

Smart Metering Team
Ofgem E-Serve
9 Millbank
London SW1P 3GE

Our Ref: CBSBusDev-28-9-10

Attention: Margaret Coaster

Emailed Only

28th September 2010

SMART METERING IMPLEMENTATION PROGRAMME

ENERGY METERING TECHNOLOGY LTD's RESPONSE TO PROSPECTUS and SPECIFIC QUESTIONS

1. CAPACITY IN WHICH I AM RESPONDING AND BACKGROUND

My name is [REDACTED] of Energy Metering Technology Ltd (EMT), and am responding due to my passionate believe that automatic meter reading, and the awareness it brings to the consumer, is fundamental to achieve utility resource use efficiency. I have taken the lead from Lord Kelvin who said something along the lines of *"if you don't measure it, you don't know much about it"*.

[REDACTED] one of the UK's pathfinders in the whole concept of automatic utilities auditing (also known as aM&T by MMG ESTA) in the C&I market and has been developing new concepts and associated electronics (DATA BIRD) and software (DYNAMAT) in this area since the 1980's during which time my company has received several awards for both innovation and specific project achievement.

Amongst other related matters we were the instigators of the Carbon Trust Field Trials and also the initial MPU agreement with Transco; the latter after our complaints to Ofgas/Ofgem when AMR interface to fiscal gas meters took up to 6 month of bureaucratic hassle.

Since the 1980's, [REDACTED] stayed in business based on offering "turn key" automatic meter reading systems and services for cost, consumption and carbon savings. Originally we had to sell the whole concept of aM&T to our potential customers before we sold our turn key offering. Now most C&I consumers understand the benefits of aM&T and we sell our equipment in a hot, competitive and innovative market.

We have been lobbying at many levels for the adoption of aM&T since the mid-1980's and are delighted that it has now been accepted as the modern way to manage utilities.

Despite this fantastic progress of the acceptance and adoption of aM&T, in the C&I market, the barrier to roll out remain the intransigence of the energy and water supplier industry and Ofgem and

Oswat to embrace the new concept that, when automatically read, a fiscal meter can be a work horse for consumption/carbon management rather than just an idle asset for fiscal management by the supply industry.

After many years lobbying Ofgem in many forms including as a member of the now defunct New Metering Technology Working Group, I am a little sceptical of "Ofgem of old's" motives since, despite their claim that they are *Promoting choice and value for all gas and electricity customers*, I have found them intransigent, pigeon holed and riddled with motives just to support the Energy Supply industry.

Although approached with distrust, to say I was delighted to read the new Ofgem's aspirations espoused in the prospectus, is an understatement. Are we talking about the same organisation here I asked myself?

At this juncture, to be positive and putting all the negative experiences behind me, I must assume the visions outlined in the prospectus are sincere. On this basis, but tainted with my past experience, I make this response.

I attach no confidentiality to any of the content of this document.

2. QUESTION AND ANSWER STRUCTURE

I have a little concern at the pre-organised structure of the question/answer format since this is someone limiting "free thought". I am, therefore, following in this response the remark that Ofgem E Serve *"would like to hear the views of interested parties"*

3. MAIN CONTRIBUTION THEMES

I have two main contribution themes to my response, these are:

Facilities To Allow A Value Added Services Market - To ensure that whatever is done/decided allows a free, vibrant, competitive, entrepreneurial and innovative market in services to flourish with a core aim to reduce utility consumption/carbon emissions.

What Is Going To Happen In The Transition Years Before The Smart Metering Roll Out? – What is to be done between now and when the Implementation Programme will be rolled out, especially related to extending and encouraging the good works achieved so far rather than dismissing them and snuffing them out.

I raise relevant points on these themes in the next two sections and then reply to some of the specific questions.

4. FACILITIES TO ALLOW A VALUE ADDED SERVICES MARKET

4.1 Market Penetration Strategy – Level Playing Field – Promote Innovation, Entrepreneurialism and Competition

When in the 1980's my company commenced business in this area (we were formally pure Energy Consultants), we decided that the penetration strategy was to develop systems and services in the major energy users market (large campus style sites, MOD, large industrial etc.), then to the small to medium size premise market (small businesses, local authorities, schools), finally to the domestic market.

From a commercial point of view, and putting it crudely, this meant that we could develop the concepts and hardware systems in sectors that could afford it and then transfer/translate these down to the lower consuming sectors, adjusting them where necessary.

There is much to be learned from this experience that can be migrated to the domestic market and I believe that the consultation paper does not recognise the great works that have already been achieved in this area by companies like mine that could be used to both assist smart metering implementation and achieving the expected utility/carbon savings; in particular the expertise and experience of the members of the Metering and Monitoring Group members (MMG) of ESTA

The problem is “a level playing field for lobbying/consultation”, since many of the small entrepreneurial companies in this area do not have the resources to promote their expertise and experience. But of course the supply industry and the large meter manufactures have significant resources to send in “the suits”!

If you want the best brains, expertise and experience to be brought to bear to evolve a solution, my suggestion here is to, somehow, fund/facilitate their involvement in a more formal way.

As a second related pointed, if you want UK carbon savings, ensure whatever emerges in hardware and communication access has the flexibility to encourage similar innovation, entrepreneurial, competitive cost/consumption offerings to domestic consumers from such small companies. Indeed promote this as the “main stream” rather than dominance of services offered by the Supply Industry.

