## IS THIS FOR ME?

Are you a TNA CIC or TECs Ltd. Member who doesn't already have Smart Meters installed and is wondering if you should?  There are lots of worrying things said about them, are these true and what possible benefits could these meters provide?

If you already have a smart meters or are about to get some installed, are you wondering how you can make best use of this 'smart' technology?

Here is a quick overview followed by more detailed information on the two questions above.  There is also an appendix to explain many of the concerns expressed by people and another to explain how to become a smart consumer.  Other general information is also included.

## A QUICK OVERVIEW

### What are Smart Meters?
The only 'smart' part in the meter itself is that it has a connection over which it can send meter readings it collects (e.g. electricity readings will be taken half hourly).  The latest versions can also accept software upgrades, so they are 'programmable' should new features be needed.

The smart meter connects to centralised systems via the mobile telephone network (directly or via an extension if the signal is not available at the meter location).

Smart meters also connect to an In-home Display device either by cable or wireless (e.g. WiFi).  This device will display both real-time as well as historic consumption information.

The majority of the 'smart' parts are actually done by the centralised system or your In-home Display.  Getting access to the raw meter readings through the internet gives the home owner every conceivable analysis they'd wish to perform.

You should remember that the smart meter and In-home Display will not in themselves make your energy usage any 'smarter'.  These will not give you much more information than you can already get, it's just that the information is more accurate and easier to work out.

### Should I get Smart Meters for Gas and Electricity?
The simple answer is yes, most definitely.  You'll be paying for it whether you have them installed or not.  You may even have to pay again if they become compulsory in the future!

Please see the following pages to get a more detailed understanding for this conclusion. Also how to become a 'smart' energy consumer.

## MORE DETAILS

### What is driving all this, why all the fuss?
It presents an opportunity to reduce prices and costs:
- Energy costs are becoming more time and source sensitive.
- Automation reduces operational costs as it replaces labour.

### What are the benefits to the consumer?
Many benefits are claimed, the following is a list of the more realistic ones:
- Potentially greater awareness of Energy consumption leading to savings.
- Greater accuracy of billing, potentially negligible amounts in credit/debit.
- Opportunity to take advantage of more off-peak periods to benefit from reduced unit rates, for those who can.  Half hourly settlement is Ofgem's stated long term objective.
- Greater convenience in terms of meter readings and more flexible payment arrangements.

### What are the benefits to the providers and distributors?
As stated above the primary drivers are cost reduction in:
- Meter readings and more integrated/automated billing systems.
- Greater efficiencies in matching generation costs to consumption prices (this indirectly favours intermittent Renewables).
- Faster location of network faults.
- Some may see this as an opportunity for increased revenue from consumers who don't make use of the new pricing models.

### Any other benefits?
More widely, there are benefits to government, industry and consumers:
- Significant increase in accurate data on energy generation/consumption, an opportunity for evidence-based policy.
- Makes peer-to-peer trading of energy technically more feasible, but this needs a new regulatory regime.
- Provides opportunities for new innovative services and products, the 'smart' energy network.

### Are there any downsides and risks?
There are plenty of stories out there to make one believe smart meters are a cynical move to exploit consumers or to spy on them.  In reality the more significant concerns are:
- At a cost of ~£11bn, this upgrade programme will need several years to pay for itself even on the government's optimistic estimates of £100 p.a. average saving per household.
- There are 3 types of smart meters, SDM, SMETs1 and SMETs2.  All new meters should be Smart Metering Equipment Technical Specifications (SMETs) compliant, 2018 will see the rollout of the latest SMETs2 meters, see appendix 3 for more info.

The appendix explains several of the urban myths on why we should not have smart meters.

## Appendix 1 : HOW TO BECOME A 'SMARTER' ENERGY CONSUMER

A smart meter will not on its own make you a 'smart' energy consumer!  You have to make use of the information this technology gives you to take advantage of it, if you don't want to end up paying the higher tariffs.

There are some basic steps you need to take.  Without doing all of these and developing your understanding, you will remain a 'normal' energy consumer.

### Find out what your current energy usage is

This can be annual, monthly, weekly or daily, ideally a combination of all.  A smart meter makes this a lot easier and more accurate than before.

### Decide what it is you want to achieve (your goal)

Whether this is minimising your bills or reducing your carbon footprint.  Be ambitious, but also prepared to change this in line with the effort you are prepared to put in.  You can compare your energy consumption with other similar households.  The next two steps will give you the feedback to become more realistic about what goals are achievable.

### Work out what is using your energy (break it down)

We all prefer to put in the minimum effort for the biggest return, unless we are forced to or very keen to achieve our goals.  So you need to work out what devices and behaviour is using the biggest chunk of your total consumed energy.  Smart meters go some way to helping with this, but other things will be needed if you want to take the guesswork out.  Help is available from Dr Watt & Wendy Washer!

### Keep monitoring and TAKE ACTION

The hardest thing for most people is to actually do something and change things.  There is little incentive to do this while the household budget is relatively affordable and Climate Change is just another worry the government should be dealing with.
Repeating these steps gives you the feedback to adjust your goals and the feeling of success, essential in order to maintain your 'smart' behaviour.

## Appendix 2: MYTH BUSTING

There is a lot of information out there regarding concerns and risks associated with the roll out of smart meters.  Here is a selection of these and some explanations of their accuracy, relevance and likely impact on household energy consumers.

**Meters are not as accurate/reliable**: Digital smart meters are at least as accurate as older analogue meters.  In most cases they will be more accurate, as they are replacing older technology.  In the case of electricity meters, they will also be able to measure the consumption impact of 'inefficient'  loads.
Like any device, they can and do fail, but the likelihood is less than most other domestic devices and would be replaced free of charge as they are not owned by the consumer.

