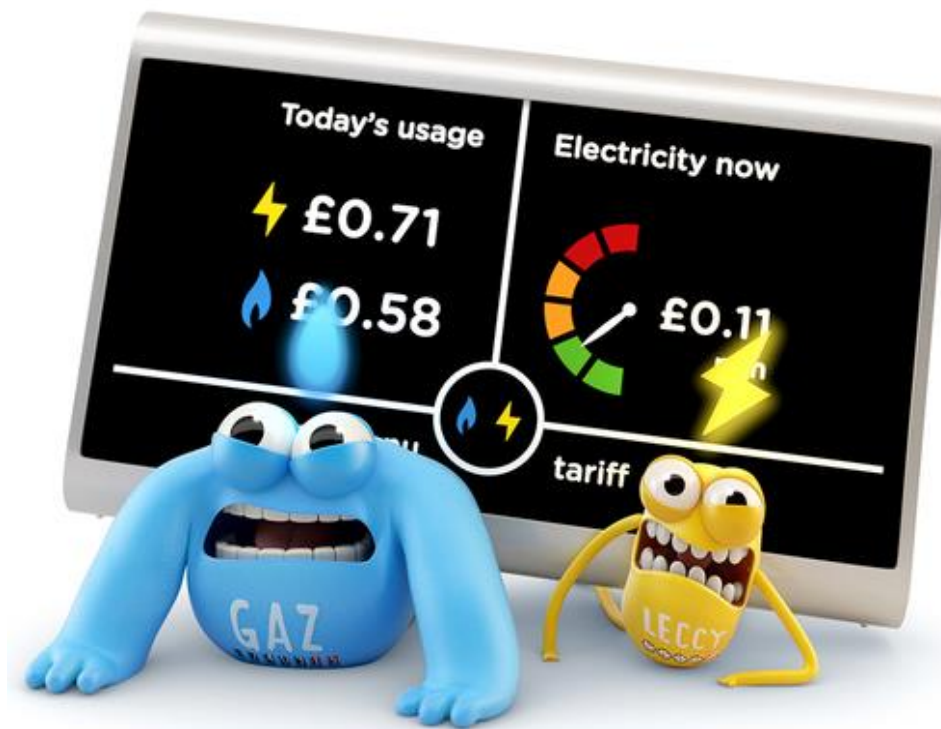




A BRITISH INFRASTRUCTURE GROUP (BIG) REPORT

Not So Smart



A comprehensive investigation into the roll-out of energy smart meters

Chaired by
The Rt Hon.
Grant Shapps

–
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–
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¹ Front Cover: Smart Energy GB, 'Campaign Mascots: Gaz and Leccy', Campaign resources available [here](#)

Who are the British Infrastructure Group of Parliamentarians?

As Chair of the British Infrastructure Group of Parliamentarians (BIG), I am pleased to introduce our latest report entitled Not So Smart. BIG is a cross-party group dedicated to championing better infrastructure across the United Kingdom (UK). Reports published by BIG take the form of either campaigns backed by multiple MPs and Lords, or stand-alone research briefings. The support of a Parliamentarian is distinct to an individual publication. Each BIG report focuses on a different aspect of national infrastructure, identifying shortcomings and setting out measures for improvement.

Not So Smart investigates the ongoing roll-out of 53m energy smart meters to 30m homes and small businesses by the end of 2020. This report, which has the support of 93 Parliamentarians, has found that the planned £11bn roll-out has been plagued by repeated delays and cost increases, with suppliers now almost certain to miss the 2020 deadline, and programme benefits likely to be slashed even further. Moreover, although the entire programme has been funded by customers through higher energy bills, unlike energy suppliers themselves, they are not presently guaranteed to see the majority of the savings that do materialise.

The roll-out is consequently at serious risk of becoming yet another large scale public infrastructure project delivered well over time and budget, and which fails to provide energy customers with a meaningful return on their investment.

Despite this, energy smart meters retain the ability to provide benefits for all connected parties, and are an important facilitator for the transition towards a smart grid. It is therefore in the core interest of both the government and industry, as well as energy customers, to see that the roll-out succeeds.

This report therefore calls on the UK government to immediately review the progress of roll-out, and intervene to tackle its points of failure and risk. It accordingly provides a number of recommendations for the government, Ofgem and suppliers to implement to ensure the roll-out delivers benefits for all parties involved, and the consumer in particular.

With its recommendations implemented and continued close oversight, BIG believes that the roll-out can successfully help to usher in a new wave of smart technology, and fundamentally transform energy use in the country.



The Rt. Hon Grant Shapps MP

Chair of the British Infrastructure Group of Parliamentarians (BIG)

Co-signatories of Not So Smart

Rt. Hon Grant Shapps MP	Welwyn Hatfield
Rt Hon Ed Vaizey	Wantage
Bill Wiggin	North Herefordshire
Nigel Mills	Amber Valley
David T. C. Davies	Monmouth
Sir David Amess	Southend West
Matt Western	Warwick and Leamington
Rt Hon Frank Field	Birkenhead
Giles Watling	Clacton
Martin Vickers	Cleethorpes
Charlies Elphicke	Dover
Mark Pawsey	Rugby
Derek Thomas	St Ives
Steve McCabe	Birmingham, Selly Oak
Sir Henry Bellingham	North West Norfolk
Sir Roger Gale	North Thanet
Rt Hon Sammy Wilson	East Antrim
Jonathan Djanogly	Huntingdon
Graham Stringer	Blackley and Broughton
Laura Smith	Crewe and Nantwich
Sir Edward Leigh	Gainsborough
Sir Graham Brady	Altrincham and Sale West
Damien Moore	Southport
Rt Hon Keith Vaz	Leicester East
Mary Glindon	North Tyneside
Ronnie Campbell	Blyth Valley
Stephen Kerr	Stirling
Adam Afriye	Windsor
Rt Hon Caroline Flint	Don Valley
Bim Afolami	Hitchin and Harpenden
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Johnathan Lord	Woking
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Jim Shannon	Strangford
Chris Bryant	Rhondda
Nigel Evans	Ribble Valley
Rt Hon Andrew Mitchell	Sutton Coldfield
John Lamont	Berwickshire, Roxburgh and Selkirk
Martin Docherty-Hughes	West Dunbartonshire
Rt Hon Sir Mike Penning	Hemel Hempstead
Carol Monaghan	Glasgow North West
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Ivan Lewis	Bury South
Kate Hoey	Vauxhall
Ben Lake	Ceredigion
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Royston Smith	Southampton Itchen
Mark Pritchard	The Wrekin
Martyn Day	Linlithgow and East Falkirk
Richard Bacon	South Norfolk
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Charles Walker OBE	Broxbourne
Rt Hon Norman Lamb	North Norfolk
Nadine Dorries	Mid Bedfordshire
Neil Parish	Tiverton and Honiton
Sheryll Murray	South East Cornwall
Dr Philippa Whitford	Central Ayrshire
Andrew Bridgen	North West Leicestershire
Rt Hon Alistair Carmichael	Orkney and Shetland
Chris Law	Dundee West
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Roger Godsiff	Birmingham, Hall Green
Ruth Smeeth	Stoke-on-Trent North
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Drew Hendry	Inverness, Nairn, Badenoch and Strathspey
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Mark Garnier	Wyre Forest
Rt Hon Ken Clarke CH QC MP	Rushcliffe
Bob Blackman	Harrow East

The Lord Beecham
 Rt Hon the Baroness Featherstone
 The Lord Balfe
 The Lord Haskins
 Professor the Lord Broers
 The Baroness Maddock
 The Lord Teverson
 Rt Hon The Lord Dholakia OBE DL
 The Lord Mackenzie of Framwellgate OBE
 The Baroness Lister of Burtersett CBE
 The Baroness Fookes DBE
 Rt Hon the Lord Turnbull KCB CVO
 The Lord Vinson LVO DL
 The Baroness Young of Old Scone
 The Baroness Bakewell of Hardington Mandeville MBE
 The Viscount Ridley
 The Lord Walker of Aldringham GCB CMG CBE DL
 Rt Hon the Lord Clark of Windermere DL
 Rt Hon the Lord Selkirk of Douglas QC
 The Lord Stoddart of Swindon
 The Lord Rotherwick
 General the Lord Richards of Herstmonceux GCB CBE DSO

Executive Summary

When the government began to make preparations for the roll-out of energy smart meters in 2008, the programme was advertised as having no downsides. Smart meters would reduce overall and peak-time consumer energy use, supplier overheads, network operator costs, and facilitate the transition to a more renewably powered smart grid. Customer bills would therefore fall, without impacting upon supplier profits, and the associated reduction in carbon emissions would help the government meet its climate change targets.

After initial delays, in May 2013 the government set a revised roll-out timetable to install 53m smart meters in 30m homes and small businesses by the end of 2020.² Having conducted a comprehensive investigation into the roll-out however, BIG has significant concerns over its progress. It has consequently come to not only believe that the 2020 target will be missed, but question whether the programme will even deliver meaningful returns for consumers at all. Among the issues of particular concern, it has found that:

Technological

- **Obsolete meters are still being rolled-out:** Suppliers are still only rolling out obsolete 1st generation smart meters, well past their November 2016 deadline. They will in fact continue to offer these meters until October 2018,³ and install them into January 2019.⁴
- **More than half of smart meters 'go dumb' after switching:** Of the 1m customers with a smart meter who annually switch provider, over half are left with a meter which has lost its smart features.⁵ This includes automatically sending data to suppliers and displaying that use in currency. This both disincentivises switching, and makes it more difficult.
- **Mobile 'Not Spots' make meters 'dumb':** These meters are also reliant on existing mobile networks to send data. They accordingly do not work in areas with poor signals, and so again revert to 'dumb' mode. The number of meters operating in 'dumb' mode could be as high as 10%.⁶ (Note: Mobile Not Spots was the subject of a previous BIG Report available [here](#))
- **New smart meters delayed again:** 2nd generation meters were planned to be rolled-out in early-mid 2016, in time for the November 2016 deadline. However, by January 2018 only 450 were installed, with just 80 in a live environment, and their testing ongoing.⁷

Commercial

- **Working meters are needlessly replaced:** Exploitative commercial agreements mean that new suppliers will often replace an existing smart meter, even when they can receive data from it.⁸ This further increases roll-out costs, and could well continue throughout the roll-out of 2nd generation meters.⁹

² DECC, '[Policy Paper: Smart Meters Programme](#),' 10 May 2013. This roll-out is taking place in Great Britain only, Northern Ireland will eventually have its own smart meter roll-out programme.

³ BEIS, '[Decision on SMETS1 and Advanced Meter Exception end-dates](#),' 18 January 2018.

⁴ Smart Energy GB, '[Smart Meter Rollout National Campaign Update: Spring 2018](#)'. April 2018.

⁵ BEIS, '[Maximising interoperability for first generation \(SMETS1\) smart meters](#)', 17 April, 2018, p5.

⁶ BEIS, '[Smart Meters Statistics: Quarterly Report to end December 2017](#),' 27 March 2018. The difference between the number of meters installed and those presently operating in 'live mode'.

⁷ BEIS, '[Written Question – 125235](#)', 01 February 2018.

⁸ This is referred to as a lack of 'Commercial Interoperability'.

⁹ Lickorish, Dereck, '[Supplementary Written Evidence: SMB06](#)', Smart Meters Bill 2017-19 Committee, 22 November 2017.

- **Suppliers already behind schedule:** As only 11.06m smart meters were operational by the end of Q1 2018, suppliers have under 3 years to offer and potentially install up to 41m more of them.¹⁰ This equates to almost 1.3 million meters a month. By April 2018, large suppliers were though only managing to install around 420,000 each month.¹¹
- **2020 target likely to be missed:** A lack of supplier installation capacity meant that by mid-2017, only 18% of willing and eligible customers actually had a smart meter installed within 6 months. By late 2018, this will only increase to 22%.¹² These constraints mean suppliers are almost certain to miss the 2020 roll-out target.