4.2 Making the Customer/Consumer the Focus/ Create a New Market For Value Added Services from meter Data

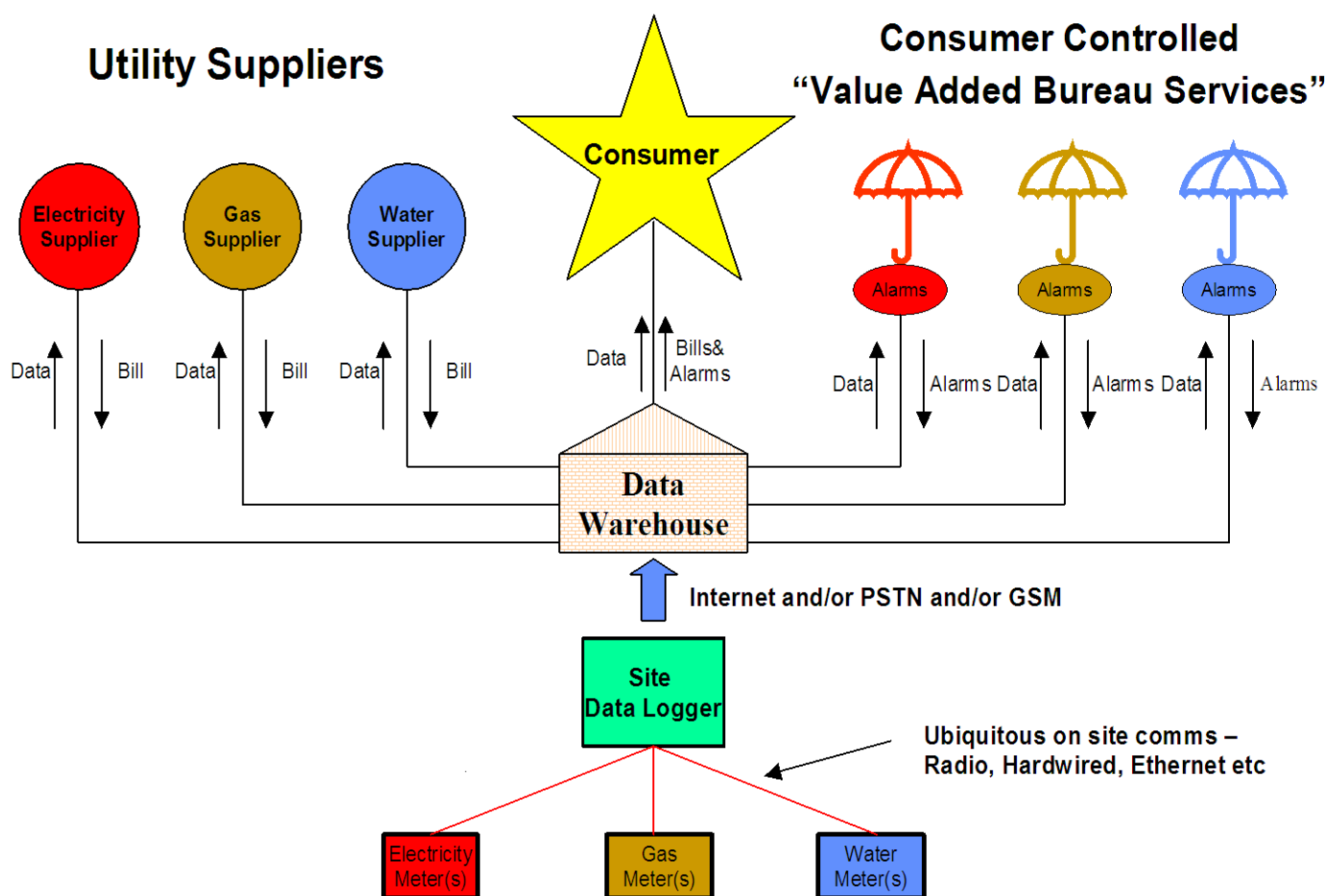
I was naïve, when back in 2001/2002, I became a member of the defunct Ofgem/Elexon New Metering Technology Working Group (NMTWG) – I thought it was about using technology to give the Consumer a better deal – “accurate and timely readings” for starters. But consumers were not represented at all – the group was primarily Energy Suppliers and major meter manufactures that wanted to protect their “empires” in the market place and put new technology that might “empower consumers”, well and truly to bed. Indeed these were the very words I used at several of the meetings when no progress was being made.

Before this reality struck home, I did manage to present a few papers and presentations to the group; two were of particular significance to the current Prospectus. I attach a copy of a November 2002 paper that I hoped would encourage debate on multi-utility automatic meter reading and get it on the NMTWG Agenda – see Appendix One attached.

In addition in June 2002, I gave a PowerPoint presentation to the group on the virtues of AMR to the group and how it could help to empower the consumer to save consumption. Of course “this went down like a lead balloon” to the group members! However, a particular slide (see below) gives my suggestion on how AMR and metering arrangements could be changed to empower the consumer.

Consumer Rules OK!

Alternative Data Warehouse - Consumer Controls Access to Data



Slide from EMT presentation to NMTWG June 2002



Energy Metering Technology Ltd.

