

# **DERBYSHIRE COUNTY COUNCIL**

## **CABINET MEETING**

**6 November 2012**

### **Report of the Director of Property**

#### **(FINANCE AND MANAGEMENT)**

#### **Automatic Meter Readers (AMR)**

##### **1. Purpose of the Report**

The purpose of this report is to advise Cabinet of a revised approach to finance the installation of Automatic Meter Readers (AMR) in Derbyshire schools and to seek approval to proceed.

##### **2. Information and Analysis**

Following the establishment of the Council's Environmental Sustainability Group (ESG) in March 2010, carbon reduction has been a key objective and as a result the Council has adopted a 25% carbon reduction target. Carbon emissions from buildings, including schools, account for around 70% of the total carbon emissions resulting from the Council's operations. It is therefore increasingly important to understand energy consumption profiles across Council buildings to improve energy management. To enable this, improvements need to be made to the quality of energy consumption data, which AMR will help to achieve.

AMR enables the automatic collection of consumption data from energy meters and transfers this data to the supplier for billing and analysis purposes. The AMR meters provide customers with access to half hourly (HH) data on their energy supplies, providing an accurate and timely energy profile of buildings. With consumption data sent direct to the supplier, the customer receives accurate bills and estimated invoices are avoided, which also helps to reduce administrative burdens of resolving any invoicing issues. Improved data also assists in setting future energy budgets for council departments and schools.

Improved energy consumption data and identifying energy wastage as a means to improve energy efficiency will help to reduce the financial impact of likely future increases in energy prices.

As a participant in the mandatory CRC scheme, the council has to report annually on its carbon emissions and purchase allowances for each tonne emitted. This is set at £12 / tonne for 2011/12 emissions and set to rise to £30 / tonne by 2020. For any sites where actual meter readings are not available, a 10% uplift is applied to estimated data, increasing the amount of reported CRC emissions which results in additional CRC allowances to be purchased unnecessarily. AMR data will ensure that reported emissions are based on accurate consumption.

On 14<sup>th</sup> September 2010, Cabinet approved the report “Installation of Automatic Meter Readers”, which detailed the benefits and proposed installation of AMR within the Council’s corporate buildings. To date, around 140 electricity AMR meters and 160 gas AMR meters have been installed within corporate properties.

Subsequently, at its meeting on 25<sup>th</sup> January 2011, Cabinet approved an allocation of £500,000 from the Corporate Capital Programme 2011/12 to purchase and install AMR within schools was approved. At that time it was thought that the AMR meters could be purchased outright. However with the on-going costs of data retrieval it is considered that the installation of AMR within schools will be best delivered by the utility companies as it has been in corporate buildings as an extension to the utility contract. Therefore the expenditure is revenue rather than capital in nature.

As schools account for 70% of the carbon emissions from all council buildings, they have a significant impact on escalating energy costs and associated Carbon Reduction Commitment (CRC) costs and therefore the installation of AMR in schools is still considered a priority. As such, CAYA have proposed to finance the first year costs of AMR for schools wishing to participate and schools will then be required to meet the costs of AMR thereafter from their delegated budget. The financial information of this proposal is detailed in section 3 of this report for consideration and approval.

If Cabinet approves this revised approach to financing AMR within schools, schools will be contacted advising them of the benefits of AMR and detailing the offer being made to them. Should they wish to participate they will be asked to enter an agreement with the Council to ensure that they will meet AMR costs after the initial year. Once schools have opted to participate in the AMR programme, the Carbon and Energy Management Team will place orders with the utility suppliers for the installation of AMR in their schools.

### 3. Financial Considerations

For schools that are on the Council's energy contract, AMR can be procured as an addition to the contract on a rental basis over a 5 year period. Although the majority of schools are on the energy contract, approximately 60 (14%) are not. For these schools the Carbon and Energy Management Team and CAYA will provide support and advice to those schools as to how they might proceed with the procurement and installation of AMR.

The costs below detail the annual AMR cost, although the costs will be invoiced monthly on the energy bill. These costs are for customers on the existing energy contract and may be subject to change in future. Prices for schools not on the Council's energy contract will vary.

#### **Gas (Corona / Energy Assets)**

Annual cost @ 50p / day	£182.50 / year
(as part of existing energy contract)	

#### **Electricity (British Gas / Centrica)**

Single phase meter	£99.65 / year
Three phase meter	£115.41 / year

Typically, schools will pay in the region of £300 per year for gas and electricity AMR combined.