Economic

- **Initial savings have more than halved:** Delays and cost increases have seen the programme's net benefit fall by £1.55bn by 2016 alone.¹³ The expected saving on an annual dual fuel bill in 2020 has accordingly fallen from £26 to just £11.¹⁴
- **Costs continuing to increase:** Since 2016 though, the roll-out has been beset by further delays and cost increases, with installation costs alone found to be £1bn higher than anticipated.¹⁵ While customer bills accordingly increase, reports state that with further delays final programme costs could even exceed its £16.7bn gross benefit figure.¹⁶
- **Predicted savings are inflated:** The government maintains that consumers will see savings of £300m in 2020, rising annually to 2030. BIG analysis of the latest cost-benefit calculations have though found them to be not only outdated, but based on a number of questionable assumptions of personal, industry and environmental savings.

Regulatory

- **Relying on the BIG 6:** Supplier costs savings will account for 49% of the programme's entire £16.7bn gross benefit figure. The government is though relying on "competition in the industry" alone to ensure these savings are actually passed on to customers.¹⁷
- **Industry passing the buck:** If suppliers fail to meet their roll-out targets, they face fines of up to 10% of their turnover.¹⁸ There are though no safeguards in place to ensure these fines, or perpetually rising programme costs are not simply passed on to customers through higher bills and lower savings.
- **Suppliers using scare tactics:** As the pressure on suppliers to meet the 2020 target increases, they have been known to use 'scare tactics' to convince customers to accept a meter. These include stating bills would otherwise go up, smart meters are compulsory, current meters are unsafe, and booking installations without a customer's consent.
- **No unified data control point:** There is no single unified way for consumers to check who is accessing their energy data, when and why they did so, and to stop that access.

¹⁰ BEIS, '[Smart Meters Statistics: Quarterly Report to end March 2018](#)', 31 May 2018.

¹¹ BEIS, '[Smart Meters Statistics: Quarter 1 2018](#)', 31 May 2018, Tables 1a and 3a.

¹² Smart Energy GB, '[Written Evidence: SMO3](#)', Smart Meters Bill 2017-19 Committee, November 2017.

¹³ Programme net benefits were predicted as £7.3bn in 2011, and £5.75bn in 2016, see: DECC & Ofgem, '[Smart Metering Implementation Programme: Response to Prospectus Consultation](#)', March 2011, p5. & BEIS, '[Smart Meter Rollout Cost-Benefit Analysis: Part I](#)', August 2016, p3.

¹⁴ The average saving on a bill in 2020 was estimated in 2014 to be £26, and by 2016 to be just £11, see DECC, '[Smart meter roll-out for the domestic and small and medium non-domestic sectors \(GB\)](#)', 30 January 2014, p11. And, BEIS, '[2016 Cost Benefit Analysis](#)', p13

¹⁵ Choi, Chris (ITV). '[Think your smart meter is free? Think again](#)', 02 February 2017.

¹⁶ Bischoff, Victoria (Daily Mail). '[REVEALED: The £9bn extra cost of smart meters](#)', 28 February 2018.

¹⁷ Public Accounts Committee (Commons), '[Update on preparations for smart metering](#)', 10 September 2014, p3,6 and 10.

¹⁸ Thomas, Nathalie (Financial Times), '[Energy companies raise alarm over £11bn smart meter rollout](#)', 16 July 2017.

Recommendations

BIG fully supports the rationale behind the energy smart meter roll-out, and the goals it seeks to achieve. Without urgent action however, it believes the roll-out could become yet another large scale public infrastructure project delivered well over time and budget, and which fails to provide the expected consumer benefits. Among the steps it believes need to be taken to ensure the programme results in success are:

- **Review the timetable and economic case:** While maintaining the 2020 date, the government must recognise the target will be missed and outline fully costed scenarios for the likely event it is met in 2021 or 2022. The methodology used in a new cost-benefit analysis should importantly also be adjusted to outline the savings which customers can realistically, and not theoretically expect to see through their bills.
- **Fast-track 2nd generation meters:** BEIS and Ofgem should ensure that suppliers begin the mass production and installation of 2nd generation meters immediately. Their roll-out should reach peak levels before the October transition deadline, to prevent further delays and the continued installation of outdated meters.
- **Ensure commercial savings are passed on:** The government should not only explicitly task Ofgem with this, but must also be proactive in regulating the meter asset market to prevent the needless replacement of functioning meters.
- **Include roll-out costs in price reviews:** Ofgem annually reviews wholesale energy costs to see if supplier price rises are proportionate. It should also review roll-out costs going forward and if necessary intervene, to protect customers from ever increasing costs, and fines simply being passed on.
- **Recommend the best tariff:** Suppliers should be made to utilise the usage data they now possess to annually recommend the best tariff a customer could be on.
- **Limit back-billing:** Suppliers should not be allowed to ‘back-bill’ customers for energy used more than 6 as opposed to 12 months ago, and allow them to use payment plans.
- **Automatic compensation:** Customers should be automatically compensated for each day their meter malfunctions and provides an incorrect reading.
- **Time of use tariffs:** BEIS and Ofgem should work with suppliers to introduce these tariffs as soon as possible. They must though also ensure that the price of traditional tariffs does not rise as a result, that peak-time prices are not made disproportionately high, and that they are not used to evade an energy price cap.
- **Change and enforce license conditions:** Supplier license conditions should be amended to outlaw the use of such ‘scare’ tactics, with them facing more stringent penalties for breaching them. Suppliers should also not be allowed to unfairly increase the bills of those who refuse the offer of a smart meter.
- **Create a data Control Point:** Customers should have access to a unified data ‘control point’ where they can not only see who is accessing their smart meter data, when they did so, and why, but also immediately query and stop access to that data.

Chapter 1: The Plan

What makes these meters 'smart'?



Image 2: A Typical Smart Meter Set.²⁰

The primary difference between traditional and 'smart' energy meters is that smart meters are capable of "two-way communication" with a supplier. They can both send energy use data to, and receive information from suppliers e.g. tariff updates.¹⁹ A typical smart meter set will comprise of both a gas and electricity meter, a communications hub and an In Home Display (IHD). They also have the ability to communicate with but not control other smart appliances.

Why are they being rolled-out?

In addition to providing accurate bills, it is anticipated that clearly displaying a customer's near real-time energy use and enabling 'time of use' tariffs will drive behavioural changes, which will result in reductions in overall and peak-time energy use.²¹ By facilitating greater engagement with their energy use, smart meters are also meant to assist customers to switch providers and secure better deals.

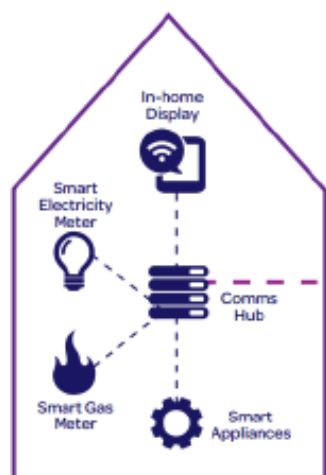


Image 3: Smart Meter Home Network.²⁴

The stated reduction in energy use, particularly at peak-time, would help network operators to better manage demand upon the grid, tackle outages more efficiently, and better target investment.²² Generation and distribution costs would accordingly fall. Better management of energy use patterns would also facilitate the transition towards a more renewably powered smart grid.²³

For energy suppliers, smart meters would remove the need for meter reading and disconnection visits, and reduce expenditure on customer service issues e.g. estimated billing complaints. They are also meant to make the switching processes simpler and so cheaper, and allow for better detection of energy theft. Smart meters would therefore not only reduce the amount suppliers pay network operators, but also reduce their own overheads.²⁵ Suppliers would therefore be able to pass on savings to consumers, without it reducing their profits.

Finally, by facilitating a reduction in energy use and transition towards a greater use of renewable energy, smart meters would play a key role in ensuring the government meets its binding carbon emission and climate change targets.²⁶

¹⁹ Ofgem, '[Factsheet 101: Smart metering - what it means for Britain's homes](#)', 31 March 2011. SMETS 1 and 2 meters must have the ability to send and receive data every half an hour. Advanced Meters need only be able to send data, and will be covered later in this paper.

²⁰ uSwitch, '[Smart Meters Explained](#)'.

²¹ Time of Use Tariffs only apply to electricity use. There are 2 types of Tariffs: 'Static' where the price for peak and off-peak use is set according to the time of day, and 'Dynamic' where the price of energy fluctuates in relation to energy demand. They are needed to facilitate the more efficient use of energy and 'Demand Side Response' shifts in peak time use.

²² BEIS, '[2016 Cost Benefit Analysis](#)', p11

²³ Ibid, p11.

²⁴ House of Commons Library, '[Briefing Paper No 8119: Energy Smart Meters](#)', 20 Oct 2017, p21

²⁵ BEIS, '[2016 Cost Benefit Analysis](#)', p11

²⁶ Science and Technology Committee (Commons), '[Evidence Check: Smart metering of electricity and gas](#)', 24 September 2016, p27.

Legislative Background

EU Directives

The smart meter roll-out had its origin in the 2006 EU Directive [2006/32/EC](#). This requested that where it was “*technically possible, financially reasonable and proportionate*” in energy saving terms, member states should ensure consumers were provided with “*competitively priced individual meters*”.²⁷

This was followed up in 2009 with EU Directives [2009/72/EC](#) and [2009/73/EC](#). The first related to electricity and stated “*where the rollout of smart meters is assessed positively, at least 80% of consumers should be equipped with intelligent metering systems by 2020*”.²⁸ The second related to smart gas meters, and required member states prepare their own delivery timetables.²⁹

Importantly though, Annex 1 of both directives stated that roll-outs in member states would be ‘*subject to assessment*’, and that if a country found it was not cost effective to roll-out smart meters, then it was free to choose not to do so. This was the case with Germany, Portugal, Belgium and a handful of other EU nations.³⁰

UK Legislation

The first UK proposals on a smart meter roll-out came in the 2007 Government White Paper ‘*Meeting the Energy Challenge*’. It stated the government was consulting on a roll-out of smart meters to businesses, and that trials for smart meter use in homes were being undertaken. It also added that subject to trial results, the government intended “*to work with energy companies to roll these out to households over the next 10 years*”.³¹

The following year the Energy Act 2008 was accordingly passed, which gave the Secretary of State “*broad powers to implement and direct the roll-out of smart gas and electricity meters*” until November 2013.³²

In its ‘*Programme for Government*’, the new Coalition Government stated it would not only continue the roll-out, but go further and work to establish a ‘smart grid’.³³ It therefore extended the Energy Secretary’s powers to 2018, through the Energy Act 2011, and further amended industry licence conditions.

Two of the most important license condition changes subsequently made by the government were that energy suppliers now only had to “*take all reasonable steps*” to roll-out smart meters to all their customers by 31st December 2020, and had to provide

²⁷ European Parliament and Council, ‘[Directive 2006/32/EC](#)’, 05 April 2006, Article 13.

²⁸ European Parliament and Council, ‘[Directive 2009/72/EC](#)’, 13 July 2009, Annex I.

²⁹ European Parliament and Council, ‘[Directive 2009/73/EC](#)’, 13 July 2009, Annex I.

³⁰ European Commission Joint Research Centre, ‘[Smart Metering deployment in the European Union](#)’, Updated 24 April 2018.

³¹ DTI, ‘[Meeting The Energy Challenge: A White Paper on Energy](#)’, May 2007, p9-10.

³² HoC Library, ‘[Energy Smart Meters](#)’, p24

³³ HM Government, ‘[The Coalition: our programme for government](#)’, May 2010, p16.

regular progress reports to Ofgem.³⁴ Other notable license condition changes relate to restricting supplier sales activity, provision of advice and information for customers, and consent for certain uses of energy data.³⁵

The current Conservative Government's [Smart Meters Bill 2017-19](#) was given Royal Assent on 23rd May 2018. It again extended the Secretary of State's powers to direct the roll-out to 2023, and legislates for a 'special administrative regime' for the DCC, in the unlikely case of its insolvency.