The idea was first for the Consumer to be the “star” and the party all Others offered services to and who all others, utility Suppliers and Value Added Service Providers were beholden to. All the crude meter data and calculated data were contained in a secure national data base (we used to call this data warehousing then) and the Consumer controlled access to the data!

To change utility supplier the Consumer would simply tell the supplier he was with when he would lose the custom by restricting their access to the meter data; the next supplier of course being given new access at the same point in time – final meter reading and new meter reading being the same.

However, I saw the largest opportunity to consumption/carbon savings being the customer controlled “value added services” on the right of the diagram; the customer would give “read only access” to a new vibrant industry of competing value added utility related services, including, of course, utility efficiency of use services.

4.3 Access to Meter Data at Two Levels

It would appear this model is very similar to that proposed in the Prospectus, but as I said above more emphasis should be placed on the consumer controlling access and then the access controls to allow a competitive, entrepreneurial, innovative value added services related market to flourish.

In my opinion customer controlled access to their data needs to be at two location levels:

- Level One - at the meter/data collection point at the premise
- Level Two – at the Data Warehouse/DCC point.

5. WHAT IS GOING TO HAPPEN IN THE TRANSITION YEARS BEFORE THE SMART METERING ROLL OUT?

5.1 Summary

It is a “no brainer” that utility consumption management is best in the hands of the consumer rather than organisations supplying utilities. It is very refreshing to see this fundamental understanding embedded in the Smart Metering Implementation Programme Prospectus, in particular the recognition of the meter as a tool for consumption/carbon management by the consumer and the empowerment of the consumer to control access to meter data.

Unfortunately the rollout programme and all that is needed to change the emphasis from the meter being an instrument under the control of the utility industry, and for fiscal management, to, under the control of the consumer, and for carbon management, is going to take at least *four years*. But UK Carbon Savings need to be accelerated. So what is going to happen between then and now to smart metering to facilitate this?

The answer is there needs to be a quick, urgent and balanced review of the Supplier Licence Conditions to adjust them to recognise a meter is now an important tool for carbon management with changes made to reduce, as far as possible, the current barriers to enable meters to be automatically read by consumers.

However, this needs to be preceded by an aligning of attitudes and policies within both Ofgem and DECC in regard to the current use of the meter as both an instrument for fiscal management and carbon management.

A further requirement for the Transition period is that there needs to be acceptance that as a minimum requirement the provision of the common simple, basic pulse output from fiscal meters be facilitated for consumer data access until the standard meter interface to which the Prospectus aspires is developed and available.

5.2 Evolvement of aM&T for Carbon Management

In the C&I market, due to technical advances since the early 1990's, the use of the meter, particularly automatic reading of the meter through aM&T systems, has been evolving to be a major tool to assist management of utility consumption and therefore carbon. When any utility meter (gas, water electricity, oil etc) is automatically read and the data analysed as part of an aM&T systems, this effectively turns a meter from being an "idle asset" for fiscal supply management into a "work horse" for carbon management.

In the C&I market, the first strategy to deploy aM&T (The Carbon Trust guides refer) is to automatically read all main incoming utility meters (fiscal meters) to enable quantification and analyses of the total consumptions, and therefore total carbon, which are coming across a consumers boundary. In larger organisations subsequent phases of aM&T sub-metering would be deployed and connected to the aM&T system to assist the pinpointing of wastage and/or inefficiency again a strategy The Carbon Trust Guides endorse but also Part L2 Building Regulations mandate. The monitoring and analyses of all utilities based carbon that comes across the boundary in this way has been recognised as the main management tool for administration of on going carbon saving programmes, it is, for example, the starting process under CRC. Further, as understood from Prospectus, this is recognised as the fundamental reason for the smart metering roll out.

Whilst The Carbon Trust state the application of aM&T will save between 5% and 7% in its own right, we do not believe aM&T should be regarded as simply a carbon saving measure in its own right but the strategic tool above consumption saving measures to manage consumers' ongoing Carbon Reduction programmes.

Many aM&T systems that have been installed on C&I sites since the 1990 and the roll out continues at an accelerating pace. During this time many thousands of tonnes of CO₂ will have been saved due to the enhanced consumption management provided by aM&T; but there is a lot more to do and hence a lot more savings to be made. NB. Did you know DECC completed their head office aM&T in July this year – see their WEB site!

5.3 Large Organisations Often Have Large Supply Points as Well As a Plethora of Smaller Supply Points

The Prospectus divides smart metering roll out into domestic and smaller non-domestic sites – (electricity profile class 3 and 4 and non domestic gas sites with consumption less than 732 Mwh per annum) believing that existing arrangements and recent EU Directives will cater for larger establishments. However, the situation is not as simple as this. Larger organisations, particularly public sector organisations such as hospital, universities and local authorities that have grown their estates over many years, often have a mix of large utility supply points and a plethora of smaller supply points some of which are at small domestic level, for example, a Professors' Flat or a Nurses' Residence etc.

Indeed in some C&I premises the summation of the carbon in utility supply to the plethora of these smaller premises is often greater than the main supply points.

A growing number of these organisations encouraged by CRC and other schemes, are install aM&T across their premises to assist the consumption/carbon management. They are generally installing multi-utility automatic meter reading/data analysis systems; they do not want the confusion and complexity of having different aM&T systems for different utilities, and in doing so need to interface, not only to the main utility supply point meters, but also to the plethora of small premises supply point meters to capture all the supplies coming across their boundary.