It is therefore recommended that CAYA fund the first year AMR costs within schools, which are estimated at a maximum of £125,000 and will be funded from the 2011-12 Dedicated Schools Grant underspend. From year 2 and beyond, schools will meet the AMR costs through their delegated budget.

Due to changes in the national school funding rules, the funding for year 1 AMR costs will need to have been transferred from CAYA to all participating schools by 31<sup>st</sup> March 2013.

It is anticipated that a large number of schools will take up this offer. It should be noted that with an estimated lead in time of 3 months from the point the order is placed, the installation of AMR and the retrieval of data for some sites will occur during 2013/14.

The County Council has a contract with Systems Link for the automatic import of AMR data from data collectors into the energy management system to enable the analysis of the consumption data. This currently costs £650 per year. With the potential addition of all schools, this cost could increase to £1,450 per year, an increase of £800 annually. This cost

will continue to be met through the Carbon and Energy Management budget.

#### **4. Environmental Considerations**

Through improved energy monitoring, schools and the Carbon and Energy Management Team will be able to better identify occurrences of energy wastage, which will help identify appropriate energy efficiency measures to reduce consumption and resulting carbon emissions. The improved data will also assist in performance reporting against the Council's 25% carbon reduction target and will help monitor the effectiveness of energy efficiency measures.

#### **5. Legal Considerations**

The County Council will be required to enter an agreement with each supplier for the installation of and data collection from AMR in schools as an addition to the utility contract, as has been done for the corporate properties. When expressing their interest in participating in this proposal, schools will be required to enter an agreement with the Council to confirm that they understand that year 1 costs are being met by CAYA with all subsequent costs being met by the individual schools.

#### **6. Other Considerations**

In preparing this report the relevance of the following factors has been considered; financial, legal, prevention of crime and disorder, equality and diversity, human resources, environmental, health and transport considerations.

#### **7. Key Decision** **YES**

#### **8. Call-in**

Is it required that call-in be waived for any decision on this report? **NO**

#### **9. Background Papers**

"Installation of Automatic Meter Readers" – Cabinet 14<sup>th</sup> September 2010

#### **10. Officer Recommendation**

That Cabinet:

1. approves the revised approach to financing AMR in schools.

2. approves the estimated year 1 AMR costs of £125,000 to be met from the 2011-12 Dedicated Schools Grant underspend.
3. notes that the £500,000 allocated in the 2011/12 Corporate Capital Programme for schools AMR is no longer required for this initiative and is therefore given up.

JEREMY GOACHER  
Director of Property

And

IAN THOMAS  
Strategic Director of Children and Younger Adults

NOT FOR PUBLICATION  
Contains information relating  
to the financial or business  
affairs of another

## **DERBYSHIRE COUNTY COUNCIL**

### **CABINET MEETING**

**14 SEPTEMBER 2010**

#### **Report of the Director of Property**

#### **Installation of Automatic Meter Readers (AMR) (Finance & Management)**

##### **Purpose of the Report**

To seek Cabinet approval to install Automatic Meter Readers (AMRs) throughout the Authority's non-school buildings and to advise Cabinet how AMRs are to be introduced to school buildings. Cabinet is also requested to note the attached Business Case for AMRs.

##### **Information and Analysis**

In order to achieve the objectives stated in the 'Structures and Workstreams on Environmental Sustainability' report submitted to Cabinet on 30 March 2010 by the Strategic Director for Environmental Services (see Appendix A); the Carbon & Energy Management Team (CEMT) has made improving the Council's energy consumption data its main priority.

Understanding when, where and how energy is used in Council buildings has become increasingly important in recent times. High quality energy data is essential to accurately record energy consumption and carbon emissions, identify efficiency savings and report on compulsory National Performance Indicators.

Derbyshire County Council is a participant in the Carbon Reduction Commitment Energy Efficiency Scheme (CRC). To comply with the scheme and minimise the risk to the Council, we need to have accurate, accessible and timely energy data.

Although schools have autonomous budgets and can procure their own energy, the Council are liable for these carbon emissions through the CRC. In the introductory phase of the CRC schools emissions result in an annual outlay for the Council of around £491,000 worth of carbon credits. This cannot be recharged to schools.