Conclusion

It is therefore clear that while the smart meter roll-out was first proposed by the European Union, successive UK governments have sought to exceed the minimum 80% roll-out requirement stipulated by the EU.

Importantly though, customers are under no formal or legal obligation to accept a smart meter.³⁶ Suppliers also do not have to have installed 53m meters by 31st December 2020. Rather they must display to Ofgem that they have offered a meter to all their customers and taken "*all reasonable steps*" to complete the roll-out by the deadline.³⁷

³⁴ HoC Library, 'Energy Smart Meters', p24

³⁵ Ibid, p24.

³⁶ BEIS, '[Smart meters: a guide](#)', 04 January 2018.

³⁷ Suppliers will not be allowed to simply send all of their customers a leaflet offering them a smart meter just before the deadline. Each offer of a meter must be sent with a reasonable chance that it will be installed within 6 months from the offers acceptance.

The Roll-Out Timetable

As the roll-out of energy smart meters was a project which looked to utilise developing and untested technology, it was split into 2 stages.

The Foundation Stage

This trial phase saw a limited number of 1st generation (SMETS 1) smart meters rolled-out across Britain. The intention was to put in place a regulatory and commercial framework for the main roll-out, and uncover any technological or commercial issues which needed to be addressed before it began.

For this phase each energy supplier developed their own commercial arrangements with Meter Asset Providers (MAPS) to develop and install meters, and with mobile companies to utilise their respective networks. Under proposals outlined in March 2011, the foundation stage was set to be completed by 2014, at which point the main roll-out would begin.³⁸

The Main Roll-Out Stage

During this stage, energy suppliers were expected to provide consumers with 2nd generation (SMETS 2) smart meters which had overcome the technical issues identified during the foundation stage. This stage was originally set to be completed by 2019.³⁹

The Revised Roll-Out Timetable

However, as a result of various delays, particularly regarding the design and testing of SMETS 2 meters and the supporting data communication network, in May 2013 the government had to revise its roll-out plan.⁴⁰ Under the new plan the Foundation Stage was extended from 2011 – October 2016, with the Main Roll-Out occurring from November 2016 – December 2020.⁴¹

In September 2013 the government also granted Smart DCC Ltd (DCC) a license to establish and manage the communications network for SMETS 2 meters.⁴² The network, which will eventually cover over 99.25% of the country by 2020/21, was designed to go live in late 2015 to allow for the gradual roll-out SMETS 2 meters before the main roll-out period began.⁴³

To ensure that consumer demand for smart meters would meet required uptake levels, Smart Energy GB was also established that year to promote the roll-out to the public.

³⁸ National Audit Office, *'Preparations for the roll-out of smart meters'* 30 June 2011, p6.

³⁹ Ibid, p6.

⁴⁰ DECC & The Rt Hon Edward Davey, *'Written Ministerial Statement by Edward Davey: Smart Metering'*, 10 May 2013.

⁴¹ HoC Library, *'Energy Smart Meters'*, pp19-20

⁴² The Data Communications Company (DCC), official known as 'Smart DCC Ltd', is a subsidiary of Capita Plc.

⁴³ DCC, *'Business Plan 2017/18-2020/21'*, January 2017, p11.

Expected Savings

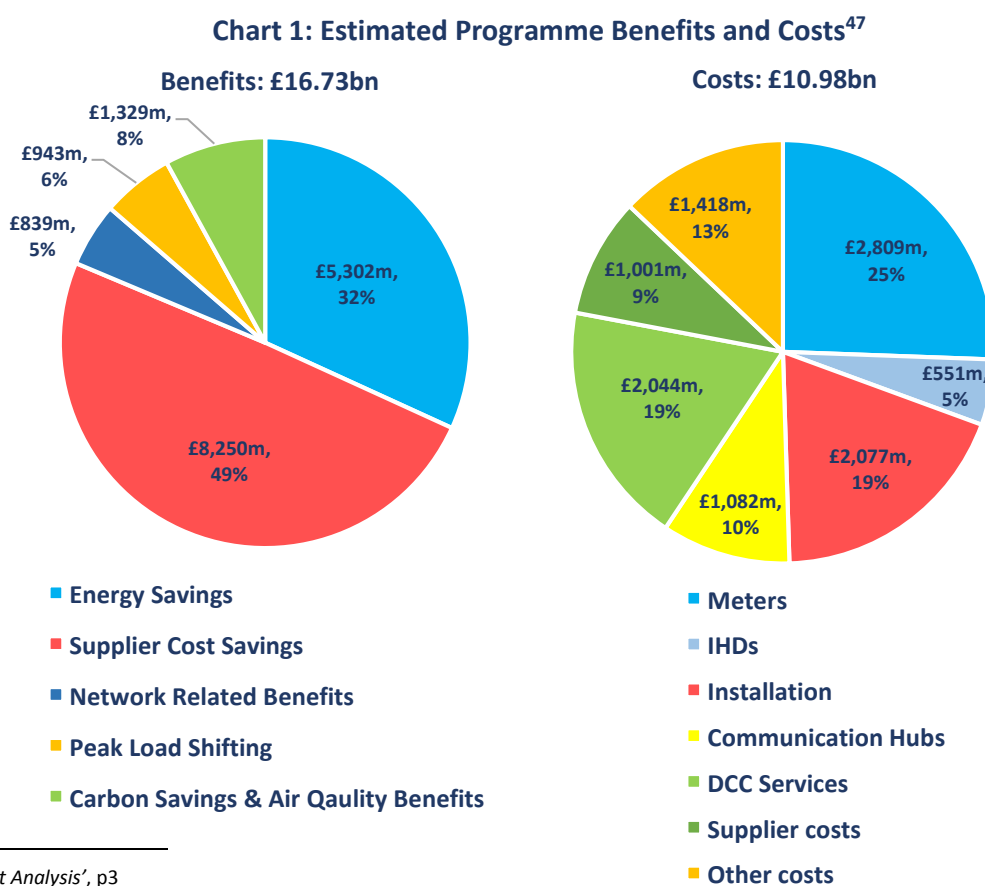
Between 2011 and 2016, the government published an 'Impact Assessment' or 'Cost-Benefit Analysis' of the programme in each year, except 2015.

The most recent analysis of 2016 expected that by 2030 the roll-out would deliver a net benefit of £5.75bn, based on costs of £10.98bn, and a gross benefit of £16.73bn.

Of the £16.73bn gross benefit figure almost half, 49%, would come from supplier cost savings. Savings from reduced energy usage would account for 32%, and be complemented by savings of 6% from peak load shifting, and 5% from network related benefits. Additionally, 'carbon savings and air quality benefits' would account for 8% of all monetised savings.⁴⁴

While the direct cost to consumers in the form of bill increases varies according to use, if spread evenly, the programme is set to cost each home and small businesses at least £370.⁴⁵ Of that total, direct related meter costs account for around 60%, while DCC network costs account for 19%.

Customers have been paying up front for the £11bn cost of the roll-out in the form of higher bills, and may continue to do so beyond the 2020 deadline.⁴⁶ However, savings from the roll-out will continue to be felt after that point. It is therefore expected that the average annual dual fuel bill will be £11 lower by 2020, and £47 lower by 2030, than it otherwise would have been.



⁴⁴ BEIS, '2016 Cost Benefit Analysis', p3

⁴⁵ Total programme cost of £11bn spread evenly over 30m homes and small businesses is £367.

⁴⁶ Vaughan, Adam (Guardian). '[Smart meter rollout could force household bills to rise, says supplier](#)', 26 June 2017

⁴⁷ BEIS, '2016 Cost Benefit Analysis', p12-13.

Chapter 2: The Reality

Although there had been initial delays and cost overruns, by the middle of 2016 a recent cost benefit analysis of the programme had been completed, a revised timetable was put in place, and suppliers still had four and a half years to plan for and meet their obligations. The government therefore believed that by the end of 2020 the roll-out would predominantly have been completed, and that savings would have materialised for customers.

However, while it presently affirms that the roll-out is 'on track' to deliver customer savings of almost £300m in 2020, BIG's investigation into the roll-out's progress has uncovered significant cause for concern.⁴⁸ It has consequently come to not only believe that the 2020 target will not be met, but question whether the programme will even deliver meaningful returns to energy customers at all.

In particular, it has found that concerns with the roll-out cover four broad aspects of the programme. This chapter accordingly goes on to explore each of the topics of concern within those four broad aspects, and outlines their impact on the programme and customers.

⁴⁸ BEIS, '[Written Question – 130892](#)', 13 March 2018.

Technological

The rollout of smart meters has been a cock up and a catastrophe. Energy firms are now using it as a soft form of trapping people into poor deals as they can't switch providers without their meters going dumb.

[Martin Lewis,](#)
[Founder of](#)
[MoneySavingExpert](#)
[.com](#)

Switching suppliers is a recommended method for keeping energy bills as low as possible. Any inability to combine the power of a smart meter with the freedom to switch and keep the meter 'smart' undermines the goal of the meters.

[Victoria Arrington,](#)
[of Energyhelpline](#)

Roll-out of SMETS 1 Meters

1st generation (SMETS 1) meters were designed in 2012,⁴⁹ and were only meant to be used during the foundation or testing phase of the roll-out. This was because they have a number of key technical limitations.

However, although it is now 21 months since the foundation stage ended, and over 4 years since it was originally set to end, energy suppliers are still exclusively providing customers with these obsolete meters. In fact, in January 2018 the government yet again extended the time in which suppliers could continue to offer these meters, from 13th July to 5th October 2018.⁵⁰ Suppliers will also be allowed to install these obsolete meters in January 2019, if they were offered to customers prior to the October deadline.

Technical Interoperability

A key limitation of SMETS 1 meters are that the majority of them can only send and receive data from either the supplier which installed it, or a handful of others. This lack of 'Technical Interoperability' occurs because suppliers presently use their own communication networks. Of the 1m customers with a smart meter who annually switch providers, less than half find their meter subsequently maintains its smart capability with the new supplier.⁵¹ The majority are left with a meter which is 'dumb', where it needs to be physically read by the new supplier as traditional meters presently do.⁵² Moreover, of the meters that can send data to a new supplier, many subsequently only display use in kWh, and not currency.⁵³

Ofgem estimates that customers could save up to £300 a year by switching to the cheapest tariff.⁵⁴ Rather than making switching easier though, these meters therefore effectively dis-incentivises it. In fact, only 13% of smart meters users were aware of this limitation, and the only 3% of them were informed of it by suppliers, prior to installation.⁵⁵ This is despite the fact companies have an obligation to do so, and Ofgem previously threatened enforcement action against companies for failing to disclose this limitation. This issue is reflected in contacts to Citizens Advice about switching issues, which increased 40% between June-December 2016 and June-December 2017.⁵⁶

Furthermore, while the government publically maintained that SMETS 1 meters would eventually be enrolled on the new DCC network through over-the-air firmware updates, it now accepts that will not fully be the case. It is accordingly consulting on introducing a 'backstop' measure that all SMETS 1's not enrolled on the DCC network by the end of 2020, will need to be replaced.⁵⁷ The resultant increased number of installations suppliers have to conduct further delays and increases the cost of the roll-out.

⁴⁹ DECC, '[Smart Metering Implementation Programme: Smart Metering Equipment Technical Specifications](#)', September 2012.

⁵⁰ BEIS, '[Decision on SMETS1 and Advanced Meter Exception end-dates](#)'.

⁵¹ BEIS, 'Maximising interoperability for first generation (SMETS1) smart meters', p5.

⁵² BEIS, '[Written Question – 68879](#)', 29 March 2017.