Whilst compliance participation to the CRC scheme is governed by the main electricity supply points (COP5 metering) in the subsequent reporting phases the scheme encourages the capture of all carbon coming across site boundaries.

Due to the current Utility supply licence conditions, there are serious barriers to enabling organisations to have aM&T interface to the main fiscal supply meters by which they are charged particularly the smaller supply meters.

5.4 Current Licence Conditions - a Barrier

The current licence conditions were written some time ago based on the meter just being an instrument for fiscal management; they have no recognition or conditions facilitating the meter being automatically read by consumers to effect consumption/carbon management. Therefore, there are no conditions forcing the supply industry to assist consumers with aM&T interface to the meters by which they are charged.

In the past 15 years or so, as aM&T has evolved and customers have wanted interface to “their” fiscal meters, the utility companies (and associated MOP/MAMS) have facilitated interface in an arbitrary, uncontrolled way but it must be said extremely reluctantly; for a customer to get aM&T interface to “their” fiscal meters can be described as “pulling teeth”. Ultimately by sufficient tenacity and pressure by the consumer (or, the consumers aM&T agent) and in a need for the suppliers to limit exposure under their Corporate Environmental Responsibility policy, an interface is facilitated/allowed by the supplier/MOP.

During the evolving years of aM&T it has been extremely difficult to arrange for such meter interfaces; the MPU agreement for interface to National Grid Gas meters was as a result of it taking a bureaucratic 6 months to get simple gas meter interface going through The Supplier Hub and is effectively a short cut to deal directly with the MAM. The MPU agreements for interface to gas meters that have now evolved by the different MAMs are not dictated or covered by any Supply Licence Conditions.

A similar situation arises when a Consumer wants interface to “their” fiscal electricity meter with their multi-utility aM&T system. Due to the poor design of current digital meters used in the supply industry in this regard (interface outputs are behind the meter seal), an external to the meter “CAT box” (Customer Access Terminal) is required to be installed by the supplier/MOP. Again there are no formal, uniform arrangements; to find someone at a supplier who understands what is required is difficult let alone the arrangements for getting a CAT box fitted by the MOP is fraught. Whilst the fundamental reason for the CAT box is a simple meter design issue, the Consumer pays for the fitting of CAT boxes and is willing to do so to get interface to their aM&T system.

aM&T interface to water meters has a similar tortuous path with one water company now attempting to levy an annual charge for the pleasure!

Recently, some suppliers/MOPs jumping on what they see as “a lucrative AMR roll-out band wagon”, are refusing to provide consumers with aM&T interface stating, firstly, they have their own AMR solution, and, secondly, the provision of the consumer aM&T interface is not a Supply Licence requirement.

Ofgem has been made aware of the above situation for many years; they were made aware of it continuously during the years, commencing with formal complaints, when they were Ofgas, continuously during their chairing of the defunct Ofgem/ELEXON New Metering Technology Working Group, of late continuously, due to a stream of cases when they asked for specific cases rather than anecdotal evidence to be brought to their attention and just recently when they were informed of a specific case when a supplier/MOP has refused totally to provide aM&T outputs for an NHS consumer.

In the past Ofgem has simply turned scorn on suggestions to change licence conditions to accommodate suppliers providing meters with the necessary interface outputs for customers and saying “leave it to market forces”. Of late however, and with the knowledge of DECC, the latest remark from Ofgem is all this will be sorted out under the AMR Implementation programme which in the next breath they say will take at least “4 years” to implement.

5.5 Ofgem Polarisation – “Promoting Choice And Value For All Gas And Electricity Consumers”?

The above describes the struggle both in the past and now that consumers have to get aM&T interface to their fiscal meters to effect consumption/carbon management. Ofgem has in the past been totally inept on this issue; fundamentally they just have not recognised, or been willing to

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recognise, that a meter these days is not just for fiscal management. **With the support and knowledge of DECC, amazingly, this regime still carries on in Ofgem now!**

Yet here we have Ofgem E-Serve* espousing in the Smart Metering Implementation Programme prospectus, customer focus, promotion of the meter as an instrument to assist the low carbon economy and meter interface standardisation!

* In the Prospectus OFGEM E-Serve is described as being “responsible for Ofgem’s support and delivery function.

Clearly for the UK PLC Carbon Programme, as a precursor to coping with the transition years between now and deliver of the Smart Metering, the two totally different policy streams existing within OFGEM need aligning and together with joined up thinking within DECC itself.

5.6 Need for Facilitating a Basic, Simple, Minimum Common Meter Interface During the Transition

The Prospectus outlines the development of meter standardisation and in particular a common open interface to meters as fundamentals to the Smart Metering Implementation Programme; a matter we fully endorse. But this is at least *four years* away.

To date meter manufactures have development many complex meter interface methods that are, in summary, simply incompatible with one another.

There is only one basic but simple common multi-utility interface method currently available and this is the basic meter pulse output. It is on the simple meter pulse output by far the majority of current multi-utility aM&T systems are based, including DECC’s own head office aM&T system.

Whilst it is recognised this is inferior to the disparate electronic methods of serial meter interface many of the meter manufacturers have develop, it is the only common multi-utility interface method available and should be provided as a minimum requirement on all fiscal meter until a common standard has been evolved and implemented.