**Detrimental health impacts**: The additional mobile signals generated will be some distance from any residents, so that their impact is significantly lower than any individual existing radiation source.  WiFi or similar signals used to communicate with the In-home Display device can be avoided by using a cable connection or not having this facility.

**Data is less secure**: Once the consumption data is collected it is subject to the same protection and regulation that banking records are subject to.  Moreover, the data itself is not as sensitive as other personal data already kept by utilities.

**Privacy is lost**: The additional data being collected is similar to data collected on any commercial transaction we undertake.  It contains information on the timing of our energy usage, but not the detail of what we use this energy for, only we could correlate this!
Even if the data is illegally obtained by a third party, as is sometimes the case when this is unofficially 'sold', the only possible consequence are unsolicited sales contacts and hoax callers.  Becoming 'smart' yourself will help you spot these a mile away.

**Provides information to burglars**: Intercepting real time data or even historic occupancy patterns to establish occupancy is feasible, but only with highly sophisticated techniques and knowledge.  Burglars are more likely to use much easier existing methods to establish occupancy. Even if a utility's billing system is compromised and behaviour patterns are accessed, a burglar cannot rely on this information to ensure no one is in the home in the future, they would still need to check at the time.  However, if someone is concerned about this they can limit the data processing undertaken by the utility to exclude daily patterns.

**No benefit to the consumer**:  The benefits are explained earlier, but they are only potential benefits which need our engagement.  Without this engagement and at least understanding what smart meters tell us about our energy consumption, we may well lose out and certainly not get any benefits.

**A fire risk**:  Any electrical device has an associated fire risk, poor installation is more likely to be the cause rather than a manufacturing fault.  However the probability of a fire risk caused by a smart meter is insignificant compared to most household devices (especially cookers, fridges, toasters, microwaves, etc.).  The probability of a 'significant' incidents primarily due to a poor installation of smart meters so far is 0.0006% (18 out of 3 million installations).

## Appendix 3: GENERAL INFORMATION

Useful links:

- Smart Energy GB https://www.smartenergygb.org;
- Energy Savings Trust-http://www.energysavingtrust.org.uk/

An interesting link:

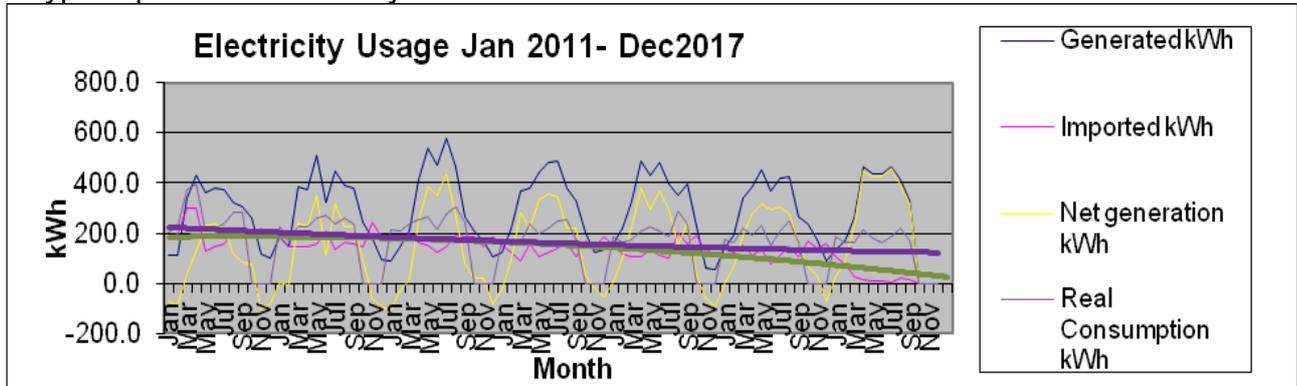- Stop Smart Meters UK - http://stopsmartmeters.org.uk/

A typical in-home display device:



A typical utility's on-line analysis of data collected:



A typical personalised analysis of data collected:

**Appendix 4: WHICH SMART METER?**

Although the latest SMETs2 meters were available in early 2017, the Data Communication Company (DCC) only just got its act together connecting these meters later that year.  There are a few trials for installing this latest technology, but unlikely to be offered till 2018.  Exactly when these will be rolled out depends on your utility.

Some Utilities are still installing the SMETs1 meters, presumably because they have remaining contracts with suppliers/installers.  These meters will work and provide you with the benefits already outlined, however some Utilities (mainly smaller ones) have not set up their operations to connect to these via the GSM network, mainly because they are waiting for the DCC setup so they operate only one contract and save on costs.  So if you have a SMETs1 and want to switch to these utilities before they roll out their SMETs2 meters (i.e. in the next year or longer if there are teething problems) you would have to submit your meter readings manually (usually over the internet).  Your SMETs1 In-Home Display will still work, so those features and ease of meter reading remain, but the remote communication through the GSM network for SMETs1 meters will not be used by those utilities that do not support them.

If you are offered a SMETs1 in the next few months it is worth taking up that offer as you can get started with your monitoring and data collection.  If the DCC and rollout of SMETs2 takes off in the first half of 2018, it will be better to wait provided your utility is one of those rolling it out or you switch to one that does.  If you end up with a SMETs1, you will be amongst millions who can make use of their 'smart' benefits, eventually all the meters will be upgraded free of charge.

Please contact Dr Watt if you need more specific information.  You can also go to the following website which has a lot more technical details.
http://www.smartme.co.uk/index.html