⁵³ Smart Energy GB, '[Can I switch my energy supplier after having my smart meter installed?](#)' Campaign Leaflet, Spring 2018

⁵⁴ Ofgem, '[State of the Energy Market: 2017 Report](#)', October 2017.

⁵⁵ Nair, Rajni (Citizens Advice), '[Making smart meters work for everyone](#)', 23 February 2018.

⁵⁶ Citizens Advice, '[Monitoring the smart meter roll-out](#)', 21 February 2018.

⁵⁷ BEIS, 'Maximising interoperability for first generation (SMETS1) smart meters', p6.

Mobile Signal Coverage

When planning the smart meter roll-out the government decided that energy suppliers, and not distribution network operators would manage it. It therefore simply published minimum technical specifications which the meters had to meet, and left their wider design and manufacturing to each supplier. Each supplier accordingly made their own agreements with mobile operators, to utilise their respective networks to send data.⁵⁸

With mobile coverage not universal however, many meters cannot work in areas with poor or no signal.⁵⁹ Customers in these areas are either told they cannot have a smart meter, or are given one which again goes ‘dumb’.

Government estimates for the number of smart meters presently operating in ‘dumb’ mode are around 640,000.⁶⁰ However, after delving deeper into the headline figure of 11.06m meters in operation, BIG has found that the total number of meters installed by the end of March 2018 was actually over 12.3m.⁶¹ There have therefore been over 1m meters which were installed, but are no longer operating in smart mode. The true number of meters in ‘dumb’ mode could therefore be up to 10%, over double the government’s current estimate.

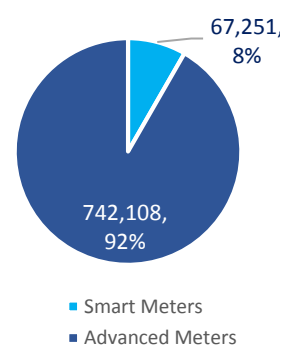
Home Area Network Coverage

Each smart meter creates a wireless Home Area Network (HAN), to transmit data between the meters, communications hub, IHD, and to connect with other smart appliances. Issues with the 2.4 GHz frequency presently used by SMETS 1’s to create this network though, mean that the meters are not suitable for use in up to 30% of premises, primarily high rise flats and buildings with thick walls.⁶² While SMETS 2 and upgraded SMETS 1 meters will use the 868MHz frequency to circumvent this issue, they too will not work in around 3.5% of premises. Addressing this issue will therefore not only require two post installation ‘technical fixes’, but for non-upgradable meters in this context to be replaced.⁶³

Advanced Meters

Of the 12.3m meters installed by the end of March 2018, 800,000 were in small businesses.⁶⁴ However, while the roll-out has been classed as one of ‘smart meters’ over 90% of businesses have not even received a SMETS 1 smart meter, but rather more obsolete so called ‘Advanced Meters’. These meters can only send, and not receive data from suppliers, and some do not even come with an IHD.⁶⁵ Like SMETS 1 meters, their roll-out was also set to end with the Foundation Stage. Despite the fact they are less capable though, the government has continued to extend their roll-out

Chart 2: Meters Installed In Small Businesses By Type⁶⁷



⁵⁸ In most cases each supplier also contracted a Meter Asset Provider (MAP) to supply and install smart meters to their customers.

⁵⁹ Meadows, Sam (Daily Telegraph). ‘[Six reasons to say no to a smart meter](#)’, 02 August 2017.

⁶⁰ BEIS, ‘[Written Question – 162028](#)’, 12 July 2018.

⁶¹ BEIS, ‘*Smart Meters Statistics: Quarterly Report to end December 2017*’, 27 March 2018, p3.

⁶² Public Accounts Committee, ‘[Update on preparations for smart metering](#)’, p13.

⁶³ This further fix is referred to as an ‘AltHAN’ fix and will likely require some form of physical, cabled connection between the meter and Hub.

⁶⁴ Officially referred to as ‘Smaller non-domestic sites’

⁶⁵ BEIS, ‘*Smart Meters Statistics: Quarterly Report to end December 2017*’, 27 March 2018, p6.

date, with them allowed to count towards the 2020 target.⁶⁶

In March 2016 though, as it became clear that the development of SMETS 2 meters was significantly behind schedule, the government amended supplier license conditions to allow them continue to offer these non-smart meters until August 2017. The costly roll-out of smart meters has for almost all small businesses therefore not even resulted in them receiving a ‘smart’ meter.

Roll-out of SMETS 2 Meters

After their roll-out was initially delayed, 2nd generation (SMETS 2) meters were planned to be rolled-out from November 2016 onwards. Their updated minimum technical specifications were designed to ensure they overcame the technical interoperability, mobile signal, and HAN limitations of SMETS 1 meters.

However, although the supporting data communications network for SMETS 2 meters went live in November 2016, only 450 SMETS 2 have been installed to date, with only 80 actually installed in the ‘live environment’.⁶⁸ These meters are in fact still undergoing testing, let alone mass manufacturing. In January 2018, the government therefore yet again had to push back the date at which these meters alone could be offered to consumers from July – October 2018.

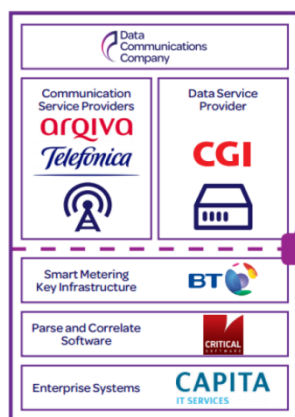


Image 3: Structure of the Data Communications Company.⁶⁹

There is “universal concern around specific and urgent technical issues — many of which are outside of suppliers’ control — which, if they remain unresolved, threaten cost increases to consumers that are of unacceptable levels and risk the overall delivery of the rollout.”

Energy UK

The DCC’s Record

Smart DCC Ltd (DCC) was given a licence in September 2013 to establish and manage the aforementioned data communications network for SMETS 2 meters. While the network did go live in November 2016, that was though a year later than planned, and DCC costs had risen from £2.47-3.13bn.⁷⁰ Moreover, a leaked draft letter from the supplier industry body Energy UK, also stated that as of May 2018 the network was “still not working as it should be”.⁷¹

Since then further delays have occurred, yet in early 2017 the government tasked the DCC with finding a technical solution for SMETS 1 interoperability, HAN and mobile coverage issues. While, a provisional completion date for the roll-out of technical solutions has now finally been set for July 2019,⁷² given the company’s track record, doubts remain over whether this deadline will be met, and what the final cost for the solutions will be.

⁶⁷ BEIS, ‘Smart Meters Statistics: Quarter 1 2018’, 31 March 2018, Table 3a. Meters installed by large suppliers in small businesses.

⁶⁶ BEIS, ‘Decision on SMETS1 and Advanced Meter Exception end-dates’.

⁶⁸ BEIS, ‘Written Question – 125235’, 01 February 2018.

⁶⁹ HoC Library, ‘Energy Smart Meters’, p21

⁷⁰ Thomas, ‘Energy companies raise alarm over £11bn smart meter rollout’.

⁷¹ Gosden, Emily (Times), ‘Smart meter rollout faces costly delays’, 28 May 2018.

⁷² Data Communications Company, ‘Conclusions on DCC’s delivery plan for SMETS1 Services’, 16 October 2017, p3.

Meter Security

As with all modern technological devices which transmit information, issues over their security remain at the forefront. This is more so the case with smart meters as they both carry customer data, and form part of the wider infrastructure of a smart energy grid.⁷³

In fact security concerns reached such a degree in 2016, that GCHQ was forced to intervene in the roll-out after ‘glaring loopholes’ were found, most notably where the code used to unscramble the data sent between meters and suppliers was the same for all devices.⁷⁴

While the meters cannot be ‘hacked’ in the traditional sense as they are not connected to the internet, further concerns have been raised over the mobile signal being intercepted, bills artificially inflated, and the excess payments siphoned off.⁷⁵

Moreover, although GCHQ has been closely involved in roll-out since its earlier intervention, security concerns remain high, with them stated as one of the main reasons behind the repeated development delays of SMETS 2 meters.⁷⁶

Section Conclusion

It is therefore clear that technological issues have plagued the roll-out. Not only are costly yet outdated meters still being rolled-out, but a solution for their limitations has yet to be finalised. The development of 2nd generation meters is woefully behind schedule, and they too will be obsolete by the time of their roll out.⁷⁷ As a result programme costs have increased and consumers have faced a number of difficulties securing and operating their smart meters.

⁷³ The meters themselves do not carry or transmit personal data, such as the customer’s name, address or bank details. They only transmit energy usage data, which is subsequently tied to the consumers account.

⁷⁴ Clark, Pilita, and Sam Jones (Financial Times), ‘[GCHQ intervenes to secure smart meters against hackers](#)’, 18 March 2016.

⁷⁵ Walne, Toby (Daily Mail), ‘[We spy trouble: Even GCHQ is worried about smart meters say experts who fear a Trojan horse-style cyber attack](#)’, 18 February 2018.

⁷⁶ Ibid.

⁷⁷ Lickorish, ‘*Supplementary Written Evidence: [SMB06](#)*’.

Commercial

Commercial Interoperability

The commercial problem is causing the biggest issues with the smart meter roll-out, for both consumers and suppliers.

[Steve McCabe MP](#)

While a technical solution for three of the main SMETS 1 issues will eventually be implemented, there are presently no solutions planned to tackle the issue of Commercial Interoperability.

This issue arises following a customer's decision to switch suppliers, and sees the new supplier replace the pre-existing smart meter, even if it can receive data from it. It is caused by Meter Asset Providers (MAP) exploitatively charging the new supplier more to lease or rent the installed smart meter, than it costs the new supplier simply replace it with one of their own.⁷⁸ In many cases the new smart meter may even be the exact same model as the one it replaced.⁷⁹

When challenged that such actions represented a failure in the meter asset market, the government however, maintained that *"competition is working and providing good value to energy consumers."*⁸⁰

The unnecessary replacement of functioning meters, which further increases roll-out costs, is therefore free to continue through the roll-out of SMETS 2 meters.⁸¹

Required Installation Levels

Although the main roll out has been underway for over 17 months, figures show that by the end of March 2018 it was only 21% complete. Suppliers therefore have less than 3 years to offer and install around 41m more smart meters. This equates to installing almost 1.3 million meters a month. However, while current monthly installation rates have generally been rising slowly, suppliers are well below that average threshold, and were by April 2018 only installing around 420,000 meters a month.⁸²

Chart 3: Quarterly Domestic Meter Installations By Large Suppliers⁸³



⁷⁸ This is official referred to a high 'Deemed rental' costs.

⁷⁹ Lickorish, 'Supplementary Written Evidence: SMB06'.

⁸⁰ Hansard, 'Public Bill Committee Debate: 23 November 2017: [c99](#)'.

⁸¹ Lickorish, 'Supplementary Written Evidence: SMB06'.

⁸² BEIS, 'Smart Meters Statistics: Quarter 1 2018', 31 May 2018, Tables 1a and 3a.

⁸³ BEIS, 'Smart Meters Statistics: Quarter 1 2018', 31 May 2018, Table 1a.