Currently, we rely upon sites to provide meter readings that are read and processed manually. Even with encouragement from the CEMT, this has not been wholly embraced by all sites. In some cases, CEMT staff resources are used to collect the readings. As such, the overall collective understanding of the Council's energy

- Page 1 of 5 -

consumption is at best patchy and sporadic, and the process is time consuming, costly and open to error. Schools emissions also need to be constantly monitored to ensure the Council's risk is kept to a minimum. As such the Council needs to facilitate and support energy data collection and savings in schools by offering good quality carbon management services to them.

Automatic Meter Readers (AMR) is a technological solution to this problem. It is now possible to enable gas, electricity and water meters to transmit consumption data automatically on a half hourly basis. This removes the need for manual meter reads and also provides an accurate, real-time energy profile of all Council sites.

### **Non Schools**

The intention is that all DCC owned, non-school properties will be fitted with AMR for gas and electricity supplies. The additional purchase and installation charges will be met from the Planned Maintenance Programme (PMP) budget.

### **Schools on DCC Energy Contracts**

Since schools are responsible for 64% of the Council's carbon emissions from the gas and electricity used in properties, schools have a significant impact on its CRC performance and, as such, will be encouraged to have AMRs installed.

Schools on the DCC energy contract will have the option of adding the additional metering costs to their utility bills, which will avoid additional administration for finance by the CEMT. All schools will be contacted individually with a bespoke cost-benefit analysis for AMR to inform their decision making.

The introduction of AMR will:

- Allow CEMT staff to redirect their time to identifying wasted energy, find potential savings, educating staff and providing meaningful corporate reports.
- Eradicate patchy data, processing errors and incorrect invoices.
- Assist in the production of accurate Display Energy Certificates (DEC's).
- Help us to identify wasted energy, thereby reducing our CO<sub>2</sub> emissions, contributing to efficiency saving targets and making the council more sustainable.
- Utilise existing Energy Monitoring & Targeting systems to their full potential.
- Adhere to the Corporate Business Plan by "doing things better and differently", "providing excellent value for money", enabling "strong and effective financial management" (of utilities) and helping to achieve "well managed and efficient assets".

For a more detailed explanation of the benefits, see Appendix B (Business Case for Automatic Meter Readers).

### **Financial Considerations**

#### **Costs to Non Schools**

Costs are based on the number of fiscal utility meters on site and the type of meters.

Electricity AMR costs from £15.04 to £94.11 each year per meter for 5 years.

Gas ranges from £119.50 to £182.50 each year per meter for 5 years.

Charges include transferral of data to our existing energy management software.

	Annual	5 Years
<b>Estimated cost of installing AMR across non-school properties</b>	<b>£73,000 Max.</b>	<b>£365,000 Max.*</b>

\*Costs quoted are maximum as it is intended that the number of non-school buildings is significantly rationalised over the next 5 years.

Although every effort will be made to avoid aborted callouts associated with AMR installation, we will be charged where they occur (for example where asbestos is discovered). There will also be meters which require additional work to exchange due to their location. These additional costs will be met by the Planned Maintenance Programme contingency budget where feasible (see Appendix B).

### Benefits

AMR Costs Non-Schools	Cost over 1 year	Cost over 5 years
Gas	£44,566.50	£222,832.50
Electricity	£28,408.58	£142,042.90
	<b>TOTAL</b>	<b>£364,875.40</b>

Definite-these are automatically achievable savings upon installation of AMR	Saving for	Savings over 5 years	Balance (Initial savings minus AMR costs)
CRC 10% overcharge for estimate <sup>1</sup>	DCC	£137,109	
CRC Early Action Metric (over introductory phase of CRC) <sup>2</sup>	DCC	£66,937	
Optimise tariffs and profiles <sup>3</sup>	DCC	£582,463	
	<b>TOTAL</b>	<b>£786,510</b>	<b>£421,635</b>

These are achievable savings using AMR for Monitoring and Targeting	Saving for	Savings over 5 years	Balance (Initial and mid term savings minus AMR costs)
Automated invoice validation and payment <sup>4</sup>	DCC	£258,160.00	
Enable C&EMT to do real energy analysis Saving 10-30% take as conservative 5%	DCC	£970,772.43	
	<b>TOTAL</b>	<b>£1,228,932.43</b>	<b>£1,650,566.96</b>

### Costs to Schools

Installation of AMRs to all schools which are on the DCC energy contract can be arranged through procurement and invoiced directly to schools on their utility bills. Where schools are not part of the energy contract, CEMT will contact them individually with advice on cost, benefits and options of AMR installation.