Unfortunately, despite lobbying on this issue to Ofgem over many years it is understood that the specification for the COP 10 meter does not include the pulse output.

NB. Whilst gas and water meters are available with non mechanical methods of flow measurement, it is likely on just pure cost grounds that gas and water meters for the foreseeable future will still be based on mechanical methods of measuring flow with the pulse remaining as the basic meter output; some accessory/gadget being added to provide the common output HAN interface.

6. RESPONSES REQUIRED BY 28TH SEPTEMBER 2010

6.1 Smart Metering Prospectus

Question 3*: Do you have any comments on the proposed approach to ensuring customers have a positive experience of the smart meter rollout (including the required code of practice on installation and preventing unwelcome sales activity and upfront charging)?

Suppliers' business is to supply utilities not to save them. Furthermore, we doubt that the current credibility status of Suppliers (the Big Six for example) will be acceptable by the consumers.

It seems there are two stages, the roll out of the equipment, then the offering of consumption/ carbon saving services to motivate consumers.

Because of our experience in trying to get Suppliers to cooperate with aM&T in the C&I market, I will never believe that either stage is best in the hands of the Supplier or any part of the supply industry. How it seems from the prospectus the former i.e. responsibility for equipment roll out is a fait accompli.

If you want a positive experience by customers, please make sure that others beside the Supply Industry offering value added services can get two level access to meter data as discuss above.

I would support the suggestion of a code of practice to cover the installation of smart meters and the protection of consumers within the process. In particular, we would encourage that the same code of practice be applied in the non-domestic sector to help avoid incumbent suppliers taking undue advantage of any existing customer relationships and the roll out of smart metering. This will help promote a vibrant market for energy efficiency services and require market participants to have diverse and innovative solutions that maximise the delivery of energy savings and carbon reduction.

Question 6*: Do you have any comments on the functional requirements for the smart metering system we have set out in the Functional Requirements Catalogue?

The should be standardised, two level access to meter data, free of any licence controlled access for the customer to engage Others providing value added utility efficiency services. That is, there should be a spare port in the premise with standard access and access at the DCC level both that the consumer can securely control.

During the transition period and before roll out has been completed, (and a better standard meter interface secured), a simple pulsed output should be a mandatory requirement added to the functional requirements for both gas and electricity metering. This will ensure backwards compatibility to many incumbent automatic monitoring and targeting system (aM&T) and building energy management systems (BEMS) used by non-domestic consumers and in-turn help to deliver a competitive market for energy efficiency advice and services.

Whilst special IHDs are proposed, I believe this is a backward step. I cannot understand why "joined up thinking" cannot means that the UKPLC is fully networked on the back of this roll out with Internet access via ubiquitous display systems not being promoted as the main stream method of portraying

both basic meter data and calculated results, graphics etc. Even my old Dad at 94 has mastered the television controller!

Question 7*: Do you see any issues with the proposed approach to developing technical specifications for the smart metering system?

I agree that the technical specifications for the various elements of the smart metering system should be developed with industry. This is important to ensure specifications can be met and to be certain that the current operation of gas and electricity markets and the role of meters for both fiscal and carbon management is understood and accommodated.

However, due to the lack of the lobbying level playing field, is sufficient weight being given to parties who are experienced in offering value added services when these designs are being developed? Or are decisions going to be dominated by suppliers and major meter manufactures?

Question 16*: Do you have any comments on the proposals for requiring suppliers to deliver the rollout of smart meters (including the use of targets and potential future obligations on local coordination)?

I repeat, I do not believe that rollout is best in the hands of the supply industry but I guess matters have gone too far to reverse this – have they?

I think my main concern is that customers get what they want so that they can make the most use of the meter and the meter data for consumption/carbon/cost management. For reasons explained above – this is not what is happening today – see Section 5 above.

Whoever produces the revised licence conditions to facilitate roll out needs to be independent of the Supply Industry so that free thinking is injected which understands the meter as being a workhorse for carbon management and, not tied to when the meter was just an instrument for fiscal management.

Question 17*: Do you have any comments on our implementation strategy? In particular, do you have any comments on the staged approach, with rollout starting before DCC services are available?

My concern is that as has been mentioned in several meetings I have attended, the proposed implementation programme has tended to put the brakes on aM&T role out in the C&I sectors whilst decisions are made.

I believe you should take more notice of what has already been done in the C&I market (aM&T) and promote this by removing the current barriers to customers getting data access to the meters by which they are charged.

By promoting this and in parallel commencing the Smart Meter Implementation Programme, a lot could be gained to allow smooth transition and Carbon Savings would be brought forward as a consequence rather than delayed.

I have provided a major commentary on the Transition Period in section 5 above.

Question 18*: Do you have any other suggestions on how the rollout could be brought forward? If so, do you have any evidence on how such measures would impact on the time, cost and risk associated with the programme?

This question and my reply are somewhat linked to the former question.

Yes, support and encourage the roll out of aM&T and encourage its use to smaller premise by firstly, listening to and supporting organisations who provide such systems, removing all the barriers put in the way of aM&T installation by the Supply Industry and ensuring every meter that is installed from now on (including water meters) has at least a pulse output as a minimum and that the latter remains until some better standard is fully developed and available.