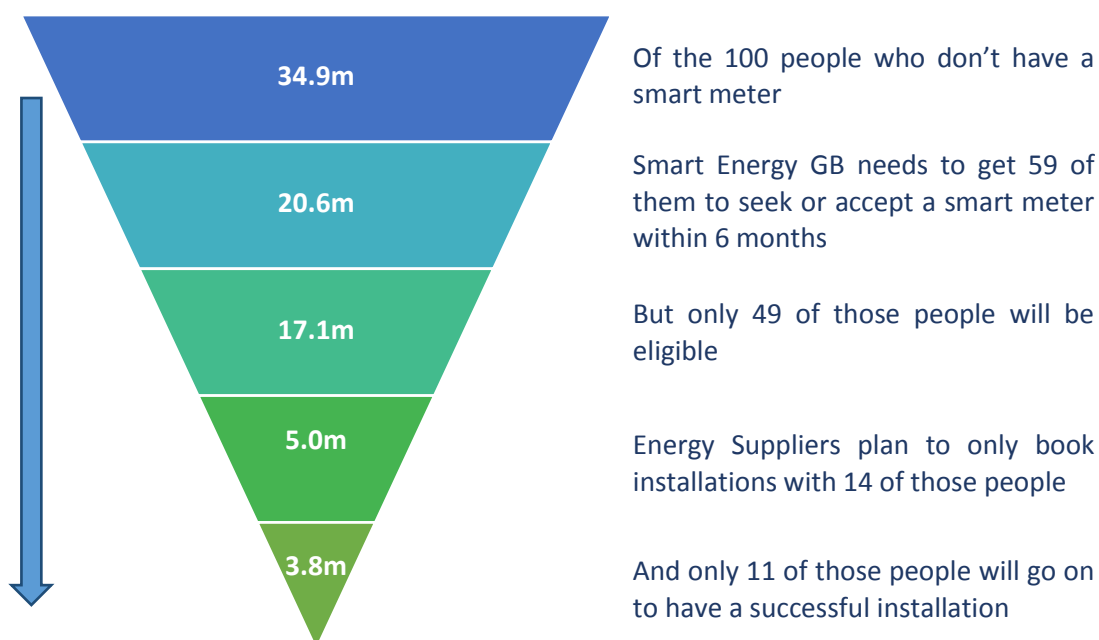
Installation Capacity

As stated suppliers have been given repeated deadline extensions to ensure their supply chains and installation capacity is sufficient to meet the 2020 target, with the SMETS 2 roll-out alone pushed from November 2016 to October 2018. Despite this extra time though, supply chains and installation capacity remains a key programme constraint.

As of May 2017, only 18% of those willing and eligible for a smart meter had one successfully installed within 6 months.⁸⁴ While it is hoped that by November 2018, increased supplier roll-out capacity will see this figure increase to 22%, that is still significantly below where suppliers need to be.⁸⁵ In fact, the number of additional installation engineers that suppliers must train and hire to meet the 2020 target, has been put at over 10,000.⁸⁶

Moreover, even in the event that suppliers do manage to increase their own capacity, substantial increases in installations will ultimately depend on the number of meters available. Meter manufacturers have though stated it would take at least 6 months, if not a year to efficiently meet a large order for new meters.⁸⁷ With SMETS 2 meters set to be exclusively offered from 5th October onwards, their mass manufacturing should therefore already be under way. As stated however, only 450 SMETS 2 have been installed thus far, with their testing still ongoing. There is consequently a high probability that the number of installations will not rise to required levels, due to the simple fact the meters cannot physically be installed.

Chart 4: Pan-supplier customer pyramid (as per energy supplier plans) November 2018⁸⁸



⁸⁴ Smart Energy GB, 'Written Evidence: SMB03', p4.

⁸⁵ Ibid, p5.

⁸⁶ Energy and Climate Change Committee (Commons), '[HC665: Smart meters: progress or delay?](#)', 03 March 2015, p13.

⁸⁷ Wiles, Richard, 'Written Evidence: Trilliant: [SMB07](#)', Smart Meters Bill 2017-19 Committee, 29 November 2017.

⁸⁸ Smart Energy GB, 'Written Evidence: SMB03', p5.

Smart meters.
The simple way
to control your
energy use.



Smart meters show you exactly how much energy you're using in pounds and pence, putting an end to estimated bills. It's time to get Gas & Lecy under control.

Contact your energy supplier today about installing your smart meter.



Image 4: A Smart Meter GB advertising poster.⁹⁴

Consumer Demand

Furthermore, while customer demand is not presently constraining the programme, it could well do so in the future. In order for the majority of network and supplier benefits to begin to be realised, 80% of the roll-out target must be met.⁸⁹ Presently though less than half of those without a smart meter would like to receive one,⁹⁰ with as few as 35% of contacted customers giving a positive response to the offer of one.⁹¹ Increasing demand through public engagement has accordingly been more difficult than anticipated, which in part has led to the budget for Smart Energy GB rising from £97m to £192m.⁹²

Moreover, sustaining demand will become more difficult and costly over the course of the programme, as those persuadable to have a smart meter installed do so.⁹³ This would leave Smart Energy GB having to persuade those less minded to have a meter installed, in order to reach the 80% benefit threshold.

Back-Bills

Many customers who decide to install a smart meter were previously on estimated bills. When a smart meter is installed a reading of the previous meter is therefore taken, to ascertain energy use to that point. If that use is higher than the amount the customer has paid for, they are issued a 'back-bill' for the difference.⁹⁵

A typical back bill is £1,160, and across meter types, the issue raises 10,000 complaints a year.⁹⁶ Contacts to Citizens Advice about smart meter specific 'increased and back-bills' have in fact doubled between June-December 2016, and June-December 2017 alone.⁹⁷ These customers who have agreed to install a smart meter on the basis it will save them money, have therefore found themselves struggling to suddenly pay significant sums. Moreover as some suppliers demand immediate repayment in full, consumers have even been driven into debt.⁹⁸

Section Conclusion

Following the EU Directives to roll-out smart meters, every other European nation chose to do so through Distribution Network Operators (DNOs). The UK government however, believed that they would have fewer incentives to keep costs low, and so instructed energy suppliers to conduct the roll-out instead.⁹⁹ As described in a subsequent government energy review though, this was "a mistake with profound consequences".¹⁰⁰

Not only have suppliers not kept costs low, but their commercial agreements, mismanaging of meter development, and own capacity issues have seriously hindered rather than facilitated the efficient roll-out of energy smart meters.

We would have been better off going down the network operators route, rather than the one that has been chosen.

[Caroline Flint MP](#)

⁸⁹ NAO, '[Preparations for the roll-out of smart meters](#)', p29.

⁹⁰ Smart Energy GB, '[Smart energy outlook](#)', March 2018, p4. The precise figure is 48%.

⁹¹ Thomas, '[Energy companies raise alarm over £11bn smart meter rollout](#)'.

⁹² BEIS, '[2016 Cost Benefit Analysis](#)', p18.

⁹³ Vaughan, '[Smart meter rollout could force household bills to rise, says supplier](#)'.

⁹⁴ Smart Energy GB, '[A3 Informational Poster](#)'.

⁹⁵ Citizens Advice, '[Written Evidence: SMB08](#)' Smart Meters Bill 2017-19 Committee, 22 November 2017.

⁹⁶ Ofgem, '[Ofgem bans suppliers from backbilling customers beyond 12 months](#)', 05 March 2018.

⁹⁷ Citizens Advice, '[Monitoring the smart meter roll-out](#)', 21 February 2018.

⁹⁸ Peachey, Kevin (BBC). '[Ban imposed on catch-up energy bills](#)', 05 March 2018.

⁹⁹ Thomas, '[Energy companies raise alarm over £11bn smart meter rollout](#)'.

¹⁰⁰ BEIS & Professor Deiter Helm, '[Independent Report: Cost of Energy Review](#)', 25 October 2017, p63.

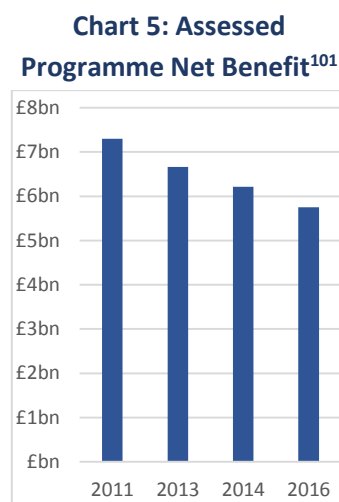
Economic

Falling Consumer Benefits

In its 2014 'Impact Assessment', the government stated that by 2020, it expected consumers to receive national savings from the roll-out of just over £546m.¹⁰² The average dual fuel bill for a household, then around £1300, was therefore set to be £26 lower than it otherwise would have been.¹⁰³

By the time of the 2016 Cost-Benefit Analysis though, with costs increasing, the expected savings by 2020 had been revised down to £277m.¹⁰⁴ The predicted saving on an average dual fuel bill in 2020 therefore fell accordingly to only £11.¹⁰⁵

In fact, when looking at the cost-benefit assessments of the programme, one finds that the net benefit has fallen by £1.55bn between the 2011 and 2016 assessments.¹⁰⁶



Increasing Programme Costs

Moreover, as this report has repeatedly highlighted, since 2016 the roll-out has suffered a number of further delays and costs increases, particularly regarding SMETS 1 solutions, SMETS 2 development, and supplier roll-out capacity. In fact reports have stated underestimates by BEIS of the cost of installing smart meters mean the true bill for that aspect alone is over £1bn higher than forecast.¹⁰⁷ Suppliers therefore not only increased their bills to pay for this last year, but did so again this year, with British Gas, Npower and Scottish Power among others all stating that their recent increases of 5.1-5.5% were driven in part by rising smart meter costs.¹⁰⁸

With these delays set to continue, reports have stated the final bill for the smart meter roll out could reach as high as £20bn, almost double the original £11bn budget.¹⁰⁹ In fact concerns over the rising costs of the scheme, and the associated reduction in consumer benefits have reached such a degree, that in January 2018 the NAO announced they too were launching an independent review of the programme.

Cost-Benefit Assumptions

The strength of the economic case behind the roll-out, and its associated value for consumers, is not though purely reliant upon the extent of unforeseen cost increases and delays. It is equally based upon a number of questionable assumptions about the impact smart meters will have on consumer energy use and efficiency.

¹⁰¹ For each assessment see: [2011 NAO Report](#), [2013 DECC Impact Assessment](#), [2014 DECC Impact Assessment](#), and [BEIS 2016 Cost-Benefit Analysis](#).

¹⁰² DECC, '[Smart meter roll-out for the domestic and small and medium non-domestic sectors \(GB\)](#)', 30 January 2014, p3.

¹⁰³ Ibid, p16.

¹⁰⁴ BEIS, '[2016 Cost Benefit Analysis](#)', p4.

¹⁰⁵ Ibid, p12.

¹⁰⁶ Programme net benefits were predicted as £7.3bn in 2011, and £5.75bn in 2016, see: DECC & Ofgem, '[Smart Metering Implementation Programme](#)', p5. & BEIS, '[2016 Cost Benefit Analysis](#)', p3.

¹⁰⁷ Choi, '[Think your smart meter is free?](#)'.

¹⁰⁸ BBC, '[British Gas price rise unjustified, says government](#)', 10 April 2018. and, BBC, '[Npower to raise energy prices by 5.3%](#)', 11 May 2018.

¹⁰⁹ Bischoff, '[REVEALED: The £9bn extra cost of smart meters](#)'.

Although there can be an immediate change in behaviour, it slips back within about six months. That's because for most consumers, energy is used when it's needed and saving a few pounds each week does not change behaviour for long.

[Nick Hunn, CTO of WiFore Consulting](#)



Image 5:¹¹⁸

Assumption 1: Smart Meters will drive ‘sustained’ behavioural changes which will reduce domestic electricity consumption by 2.8%, and gas consumption by 2%.¹¹⁰

These reductions in energy use are set to contribute towards estimated savings of £11 (1%) off an average dual fuel bill, by 2020, rising to around £47 (4%) by 2030.¹¹¹

However, although trials show that a 2-3% reduction is a reasonable initial expectation, the majority of those trials did not look at energy use in the long term.¹¹² While reports from Smart Energy GB that 77% of customers were doing all they could to save energy “immediately after getting their meter” correlate with expectations,¹¹³ the evidence for sustained, long term behavioural change is accordingly far less conclusive.

