceed £500,000. Accordingly the committee is entitled to agree the recommendations at Section 2 above.
Further, the council's contract standing orders require that authority to enter into a contract valued at £500,000 or more be obtained from the relevant committee. The proposal to introduce the equipment and software across a range of council property makes Policy & Resources the appropriate committee in that regard too.

The procurement of the new AMR equipment and the AMR monitoring software must comply with all relevant European and UK public procurement legislation. Legal officers will be advising on this aspect once the committee's authority to proceed is given.

Lawyer Consulted: Oliver Dixon   Date: 31 August 2012

Equalities Implications:

5.3   There are no equalities implications.

Sustainability Implications:

5.4   AMR equipment will allow energy and water consumption to be accurately monitored and corrective actions identified supporting the Council's commitment to reduce its carbon footprint and the bid for 'One Planet' accreditation. AMR monitoring software will enable building managers to view 'live' consumption data in order to assist the early identification of water leaks and target buildings for energy efficiency measures that exhibit high relative usage.

Crime & Disorder Implications:

5.5   There are no crime & disorder implications.

Risk and Opportunity Management Implications:

5.6   AMR equipment is are key to obtaining accurate and timely energy & water consumption data allowing us to greatly improve our programming of future energy efficient measures and allowing fast identification of major water leakage. Our supplies have been prioritised to take maximum advantage of this by targeting the highest risk buildings. The opportunities afforded by the project are detailed in **Appendix C**.

Public Health Implications:

5.7   There are no public health implications.

Corporate / Citywide Implications:

5.8   As contained in the body of the report, the programme of AMR equipment installations will supports the council's priorities - our commitment to reduce our carbon footprint annually, the bid to become a One Planet Council, to identify and take early action on water leakage and to address poor energy performing buildings across the Council's property portfolios.

6.   EVALUATION OF ANY ALTERNATIVE OPTION(S):

6.1   Do Nothing Option – Maintaining the status quo will result in continuing inaccurate water and energy consumption monitoring based predominantly on estimated billing. This will mean that our baseline data remains of poor quality potentially leading to poor budget management and overspends, unreliable assessment of future energy efficiency measures and an inability to target resources at the worst performing buildings. Water leaks will remain difficult to identify promptly resulting in higher than necessary bills and substantial water wastage.

7.   REASONS FOR REPORT RECOMMENDATIONS

7.1   This report proposes the purchase and installation of Automated Meter Reading (AMR) equipment into a prioritised list of council buildings and the procurement of AMR monitoring software to increase the accuracy and timeliness of our consumption data.

7.2   The benefits of this approach are detailed in **Appendix C** and in summary include:

- The ability to target future energy efficiency schemes on the worst performing buildings ensuring investment is targeted to priority buildings and areas,
- Provides an early warning on changes to consumption allowing early intervention,
- Assessing the success or otherwise of energy efficiency projects providing essential feedback for inclusion in future schemes,
- Improved forecasting of energy and water budgets,
- Compliance with CRC requirements with an auditable history of consumption at each AMR site,

- Improved accuracy of Display Energy Certificate (DEC) reporting and
- By providing a user web portal to their consumption data on a virtually live basis, building staff and occupants will be encouraged to make consumption savings including school children as an aid to the curriculum.

SUPPORTING DOCUMENTATION

Appendices:

Appendix A: Definition of AMR priorities & methodology

Appendix B: Summary of utility meters by portfolio & AMR prioritisation

Appendix C: Summary of benefits expected from the AMR monitoring software

Documents in Members' Rooms
None

Background Documents
None