Question 19*: The proposed timeline set out for agreement of the technical specifications is very dependent on industry expertise. Do you think that the technical specifications can be agreed more quickly than the plan currently assumes and, if so, how?

Much current “off the meter” technology can provide the monitoring and presentation requirements now albeit they do not have HAN port capability to control consuming goods in the house.

Why not promote this now and during the transition by extending aM&T into, say, the fuel poor area and district heating systems?

My company has worked on many Housing Association type projects where multi-utility AMR is not possible because Energy and Water suppliers will not play balls and allow common meter data collection that is the used for billing.

Question 20*: Do you have any comments on our proposed governance and management principles or on how they can best be delivered in the context of this programme?

There is not a level playing field. Until this created I fear the supply industry and major meter manufacturers will have disproportional representation.

Action needs to be taken, to counteract this but I do not have a solution others than some funding for organisations like ESTA.

6.2 Statement of Design Requirements

Question 1*: Should the HAN hardware be exchangeable without the need to exchange the meter?

My suggestion is that the meters themselves are very basic and standard so that they do not need to be changed out but “off meter” technology is provided that “does the clever stuff” which can be very simply changed out without any utility supply jeopardy.

Question 2*: Are suitable HAN technologies available that meet the functional requirements?

My company uses various comms methods to provide AMR particularly low power radio (DATA BIRD since 1993) and we have simplex comms only at premises level with GPRS WAN.

When we first specd. DATA BIRD we decided we would not offer and feed back control – we would simply provide monitoring and let Others provide the control systems. With this strategy, we are effectively the “policeman” for the control devices since we report when they have not worked as they should.

I believe that this strategy should be considered in the market in question, leaving a whole new home automation industry to evolve separately but by getting meter data to assist with their control algorithms via the WEB/DCC.

Question 3*: How can the costs of switching between different mobile networks be minimised particularly in relation to the use of SIM cards and avoiding the need change out SIMs?

We use GPRS for WAN and were promised continuous comms with this technology. This has not been found to be the case. We are just minnows in this market and complaints go into the blame game; we have had to develop comms algorithms to cope with the Network failures.

I think with these experiences and issues such as the question should be levelled at OFCOM before any bridges are burnt.

Question 4*: Do you believe that the Catalogue is complete and at the required level of detail to develop the technical specification?

No comment

Question 5*: Do you agree that the additional functionalities beyond the high-level list of functional requirements are justified on a cost benefit basis?

Broadly support the additional functionalities however, we have the following comments:

- The need to store 12 months of interval data. Although not in the list of additional functionalities it is included in the Catalogue. As stated in our response to question 6 from the Prospectus document ESTA has some concerns over this requirement.

- The ability to provide a last gasp report on a power failure for the WAN is included probably because it is assumed to be a no cost feature. However, dependent on the technology employed this may not be the case and will have an associated cost.

Question 6*: Is there additional or new evidence that should cause those functional requirements that have been included or omitted to be further considered?

The pulse output should be maintained as a minimum output on all meters.

As stated in our response to question 6 of the Prospectus we believe the technical specification should be amended to include a pulse output.

Question 7*: Do you agree that the proposed approach to developing technical specifications will deliver the necessary technical certainty and interoperability?

No comment

Question 8*: Do you agree it is necessary for the programme to facilitate and provide leadership through the specification development process? Is there a need for an obligation on suppliers to co-operate with this process?

No Comment

Question 9*: Are there any particular technical issues (e.g. associated with the HAN) that could add delay to the timescales?

No Comment

Question 10*: Are there steps that could be taken which would enable the functional requirements and technical specifications to be agreed more quickly than the plan currently assumes?

No Comment

6.3 Implementation Strategy

Question 1*: Do you have any comments on our proposed governance and management principles or on how they can best be delivered in the context of this programme?

As discussed above, I would like to see a more level playing field created and greater engagement with consumers bodies at an earlier stage in the process. We also feel that some full-time industry representation, funded by the programme would provide for a better regulations and advancement of the technical specifications.

Question 2*: Are there other cross-cutting activities that the programme should undertake and, if so, why?

There are several areas of lack of joined up thinking – see my comments in section 5 above. One particular hobby horse I have strived for for many years is for the inclusion of water metering and the involvement of ofwat. How you save water with aM&T is virtually the same as energy – so multi-utility to include water and heat where appropriate should be included.

Question 3*: Do you agree with our proposal for a staged approach to implementation, with the mandated rollout of smart meters starting before the mandated use of DCC for the domestic sector?

No Comment

Question 4*: Do you have any comments on the risks we have identified for staged implementation and our proposals on how these could best be managed?

Smart and advanced metering will be installed ahead of the mandated roll out. The transition into this period is crucial and market participants operating in this sector need reassurance and changes to ensure these works can continue unimpeded by the programme. See section 5 above.

Question 5*: Do you have any other suggestions as to how the rollout could be brought forward, including the work to define technical specifications, which relies on industry input?

Change licence conditions NOW so that customers get the meter outputs they want – see Section 5 above.

Question 6*: Do you agree with our planning assumption that a period of six months will be needed between the date when supply licence obligations mandating rollout are implemented and the date when they take effect?

No Comment

Question 7*: Do you have any comments on the activities, assumptions, timings and dependencies presented in the high-level implementation plan?