In fact 41% of members with a smart meter surveyed by Which?, stated it did not change their understanding of energy use at all.¹¹⁴ 55% of those surveyed by Populus on behalf of Smart Energy GB also stated their energy use in the year after their smart meter was installed either did not change or increased.¹¹⁵

For those who have made changes, in order to sustain that activity beyond the first year, the financial rewards must be comparatively meaningful.¹¹⁶ However, research shows that when confronted with the reality that smart meters would only help them save “pennies” rather than “larger amounts”, consumers “express disappointment and frustration”.¹¹⁷

While they may therefore make initial changes following an installation, upon learning that their actions would only save them around £11 in 2020, or 3p a day, there is no guarantee consumers will sustain such actions in the years after installation, even with continued industry engagement attempts.

Assumption 2: Time of Use (ToU) tariffs will result in 2% of peak consumption being shifted to off-peak times by 2020, and 4% by 2030.¹¹⁹

The international evidence of ToU tariffs and that of the rather small trials conducted in the UK, does show they have the ability to shift peak time energy use. However, no matter how effective the tariffs are, the savings expected in the 2016 Cost-Benefit Analysis will not presently be achieved.

¹¹⁰ DECC, ‘2014 Impact Assessment’, p47.

¹¹¹ Ofgem, ‘[Infographic: Bills, prices and profits](#)’, 28 March 2018. The average dual fuel bill in 2017 was £1135. If prices rise in line with inflation then an £11 saving will be equivalent to around 1% of bills. If prices rise above inflation then the saving will be of comparatively less value.

¹¹² Science and Technology Committee, ‘[Evidence Check: Smart metering of electricity and gas](#)’, p18-20.

¹¹³ Smart Energy GB, ‘[Smart meter rollout: December campaign update](#)’, December 2017.

¹¹⁴ Which?, ‘[2020 energy meter roll-out target not looking so smart](#)’ 20 February 2018.

¹¹⁵ Populus ‘[Smart meters and energy usage: a survey of energy behaviour before and after upgrading to a smart meter](#)’ August 2017, p11.

¹¹⁶ Hargreaves, Nye and Burgess, ‘[Making energy visible: a qualitative field study of how householders interact with feedback from smart energy monitors](#)’, Energy Policy 38 (2010), 6111-6119.

¹¹⁷ Ibid.

¹¹⁸ Image taken from: Safegas, ‘[Smart meters](#)’, Accessed 01/04/2018.

¹¹⁹ BEIS, ‘[2016 Cost Benefit Analysis](#)’, p29-30.

There is a fundamental conceit at the heart of the smart meters programme which holds that householders living busy, modern lives have large flexibility over the time and quantity of their energy consumption.

[Institute of Directors](#)

The uptake of time-of-use tariffs on an opt-in basis appears relatively limited so far..... It is accurate to say we are not aware of any jurisdiction that has more than between 5-12% of consumers on voluntary time-of-use-tariffs.

[Competition and Markets Authority](#)

This is as they are predicated on 20% of customers being on static ToU tariffs by 2020, rising to 30% by 2030. Like many other projections in the 2016 analysis though, this has not been the case. In fact only 10% of customers are presently on traditional Economy 7 or 10 tariffs. The wide introduction of new ToU tariffs to accompany smart meters has actually been delayed from 2018, until after the roll-out is scheduled to be completed in 2020.

While the tariffs may be effective in shifting energy use, one must also question how it produces that shift. The evidence from international and British trials shows that in order to be effective, the difference between peak and off-peak prices must be high enough to provoke a response. This was the case with a trial by UK Power Network where peak-time prices were 7 times the normal price.¹²⁰

ToU tariffs therefore effectively give suppliers a license to significantly increase peak-time prices, under the guise of energy efficiency. When the relevant minister was asked whether he was comfortable with ToU peak prices “*being many times higher than at non-peak times in order to prompt a large enough response to materially smooth demand,*” his response was again that market forces would prevent such exploitative charges and that he “*just did not see it happening*”.¹²¹

Moreover, while many consumers will be able to alter their energy use, that is not universally the case. In Ontario for example, despite peak time energy prices increasing significantly, 65% of residential customers did not reduce their consumption during peak-time, and simply paid the higher price.¹²² Customers could therefore end up paying higher peak-time prices, with the pattern of demand not guaranteed to significantly change, and so deliver savings.

The industry response to this issue was to state that ToU tariffs would be voluntary. When assessing the international experience of their uptake though, the Competition and Markets Authority stated it was unaware of any jurisdiction where more than 12% of consumers voluntarily moved to them.¹²³

Furthermore, when reviewing smart meter use abroad, the Competition and Markets Authority also found they were not universally effective. In Sweden they “*were not aware of any evidence on peak load shifting*”, while in Italy peak consumption only fell by 1% in the 2 years after their introduction, even though ToU tariffs were mandatory.¹²⁴ Similarly audits in Ontario found that peak demand among residential customers fell by only 0.7% over the 4 years following the introduction of ToU tariffs, 1/6th of expected levels.¹²⁵

Finally, ToU tariffs are meant to provide industry and as well as consumer savings. For these network related savings to be realised though, 80% of customers must

¹²⁰ Institute of Directors, ‘[Written evidence: SME0028](#)’, Science and Technology Committee: Smart Meters Inquiry, 26 April 2016.

¹²¹ Science and Technology Committee, ‘[Smart Meters Inquiry: Oral evidence: HC 993](#)’ 03 May 2016, Question 85.

¹²² Office of the Auditor General of Ontario, ‘[Annual Report 2014, Chapter 3.11 Smart metering initiative](#)’, Autumn 2014, p368.

¹²³ Competition and Markets Authority, ‘[Energy Market Investigation: Appendix 8.5: What is the evidence from the international experience of smart meters?](#)’, 24 June 2016, p4.

¹²⁴ Ibid, p33.

¹²⁵ Environmental Commissioner of Ontario, ‘[Conservation: Let’s Get Serious: Annual Energy Conservation Progress Report – 2015/2016](#)’, 31 May 2016, p176.

have a smart meter, as a prelude to ToU tariff use. With only 48% of customers presently wanting one though,¹²⁶ the prospect again remains high that in addition to questions of their effectiveness, the uptake of meters and ToU tariffs will simply not be high enough to meaningfully alter our national energy use, and so deliver associated savings.

Assumption 3: That ‘carbon’ and ‘air quality’ savings will have a meaningful impact on the savings consumers can expect to receive.

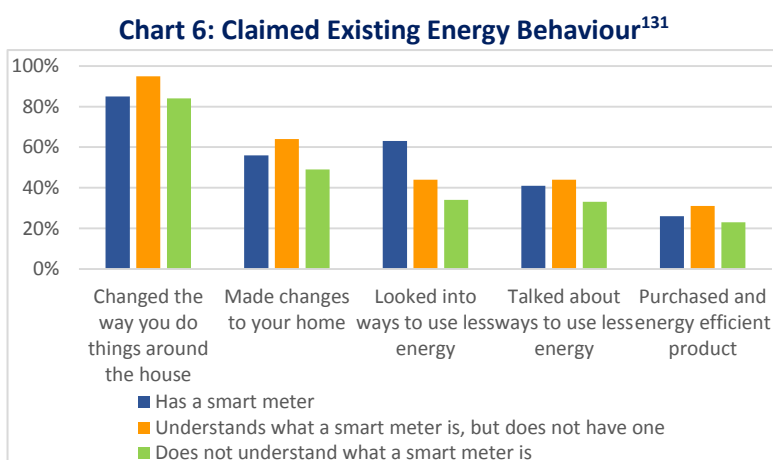
Reductions in energy use and smoother demand are said to save 29.8 million tonnes of carbon by 2030, among other benefits.¹²⁷ In financial terms these carbon and air quality savings have been quantified as having a value of £1.29bn and £98m respectively.¹²⁸

However, while it is important that such savings are quantified, other than the rather modest amount saved from purchasing less EU ETS, in themselves these supposed ‘savings’ have no meaningful impact on industry costs, or personal consumer savings. This is as the reduced emissions are said to lead to ‘*lower costs to society*’.¹²⁹ They will therefore have no meaningful impact on the amount consumers will see their annual energy bills reduced by.

Despite this, the supposed £1.4bn value of these savings have been included in the calculations of programme monetised costs and benefits, from which the figure of consumer savings has been achieved. As these ‘savings’ are valued at 8% of programme benefits, this has had the effect of artificially inflating the roll-outs net monetised benefit, and the amount customers can expect to save.

Rather, such savings should be classed with the other ‘key non-monetised benefits’, so that any cost-benefit analysis is truly reflective of core programme benefits.¹³⁰

Assumption 4: That comparative consumer side savings cannot be achieved without smart meters.



While not explicitly stated, a core assumption behind the roll-out is that these savings cannot be archived without the provision of smart meters. However, Smart Energy GB’s own analysis shows that the group which does the most to save energy at home is not those with smart meters, but rather those who know of and understand them, but do not have them.

¹²⁶ Smart Energy GB, ‘*Smart energy outlook*’, p4.

¹²⁷ Smart Energy GB, ‘*Written Evidence: SMB03*’, p8.

¹²⁸ BEIS, ‘*2016 Cost Benefit Analysis*’, p4.

¹²⁹ *Ibid*, p9.

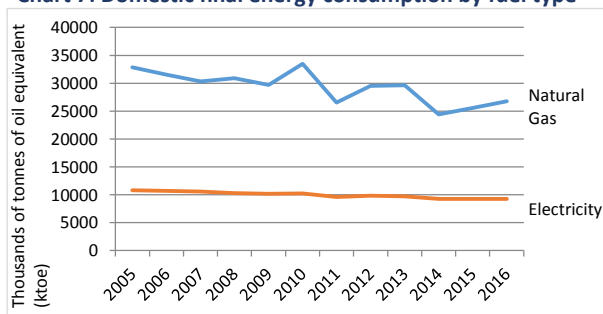
¹³⁰ BEIS, ‘*2016 Cost Benefit Analysis*’, p4. Other ‘key non-monetised benefits’ include ‘potential benefits from the development of smarter energy system’, ‘stronger competition between energy suppliers’ and ‘more convenient switching between credit and pre-payment arrangements’.

Changes in behaviour are therefore linked more to pre-existing knowledge and understanding of one's energy use, and not necessarily driven by the installation of a smart meter.

Moreover, smart meters are not the only way to make energy 'visible' and so potentially drive behavioural changes. Customers can buy an energy monitor which also enables them to view their electricity use in real time, on the high street from £20 - £100.¹³² These monitors, like smart meters, come with an in home display and can be installed by the consumer themselves, simply by clipping the sensor onto the property's main power cable.

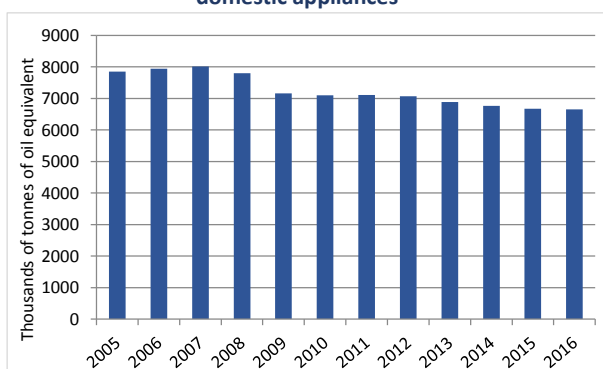
In addition to physical changes in behaviour and the home itself,¹³³ as stated savings are set to be achieved through the use of appliances at off-peak rather than peak time. In fact 17 of the 20% of peak load consumption that could theoretically be shifted to off-peak time comes from 'wet' appliances, with the remaining 3% from other sources.¹³⁴ However, while the Time of Use tariffs are necessary for such savings to be possible, smart meters themselves are not.