<sup>1</sup> Appendix B, Business Case for Automated Meter Readers, CRC Compliance, page 3

<sup>2</sup> Appendix B, Business Case for Automated Meter Readers, CRC Early Action Metric, page 3

<sup>3</sup> Appendix B, Business Case for Automated Meter Readers, Accurate Bills and Tariffs, page 5

<sup>4</sup> Appendix B, Business Case for Automated Meter Readers, Invoice Validation Opportunity, page 12



AMR Costs for schools	Cost over 1 year	Cost over 5 years
Gas	£84,380.00	£421,900.00
Electricity	£41,564.28	£207,821.40
<b>TOTAL</b>		<b>£629,721.40</b>

Definite-these are automatically achievable savings upon installation of AMR	Saving for	Savings over 5 years	Balance (Initial savings minus AMR costs)
CRC 10% overcharge for estimate <sup>1</sup>	DCC	£245,967	
CRC Early Action Metric (over introductory phase of CRC) <sup>2</sup>	DCC	£119,000	
Optimise tariffs and profiles <sup>3</sup>	School	£1,067,537	
<b>TOTAL</b>		<b>£1,432,503</b>	<b>£802,782</b>

These are achievable savings using AMR for Monitoring and Targeting	Saving for	Savings over 5 years	Balance (Initial and mid term savings minus AMR costs)
Automated invoice validation and payment <sup>4</sup>	School	£560,000	
Enable C&EMT to do real energy analysis Saving 10-30% take as conservative 5%	School	£1,779,228	
<b>TOTAL</b>		<b>£2,339,228</b>	<b>£3,142,009</b>

### **CRC Fines and Charges**

Significant fines are levied with non compliance of the CRC ranging from £5000 to imprisonment. None of these fines have been costed into the attached business case as they are causal, however they should be duly noted.

### **Other Considerations**

It is important that resources be allocated to utilise the system to its maximum potential. This resource will be fulfilled by the existing CEMT members through reduced need to spend time verifying bills and collecting and processing data

Without effective communications with sites and heads of service, AMR data cannot be used to its full potential. CEMT will be directed to provide the education and systems access to ensure services and sites understand the benefits of the system.

The contract for these meters is for 5 years. At present the Council is able to have the charges added to the normal utility bills through procurement arrangements. However, when the utility contracts are re-tendered in 2011, the AMR charges may need to be invoiced separately to sites. This must be communicated to sites.

The rationalisation programme will result in closure of some buildings. As AMR contracts will last for 5 years, we need to work closely with Asset Management to ensure AMR is not fitted in sites with a limited future.

In cases where the cost of implementing AMR exceeds the possible benefits from such an installation, officers will continue to work with sites to improve methods of data collection.

This half hourly data will be accessible to all sites with a log in to the Systemslink Portal. Education and awareness of deciphering this data will be provided by CEMT.

#### **Implementation Programme**

AMR for medium to larger supplies will be required by law by April 2014. Legislation to apply this to smaller supplies is currently at the consultation stage.

The completion target for AMR installation to non schools is 31 March 2011. However, the full programme will have a lead time of around 2 months and the majority of sites completed in around 6 months.

Work to encourage individual schools to agree to install AMRs will commence immediately, with a target of all of the larger supplies to have AMR in 12 months. Other feasible supplies will be identified in the cost benefit analysis and will also be encouraged to take on AMR.

The earlier the Council acts, the sooner it can realise benefits through energy saving and CRC bonuses. A full training programme of site managers will be implemented in line with the installation of the AMR.

In preparing this report the relevance of the following factors has been considered; financial, legal, prevention of crime and disorder, equality of opportunity; and environmental, health, human resources, property and transport considerations.

#### **Key Decision**

**YES**

#### **Call-in**

Is it required that call-in be waived for any decision on this report? **NO**

#### **OFFICER RECOMMENDATION**

That Cabinet:-

1. approves the installation of AMRs throughout the Council's non-school buildings, wherever it is practical to do so and
2. notes the progress on installing AMRs in school buildings and the supporting Business Case.

Draft Cabinet Meter Readers 14 Sept.doc Ref MJ (Chatsworth)