No Comment

Response by [REDACTED]
to Smart Metering Implementation
Programme 28th September 2010



Question 8: Do you have any comments on the outputs identified for each of the phases of the programme?*

No Comment

Appendix One

SHORT PAPER BY [REDACTED] OF ESTA* TO ENCOURAGE DEBATE ON MULTI-UTILITY AUTOMATIC METER READING AND GET IT ON THE NMTWG AGENDA (November 2002)

1. INTRODUCTION AND SUMMARY

Metering and metering systems have advanced rapidly over the last few years particularly on the “Consumer side of the fence”. Relatively low cost, automatic meter readings systems (AMR) are enabling energy and water consumption management techniques to be revolutionised. Things that were not possible are now very possible and, furthermore, at an ever reducing price! Unfortunately when this occurs there is reluctance for institutions to change to adopt the new possibilities. We the British, whilst noted for our innovation, are also noted for our conservatism and reluctance to capitalise on new technology and ideas. As a recent representative for ESTA* on the NMTWG, I see our group has a great responsibility to ensure that new ideas and possibilities in utility metering do not suffer “British Disease” and that our learned body can help to ensure unnecessary barriers to new ideas and concepts in our area of interest are swept aside as rapidly as possible.

My contention is that only one multi-utility AMR system should be installed at each consumer’s premises and that that AMR system, together with appropriate meter data analysis software, can provide automated tools for:

1. - consumption management by the Consumer and **
2. - procurement and supply management by Utilities. ***

Consumption management will lead to efficient use of utilities which will, in turn help the UK economy as well as assist in the achievement of UK carbon emission reduction goals. Post privatisation, energy utility metering for procurement and utilities supply management is somewhat in chaos and the roll out of AMR could be the panacea to this chaos and further facilitate the “choice and value for money” policy of our Government to really be achieved.

My further contention is that for just carbon savings alone, the UK should seek the fastest route to the roll out of AMR in both the major energy users and SMEs sectors where energy and water costs are significant compared to the cost of AMR installation and operation. And, if the Utilities procurement and supply management is enhanced simultaneously, effectively “two birds will be killed with one stone”, this is only an added advantage.

This short paper has been written after my suggestion that the NMTWG offers potential to be the forum to assist in the rapid application of multi-utility AMR and my further suggestion that the subject has a continuous presence on the on-going agenda of our group. Recently, it was agreed between OFGEM and ELEXON that the ELEXON NMTWG should also embrace gas metering. Whilst it is accepted that water metering cannot also be considered directly by the group, it would not make sense to ignore it when considering multi-utility AMR. Hence, as a minimum, links with OFWAT should be forged and invited on the subject.

* Metering and Monitoring Sub Group of the Energy Systems Trade Association

** “utility” in lower case refers to the energy or water being metered.

*** “Utility” in title case refers to the company supplying the energy or water.

Appendix One (cont.)

SHORT PAPER BY [REDACTED] OF ESTA* TO ENCOURAGE DEBATE ON MULTI-UTILITY AUTOMATIC METER READING AND GET IT ON THE NMTWG AGENDA (November 2002)

Below are some of my personal thoughts, experiences and perspectives having been working on metering on the “Consumer side of the fence” for the last twenty plus years taking ideas to products. They may help stimulate debate on the subject.

2. ARE THERE ANY DIFFERENCES BETWEEN AMR REQUIREMENTS FOR THE DIFFERENT UTILITIES?

Stripping away any historic, bureaucratic structures and associated practices, my contention is that fundamentally there is little difference in the AMR requirements between the three common utilities, electricity, gas and water. All rely on a sensing element, a meter, which is specifically designed for the utility being metered. But the AMR system that interfaces to automatically read these meters need be no different for any of them.

Perhaps the only real difference is the frequency of reading for procurement and utilities supply management – large electrical consumers being metered every 30 minutes whereas large gas and water users are generally metered on a minimum of a day period (or, 6 hourly basis, I believe, for Transco Daily Metered (DM) gas meters). This simply reflects the inability of current technology to store electricity in any significant capacity - supply must be balanced with demand.

In any event, for AMR to be an effective tool for utilities consumption management, consumers need high frequency data. Having data at high frequency can be likened to the “view through a microscope” in the medical profession – cell structures can be observed, abnormalities identified and diagnosed which inevitably leads to a remedy. 30 minute frequency data will normally suffice for consumer use although, when a problem has been identified, some consumers like to be able to examine consumption on a higher frequency e.g. water load step testing. Although not my field, I am an engineer and consider that there must be further advantages for Utilities’ procurement and supply management by having a higher than current frequency of reading.

With electronics design and associated microprocessor firmware development, (which has been my field of late), there are only minor cost implications by making AMR devices multi-channel so that all likely utility types can be accommodated.

Furthermore, there is insignificant cost penalty to be paid in terms of hardware cost and Utility company data handling by having all utilities metered at a high frequency i.e. ever 30 minutes. (Monitoring of utilities is a relatively slow data handling requirement compared to many other, existing IT applications of a similar nature)

3. “ON METER” OR “OFF METER” AMR

On the Electricity “Utilities side of the fence” it would appear that only “on meter” AMR applications are used. This is where the site based data logging takes place as part of the meter electronics and both the metrology and

Appendix One (cont.)