Chart 7: Domestic final energy consumption by fuel type¹³⁵



Furthermore, to ascertain the true value of the roll-out one must compare the expected savings to underlying trends in energy use. As the adjacent table shows, both domestic electricity and gas consumption has fallen relatively steadily since 2005. This has been the result of not only behavioural changes driven by greater energy use awareness, but also from the improving energy efficiency of appliances. Given the underlying trend, a further reduction in energy use by 2% by 2020 was described by the Institute of Directors as a 'very poor yield', particularly given the programme's £11bn cost.¹³⁷

Chart 8: Total electricity consumption of household domestic appliances¹³⁶



Universal changes in behaviour driven by smart meters are consequently far from certain to occur, and while some changes may be made which correlate with the roll-out, no undeniable causal link can be established between the two. The changes which do occur, while attributed to smart meters could in reality be driven by pre-existing knowledge of one's energy use and existing trends of reduced energy consumption.

Educating consumers on their energy use through greater public engagement, subsidised insulation schemes and making energy more visible through monitors could achieve comparable consumer side savings, for less than the programme's £11bn cost.

¹³¹ Populus 'Smart meters and energy usage', p7.

¹³² Knight, Matthew (Which?), 'Energy monitors explained'.

¹³³ E.g. reducing the heating temperature, installing loft and cavity wall insulation, and installing double glazing.

¹³⁴ DECC, '2014 Impact Assessment', p59.

¹³⁵ BEIS, 'Energy consumption in the UK', 27 July 2017, Table 3.01.

¹³⁶ BEIS, 'Energy consumption in the UK', Table 3.08.

¹³⁷ Institute of Directors, 'Written evidence: SME0028'.

As stated though consumer side saving amount to only 32% of total programme savings, with majority of the rest, 49%, coming from supplier savings. These savings, along with 'network related benefits', and 'peak load' savings are all entirely driven by smart meter rollout. For consumers to see those savings though energy suppliers must pass them on, which again they are far from certain to do.

Section Conclusion

It is therefore clear that the existing economic case for the roll-out has been undermined not only by programme delays and cost increases, but equally as it is based in part on a number of questionable assumptions of savings and benefits. What consumer side savings that could be made are equally by no mean entirely attributable to the smart meter roll-out.

The UK customers could consequently be left in the same position as those in the State of Victoria where, as only 80% of expected savings were actually realised, consumers ended up paying a net cost of \$320m (£170m) for their smart meter programme.¹³⁸

For consumers to see the full financial benefit of the programme, industry side savings need to be passed on. Rather than accept there is no guarantee suppliers will be so charitable, and that the current assessment is at the very least outdated, the government has instead continued to state the roll-out is "on track" and that consumers can expect to see annual savings of £300m in 2020 alone.¹³⁹

¹³⁸ Office of the Auditor-General of Victoria, '[Realising the Benefits of Smart Meters](#)', September 2015, piii.

¹³⁹ BEIS, '[Written Question – 130892](#)', 13 March 2018.

Regulatory

The Energy Supplier Market

The Government estimate £8 billion of supplier benefits, but there is absolutely no guarantee that the £8 billion that suppliers are predicted to save will be passed on to consumers.

The only guarantee that consumers have is that they will have to pay for the £11 billion installation costs.

Of the programme's £16.73bn gross benefit figure 49%, or £8.25bn, will come from supplier cost savings. Within that figure, avoided site visits account for £2.99bn of savings, and reduced customer service overheads £1.21bn.¹⁴⁰

For consumers to feel the benefits of the roll-out, suppliers would therefore have to pass on almost all of those savings in the form of lower bills. Passing on half alone would mean that even in the unlikely scenario all the aforementioned ambitious targets were met, the project would have almost no net benefit for consumers at all.

However, as we have seen with changes in wholesale energy prices, while suppliers are quick to pass on cost increases, the same cannot be said for savings and reductions. In fact, Ofgem reported energy suppliers to the Competition and Markets Authority in 2014 with such concerns,¹⁴¹ and warned companies against undue price rises in 2017.¹⁴² The government is also set to introduce an energy price cap, in recognition that the energy supplier market is not adequately functioning.¹⁴³

Despite this being the case though, the government still maintains that market forces and competition alone will ensure suppliers keep costs down and pass savings on.¹⁴⁴

[Alan Brown MP](#)

Industry passing the costs

Similarly, each time the cost of the programme has increased, due primarily either to industry or government mismanagement, it has been consumers which have footed the bill through lower expected savings. Yet although continued delays are set to further increase costs and reduce savings, there remain no measures in place to protect customers from losing out further.

The primary way in which the government and Ofgem can ensure that energy suppliers work towards their target, is by stating they will be fined up to 10% of their turnover if they do not. When companies have effectively been fined in the past though, the amounts have been so modest, e.g. £350,000 in the June 2018 case of EDF, as to not even impact on company profits.¹⁴⁵ There are equally no safeguards in place to ensure that any of the potentially significant fines that are levied, are not simply passed on to consumers through higher bills.

When this issue was raised with the relevant Minister, while accepting that such fines would ultimately be passed on to consumers, he maintained the stated position that market forces alone would act as a deterrent against such action.¹⁴⁶

¹⁴⁰ BEIS, '2016 Cost Benefit Analysis', p3.

¹⁴¹ Ofgem, '[Ofgem refers the energy market for a full competition investigation](#)', 26 June 2014.

¹⁴² Thomas, Nathalie (Financial Times). '[Energy bills have 'no reason' to rise, says Ofgem](#)', 19 January 2018.

¹⁴³ BEIS, '[Government introduces new legislation to cap poor value energy tariffs in time for next winter](#)', 26 February 2018.

¹⁴⁴ BEIS, '[Written question – 133515](#)', 28 March 2018.

¹⁴⁵ Ofgem, '[EDF Energy pays £350,000 after missing smart meter targets](#)', 15 June 2018.

¹⁴⁶ Hansard, '[Public Bill Committee Debate: 28 November 2017, c99](#)'.

We appreciate suppliers are under pressure to install more meters, but they have a responsibility to act reasonably toward their customers and not to use misleading or aggressive sales practices.

[Victoria MacGregor, Director of Energy at Citizens Advice](#)

It is unacceptable for energy firms to mislead people and inflict unnecessary hassle. There should be proper penalties in place for firms which behave aggressively and break the rules.

[Baroness Ros Altmann,](#)

But also taking all the credit

Moreover, while programme costs have been passed on, suppliers have continued to portray smart meters as a ‘free upgrade’ that comes with no costs to customers. As a result of this deliberate duplicity between payment upfront, and indirectly through bills, only 1 in 5 people are aware that their bills have, and could well continue to increase to pay for the roll-out.¹⁴⁷

Supplier Scare Tactics

As the pressure on suppliers to meet the 2020 target increases, they have also been found to use aggressive ‘scare tactics’ to pressure customers to accept a smart meter. This includes stating smart meters were compulsory and a legal requirement,¹⁴⁸ existing meters are ‘unsafe’ and ‘need’ to be replaced,¹⁴⁹ bills would increase unless customers accepted a smart meter,¹⁵⁰ and the scheduling of installation visits without a customer’s prior consent.¹⁵¹ Citizens Advice reported they have received “*a stream of complaints from harassed customers*”, with them stating they felt ‘pressured’, ‘blackmailed’ and left feeling ‘*they had no choice*’.¹⁵² It also reported that 19% of consumers stated their supplier simply told them they were having a smart meter installed, and did not even ask if they wanted one.¹⁵³

These activities certainly contravene the spirit, if not arguably in part the contents of the industry code of conduct and licence conditions.¹⁵⁴ They are also misleading as there is no “*legal obligation*” on individuals to a smart meter.¹⁵⁵

They have though been incentivised to occur as the government has not defined what constitutes the ‘*reasonable steps*’ which suppliers must display they have taken to meet their obligations.

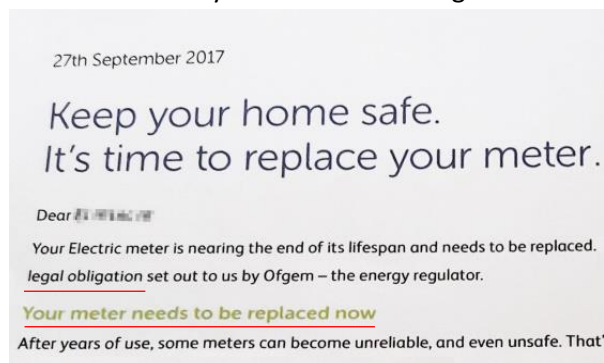


Image 6: A disingenuous ‘scare tactic’ letter from a supplier¹⁵⁶

The Chartered Trading Standards Institute has consequently written to Energy UK, the industry Trade Association, to raise concerns about how firms are marketing meters.¹⁵⁷

However, there remains no consistent approach to tackling this issue, and no meaningful action has been taken by regulators to prevent this reoccurring. As the

¹⁴⁷ Choi, ‘Think your smart meter is free?’.

¹⁴⁸ Bischoff, Victoria (Daily Mail). ‘[Energy giants ‘bully their customers into getting smart meters’: Firms accused of flouting trading laws by telling families devices are a legal requirement](#)’, 29 January 2018.

¹⁴⁹ Walne, Toby (Daily Mail). ‘[Energy firms accused of scare tactics as they claim customers must get smart meters because old ones may be unsafe](#)’, 22 October 2017.

¹⁵⁰ Milner, Leah (Daily Mail) ‘[Eon under fire over smart meter bullying: Energy firm agrees to review communications after we report it to watchdog](#)’, 04 October 2017.

¹⁵¹ This is referred to as a ‘Deemed Appointment’, where the supplier automatically assumes the customer agreement to having the appointment.

¹⁵² Bischoff, ‘[Energy giants bully their customers into getting smart meters](#)’.

¹⁵³ Citizens Advice, ‘[Written Evidence: SMB08](#)’

¹⁵⁴ SMICoP, ‘[Smart Meter Installation Code of Practice: Version 5.1](#)’, February 2018.

¹⁵⁵ BEIS, ‘[Smart meters: a guide](#)’.

¹⁵⁶ Ingrams, Sarah (Which?). ‘[Do you feel under pressure to get a smart meter?](#)’, 26 February 2018.

¹⁵⁷ Ray, Nick (The Times). ‘[Energy firms accused of bullying customers into accepting smart meters](#)’, 30 January 2018.

pressure to meet the deadline increases over the course of the roll-out, particularly as those who want a meter will have already had them installed, this issue could well become more prominent.

Data Protection and Control

In addition to facilitating accurate billing, changes in energy use and better energy tariffs, the data provided by smart meters holds enormous value in commercial terms. As existing License Conditions allow suppliers to access monthly usage data, to improve customer control over a supplier's use of their data, they can opt out of daily data collection, and must opt-in for half hour consumption data.¹⁵⁸ The smart metering privacy framework also prevents suppliers for sharing consumer data to third parties without their explicit consent.¹⁵⁹

While the current system therefore does provide consumers with a reasonable level of control over how suppliers use and disseminate their usage data,¹⁶⁰ issues remain over the lack of any immediate consent-checking mechanisms with the DCC.

Presently, when a DCC user requests that the company provide it with a consumers meter data, the DCC assumes that the company has consent to do this, and provides the data.¹⁶¹ The only way that a company would be found to not have permission to access the requested information, would be a periodic DCC audit, which would only take place after the information has been handed over. If a consumer suspects that a company has wrongly obtained their data, then the onus is on them to contact each company individually to ascertain if that is the case. There is consequently no straightforward, single or unified way for a consumer to establish which companies have accessed their smart meter data, when they did so, and why.

Section Conclusion

While suppliers can be very confident that the roll-out will result in significant savings for them, regardless of how energy use changes, the same cannot therefore be said for consumers. In fact the only aspect of the roll-out that consumers can be definitive about, is that they have shouldered the burden for it through their bills thus far, and will continue to do so through lower than expected savings. They are ultimately completely reliant upon the good graces of energy suppliers to see a return on their as yet over £11bn investment, and for them to abide by their own codes of conduct.

Rather than recognise the precarious position consumers are in however, the government has repeatedly maintained that market forces alone are sufficient to ensure that they will see a financial return. This position though is at odds with wider government policy, which displays such scepticism on the effectiveness of the energy market that an energy price cap is set to be introduced.