SHORT PAPER BY CO [REDACTED] OF ESTA* TO ENCOURAGE DEBATE ON MULTI-UTILITY AUTOMATIC METER READING AND GET IT ON THE NMTWG AGENDA (November 2002)

the data logging is a package all in one box. Code 5 meters are a typical example – hybrids of Code 5 meters now have multi-channel data logging capability. Transco, however, have had their data logging performed in a separate “off meter” box for their DM and telemetried non-DM sites. Transco were very early pioneers in this area but unfortunately the technology and communication strategies deployed by them are somewhat dated and expensive to maintain.

On the “Consumer side of the fence”, with but a few minor exceptions, most AMR applications for utilities consumption management deploy “off meter” data logging. The latter generally gives greater expansion capability to allow the inclusion of sub-metering - a typical major energy user may have 200 sub-meters plus the main incoming Utility meters all being read and automatically analysed every 30 minutes.

It is clear that most of the recent AMR developments in the UK have taken place out of the Utilities arena and on the “Consumer side of the fence”. It is indeed the successful application of AMR for major energy users and their questioning of why their AMR systems data cannot be used for billing, which has led ESTA to be members of NMTWG believing that our members’ experiences may be valuable.

Unfortunately the cost of multi-channel data logging meters (e.g. Code 5 meter hybrids) and the comms methods between them and other meters, at the present anyway, puts them at a disadvantage compared to more basic meters for Utilities procurement and supply management and “off meter” data logging alternatives.

Perhaps the “off meter” advances are one of the primary reasons why BEMCA’s meter manufacturers are not too excited about the COP 8 meter.

4. ROUTE TO RAPID ROLL OUT OF AMR – USE OF PULSE OUTPUTS

If we want rapid roll out of AMR we have got to keep the technology simple, open and easy to apply. Healthy competition in the supply of AMR must also be paramount.

One of the fundamentals here is the need for a common method of interface to the meters. Sophisticated protocols, developed and kept secret by meter manufacturers, are short sighted and selfish. Such actions smack of vested interest and I believe the NMTWG should be actively fighting any such activity and promoting openness for the good of all.

“Encoded” meters, where the interface “message” is the meter register, are very desirable, but without a common protocol their use would stifle the roll out of AMR.

My contention here is that OFGEM/ELEXON must re-examine the technology and promotion of simple pulse outputs as the starting point for rapid multi-utility AMR roll out. This is because the technology is simple and most fiscal electricity, gas and water meters in the major energy users and SME sectors either already have

Appendix One (Cont.)

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pulse outputs, or a simple accessory can be added to provide pulse output capability. Furthermore most consumers' existing sub-meters have pulse output facilities.

My further contention that the use of pulse output interface for AMR can provide very high meter reading integrity, at least far higher than the current continued and archaic practice of manual meter reading. Furthermore, high level, "on the fly" meter data analysis software routines cannot only be an automatic auditing tool for consumption but also automatically check the fitness of both AMR system and the meters themselves.

I do agree that in parallel to the rapid roll out of AMR using pulse outputs we must continue to explore and unify the encoded meter route and ensure flexibility of these types of meters as they are deployed.

5. ROUTE TO RAPID ROLL OUT OF AMR – START WITH MAJOR ENERGY USERS THEN MIGRATE THROUGH SMEs TO THE DOMESTIC MARKET – GET THE CONSUMERS TO OWN THEIR AMR SYSTEMS

In most major energy users there is a business case for AMR on the basis of energy and water consumption savings alone. Therefore we should roll out AMR initially to assist with consumption management and, rather like the opening up of the energy supply markets, start with the largest users. We should then migrate the concepts down to SMEs and then finally down to the domestic market.

By applying such a strategy it is likely the technology and infrastructure will largely be in place to drive down the cost of rolling out AMR to smaller consumers.

Furthermore, since the major energy users can afford such systems now, the use of Consumer owned or leased AMR should be encouraged rather than Utility owned AMR since this will go a long way to minimise the "stranded assets" issue.

ESTA is lobbying the DTI, Carbon Trust etc. to point out this new way for energy and water management.

6. "ON SITE" OR "OFF SITE" DATA MANIPULATION

This is a further contentious subject for debate. At present, in the electricity market, meters are being deployed with complex tariff abilities built in to each meter. Unfortunately, in the competitive market tariffs are getting more and more complex and taxing the intelligence down at the meter and this must have an effect on their costs. Furthermore, many consumers didn't even understand "contra rotating dial" meters; to get them to interrogate some of the current digital electricity meter registers through a single window display is even more of a challenge!

Appendix One (cont.)

SHORT PAPER BY [REDACTED] OF ESTA* TO ENCOURAGE DEBATE ON MULTI-UTILITY AUTOMATIC METER READING AND GET IT ON THE NMTWG AGENDA (November 2002)

Gas fiscal metering for major gas users deploys complex and expensive pressure, temperature and altitude correctors (now called “converters”) at each meter attempting to apply Boyle’s Law and provide the consumer with a corrected meter reading at the meter. With continuous IT based communication there are considerably less expensive and more flexible ways of achieving the same ends by only uplifting crude meter data through AMR systems and manipulating the data by top end computers.

The generation of shadow “eye ball” meter readings from pulse meter AMR data by working from an initial manual reading, is a typical application of “off meter” data manipulation.

My contention is that we should gear up for “off meter” data manipulation and slowly drop trying to be too clever at the meter.