¹⁵⁸ DECC, '[Smart Metering Implementation Programme: Data access and privacy](#)', 05 April 2012.

¹⁵⁹ Energy UK, '[Smart meter data - A guide to your rights and choices](#)', 01 June 2013.

¹⁶⁰ For example a consumer could choose to share detailed usage data with a trusted smart home service provider, while only providing a minimum monthly reading to their energy supplier.

¹⁶¹ Citizens Advice, '[Written Evidence: SMB08](#)'

Chapter 2 Conclusion

The roll-out of 53m energy smart meters in Great Britain, far from being a programme which would provide benefits to all, has therefore been one which continues to raise significant concerns.

Customers have firstly been left paying over £11bn for outdated and obsolete smart meters, up to 10% of which have gone 'dumb', and which have actually made switching harder. While technical solutions and 2nd generation meters will eventually be rolled-out 4 years late, the associated delays and cost increases have already seen assessed net programme benefits fall by £1.6bn, with expected consumer savings in 2020 reducing 60%.

After being the only country in Europe to decide that energy suppliers should conduct the roll-out, on the basis they were best placed to keep costs down, in reality the opposite has occurred. Mismanagement of programme developments and costs, exploitative commercial agreements, and a lack of their own installation capacity have left suppliers struggling to meet their mandated roll-out obligations. Total programme costs are therefore set to again rise even further than predicted.

The programme's £5.75bn net benefit figure has also been found to be based on optimistic and inflated assumptions, not simply regarding delivery timescales, but equally of the tangible consumer savings which can be achieved through smart meters.

Finally, while energy suppliers are almost guaranteed to make £8.25bn in savings from the programme, whether consumers see a meaningful return on their investment is ultimately dependent upon those suppliers volunteering to pass their savings on.

Despite this being the case, the government has refused to pause or review the roll-out, and intervene where necessary.¹⁶² Rather, it continues to maintain that it is confident the 2020 target will be met, and that consumers will accordingly see £300m of savings in that year alone.

¹⁶² BEIS, '[Written question – 70618](#)', 20 April 2017.

Chapter 3: Recommendations

BIG would like to clarify that it fully supports the rationale behind the roll out, and the goals it seeks to achieve. It recognises that 73% of people with smart meters would recommend them to others,¹⁶³ and that they have additional benefits for certain groups, such as pre-payment customers.¹⁶⁴

However, while smart meters do hold the potential to provide benefits to all, without urgent action the roll-out is set to become yet another large scale public infrastructure project delivered well over time and budget, and which fails to deliver the expected benefits. BIG has consequently outlined the measures it believes the government and energy industry need take, to ensure the roll-out is successful.

1. Review the roll-out's timetable and economic case

It is clear that the 2020 target will almost certainly not be met, and that the 2016 Cost-Benefit Analysis is undoubtedly outdated, if not also based on overly optimistic assumptions. While maintaining the 2020 date, the government must recognise reality and outline fully costed scenarios for the likely event that the target is met in 2021 or 2022.

The methodology used in a new cost-benefit analysis should importantly also be adjusted to outline the savings which customers can realistically, and not theoretically expect to see through their bills.¹⁶⁵

2. Press on with SMETS 2 Meters

The government should make clear that regardless of future events, under no circumstances will it yet again extend the end date for the SMETS 1 meter roll-out.

Suppliers have already had a number of years to plan and prepare for the roll-out, and consumers cannot be expected to continually pay for and receive obsolete technology.

With SMETS 2 meters set to be exclusively rolled-out in less than 3 months, the government must therefore ensure that suppliers begin their mass production and installation now, so that sufficient meters are in place for October onwards.

3. Explicitly task Ofgem with ensuring savings are passed on

Ofgem already undertakes annual reviews of the state of the energy market, to help ensure suppliers are not exploiting customers with significant, unwarranted price increases.¹⁶⁶ It should now be explicitly tasked with ensuring that suppliers pass on the savings generated from the roll-out, so customers see a meaningful return on their investment.

¹⁶³ Smart Energy GB, '[Smart energy outlook](#)', March 2018, p5.

¹⁶⁴ Griffiths, Colin (Citizens Advice). '[The smart meter roll-out is ramping up](#)', 29 November 2017.

¹⁶⁵ This includes not assuming the uptake of time of use tariffs will be as high, not including carbon and air quality benefits in monetised savings and cost-benefit calculations, and not assuming that network and supplier cost savings will automatically be passed on to customers.

¹⁶⁶ Ofgem, '[State of the energy market 2017](#)', 31 October 2017.

Similarly, it should also be tasked with ensuring unwarranted programme cost increases, and potential fines, are again not simply passed to customers.

4. Change and enforce License Conditions

The use of 'scare tactics' to persuade customers to have a smart meter installed has been a regularly reoccurring phenomenon to date. There has however, been no consistent industry or regulator led approach to tackling the issue. Moreover as the roll-out deadline approaches and the pressure on energy companies to meet their obligations increases, this could become a far more prominent issue.

The government therefore should firstly make clear that such actions are not considered a 'reasonable step' to meeting roll-out obligations, and amend supplier licence conditions accordingly. In particular suppliers should not be allowed to schedule installations without a customer's prior consent, or effectively increase the bills of those who refuse a smart meter by reserving their best prices for those who do. Suppliers caught acting in this manner by Ofgem should also face more stringent penalties for each individual offence.

5. Regulate the Meter Asset market

Exploitative 'deemed rental' costs by Meter Asset Providers have led to phenomenon of functioning SMETS 1 meters being needlessly replaced. As this issue could well affect SMETS 2 meters, the government must seek an understanding with suppliers and MAPs, to ensure such exploitative costs are no longer charged.

If an industry wide agreement is not come to, then the government should look to alter MAP license conditions, or introduce new regulations to prevent rental costs being set so high, that it is cheaper to simply replace the meter.

6. Recommend the best tariff

Suppliers should be made to utilise the detailed data they now receive from smart meters to annually recommend the best tariff their customers could be on.

7. Limit back-billing

Recent changes have reduced the time limit which suppliers can back-bill a customer for, to a maximum of 12 months. This however still allows for suppliers to issue significant shock back-bills following smart meter installations, which can run into high hundreds.

Suppliers should therefore not be allowed to back-bill a customer for energy used more than 6 months previously. As some consumers have also been driven into debt due to demands for immediate payment in full, all suppliers should also be made to offer each customer a payment plan.

8. Automatic compensation

A fundamental rationale behind the roll-out was that making energy more 'visible' will allow customers to reduce their consumptions. When smart meters malfunction not only are customers denied the visible information they need to produce savings, they can also be issued with incorrect and often very high bills.

As with broadband, energy customers should therefore be automatically compensated for each day their meter malfunctions, without having to actively claim the money.

9. Introduce but regulate time of use tariffs

Another fundamental rationale behind smart meters was that they would enable the introduction of time of use tariffs. While these were planned to be introduced in 2018, their mainstream introduction has now been delayed until after the 2020 roll-out ends. BEIS and Ofgem should therefore work with suppliers to ensure these tariffs are rolled out as soon as possible, to allow consumers to make the most from their smart meters.

The must however, also monitor the introduction of ToU tariffs to ensure they do not result in traditional tariffs increasing, that customers are not switched to them as standard, they are not used to circumvent a price cap, and that peak-time costs are not disproportionately increased.

10. Implement a Data 'Control Point'

The government committed itself to conducting a full review of the smart metering Data Access and Privacy Framework in 2018. Following that review it should establish a single data control point where consumers can see who is accessing their data, when they did so, and why, along with querying and stopping access to that data. This is a concept that Citizens Advice has done significant preparatory work on under its 'Data Dashboard' concept and the government should accordingly work with them to implement this control point.

Conclusion

Having conducted a comprehensive investigation in to the roll out of 53m energy smart meters, BIG has therefore found that it has been plagued by a series of technical, commercial, economic and regulatory issues.

The result of these has been repeated delays, cost increases, and reductions in expected consumer savings. While energy suppliers can be confident they will see significant savings from the roll-out, consumers have been left with outdated meters, presently bear all the programme's risks, and have been left with no guarantee they will see a return on their as yet £11bn investment.

In response to these issues, this report has put forward the case for urgent government intervention in the roll-out, and provided a number of recommendations for it, Ofgem, and energy suppliers.

In particular, BIG believes that government must first provide clarity over the roll-out target, and in light of present and predicted delays reassess the programme's timetable and economic case. When doing so it must provide more transparency over the true amount which consumers can realistically expect to save. Suppliers must also be better held to account for their many failures to date, and made perfectly aware that further delays, for example regarding SMETS 2 meters, will not be tolerated.

Ofgem must also be explicitly tasked with curbing excesses in the relevant markets, whether that is energy suppliers passing on roll-out costs but not sufficient savings to consumers, or meter asset providers driving commercial interoperability.

Finally, energy suppliers should introduce a number of straightforward measures to improve their customer's experience, including annually recommending the best tariff they should be on, limiting back-billing to 6 months, automatic compensation for meter malfunctions, and implementing a single customer data control point.

After those recommendations are introduced, BIG believes that energy smart meter roll-out can be set back on track to deliver the customer, industry and national benefits it was introduced to do.

Further Quotes from Parliamentarians

Giles Watling MP

“For this amount of money, managers should be held responsible for any delays or cost increases that occur. We must get this right and deliver for consumers.”

Steve McCabe MP

“The commercial problems are causing the biggest issues with the smart meter roll-out for both consumers and suppliers. There are commercial and cost sensitivities surrounding the “opt-in” design of the roll-out, the way the obligation to install meters is measured and the design of the energy price cap, all of which should be urgently reviewed.”

Rt Hon Ken Clarke CH QC MP

“Personally, I have been declining to have a smart meter fitted in my home, until I can be absolutely sure that I will get a second generation meter that will not put any difficulties in the way of changing supplier if I ever wish to do so. It is absolutely scandalous that utilities are still providing smart meters which discourage their customers from considering switching and try to keep them captive in their old contracts.”

Rt Hon Sir Ed Davey MP

“The delays in SMETS2 have begun to threaten the extent of the benefits of the smart meter roll out - especially for easier, faster switching and greater competition. The case for stopping more SMETS1 meters being used to hit targets and even delaying the deadline to allow the SMETS2 market to develop is becoming overwhelming. And even if the deadline is pushed back, we need to greater transparency on the new DCC trials on software to enable some SMETS1 meters to be upgraded to enable switching.”

Rt Hon Norman Lamb MP

“Current technical limitations mean that millions of customers with early smart meters effectively have to choose between ‘smart’ or ‘switch’. They can either enjoy the benefits of smart metering—with their current energy usage displayed in pounds and pence to help them monitor their spending—or they can take advantage of better tariffs by switching supplier, but with their meter functioning in ‘dumb’ mode. That’s not a great choice to have to make when thinking about how to keep your energy bills down.”

“The BIG report rightly recognises that smart meters are an important part of setting up a ‘smart grid’ to prepare for the different ways that we will produce and consume energy in the future. That means it’s in everyone’s interest that the roll-out delivers smart benefits for everyone. The Government will need to pay close attention to the progress of the rollout and the recommendations in this report.”

The Lord Teverson

“Smart meters are a major national investment key to our future flexible, decentralised and smart energy systems. So we have to get this project right. But the roll out is not going to plan and risks a failure in public confidence. That’s why the programme has to be re-engineered, now.”

Martin Vickers MP

“My priority is to ensure that constituents have access to cheap and reliable energy. This report indicates that there have been serious failings in the roll-out to date. There is clearly a need to press both the Government and industry to respond quickly and improve their operation.”

John Lamont MP

“While the roll-out of smart meters is a laudable aim, this report uncovers some serious issues around how this is being delivered. Smart meters need to be delivering real benefits to energy customers and roll-out costs should not be unfairly passed on to consumers. The Government needs to look closely at these recommendations.”