Retail energy policies in Britain: Towards 2020

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The Association for Public Service Excellence (APSE) is a not-for-profit local government body working with over 300 councils throughout the UK promoting excellence in public services. APSE is the foremost specialist in local authority frontline service provision in areas such as waste and refuse collection, parks and environmental services, leisure, school meals, cleaning, housing and building maintenance and energy services. APSE leads a research programme exploring a range of issues which impact upon both local authority frontline services as well as strategic public policy issues.

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Executive summary

The policy issue of retail (domestic) energy in the UK has taken on a very high media profile over the past few years. A number of separate, but related issues have coalesced into making domestic energy bills a front line political agenda item. The legislative needs of agreed CO_2 emission reductions, when combined with a domestic housing stock that, is to say the least pensionable and seriously over emitting CO_2 has meant keeping homes warm is not a cheap option. Yet whilst domestic energy usage has fallen by over 6% average dual fuel domestic energy bills have risen by over 70% in under a decade.

The political heat on the issue has been turned up during the Coalition Government's tenure following the Leader of the Opposition's promise to freeze domestic energy bills for two years should he become Prime Minister in May 2015. The markets have also blown hot and cold over the issue, especially in the aftermath of the "Miliband Promise".

Energy policy temperatures have remained high since that time with the government scaling back on "green levies" aimed at providing funds to speed up the diversification and modernization of an aging energy generation infrastructure and increasing the amount of renewable energy available. The announcement of the Competition and Market Authorities (CMA) of a full inquiry into a domestic retail energy market following the the Office of Fair (OFT) Trading and the energy market regulator Ofgem's opinion describing the domestic energy market as "not working as well as it should for consumers" has kept the issue firmly in the inferno of policy debate.

Whilst the CMA investigation churns on there are clear opportunities for new players to come into the energy market to answer the Prime Minister David Cameron's call for "more competition". As in the case of the banking industry where new, more local "challenger" banks have been specified as a policy option, so more localisation of retail energy supply has been called for to power the nation's home. A new Community Energy Strategy (CES) has been launched by the government, aimed at replicating similar success in other parts of Europe. But does it go as far as it needs to, or have the diversity of domestic energy markets in other European countries?

It is clear that strong leadership is required to address this policy area, at both a national and a local level. Furthermore, in the fall out period of post referendum Scotland the call for more power, both politically and of a generated type to be provided locally adds an important dynamic to the overall debate.

Whilst the outcome of the policy debate is still uncertain, the need for new and more dynamic policies to meet the looming challenge of 2020 CO_2 emission targets and cheaper domestic energy bills can be seen as two sides of the same energy policy coin. By looking at the current UK policy situation in the domestic energy market place and overseas this paper attempts to show opportunities for innovation whilst still thinking globally by acting locally.

1. Introduction

1.1 Key coalition government retail energy policies

Since coming to power in May 2010, the Conservative / Liberal Democrat (Coalition) government have spent a significant amount of policy effort on retail (domestic) energy saving initiatives. Upon taking office the Coalition already faced a number of challenges in dealing with UK CO_2 emissions reductions targets such as the Climate Change Act (2008) [1] introduced by the previous (Labour) government and those at the international level such as the EU 2030 Framework for Climate and Energy Policies [2] which proposes a 30% cut in green house gas emission from the 1990 levels by 2030.

As well as the targets themselves the government took office at a time of austerity following the financial crisis of 2008 but the new Prime Minister, David Cameron still committed his administration to be the "greenest ever" [3].

1.2 The UK domestic housing stock

The "greenest ever" government policy pledge by the Prime Minister was indeed a bold one. Not only given the issues of deficit reduction pledged at the same time by the Chancellor, George Osborne [4], therefore making government resource harder to come by, but in reference to sate of the UK housing stock itself. Approximately 30% of all UK CO_2 emissions emanate from residential consumption with electricity and gas usage the major contributors [5]. According to the Department for Communities and Local Government's (DCLG) report of 2010 [6] over 21% of England's 22.2 million dwellings had been built before 1919, a further 16% built between 1919 and 1945 and only 12% had been built since 1990. The report stated that England had one of the oldest dwelling stocks in Europe. The report also noted that CO_2 emissions ranged from 4.0 tonnes in the more modern housing association properties to 7.0 tonnes in the older private properties. With an age profile weighting the average emission amount was calculated to be 6.3 tonnes per year.

Standard Assessment Procedure (SAP) ratings, the governments preferred measurement of building energy efficiency) [7] for the dwellings assessed ranged from as low as 23 for the average pre 1919 properties to a mean average of 60 for new housing association properties built in the 21st Century. It should be noted that the SAP rating scale has been set so that SAP 100 is achieved for a zero user of energy and it can rise above 100 if the dwelling is a net exporter of energy.

The Coalition also faced a second, and equally pressing issue, that of finance to deliver on the legislated requirements. Non governmental estimates indicated that about £4,000 would be required to cut domestic energy bills in half for every one of the 8,000,000 low income homes in the UK [8]. There is however, little evidence to show that many (if any) of those low income customers would be able to fund the necessary energy efficiency improvements. Therefore some sort of government incentives to produce the investment was required.

1.3 The Green Deal

The Coalition Agreement [9] recognised these issues, and from a policy perspective addressing domestic energy efficiency installation into existing buildings (retrofit work) was an agreed priority. The 2011 Energy Act [10] brought forward the Coalition's key proposals to address this issue under the title "The Green Deal" [11]. This targets ordinary domestic energy users aiming to reducing energy bills over the long term by the improvement in energy efficiency in their homes. Property residents pay for some, or all, of the energy efficiency improvements over time through their domestic electricity bills. The government

financial policy benchmark for domestic participants in the scheme is that repayments will be no more than what a typical household should save in energy costs.

However, energy savings from efficiency improvement measures are not linear in benefits terms. The UK Energy Research Centre [12] noted that "rebound" against energy efficiency measures can be significant. Rebound occurs when installed efficiency measures encourage higher usage of resource. Direct rebound effects in Organisation for Economic Co-operation and Development (OECD) countries can reach 30%. To date the effect of "rebound effects" has not been analysed to asses how much it offsets monetary gains through increased consumption in Green Deal properties.

The Coalition stated that the purpose of the Green Deal was to create a new market for energy efficiency, with well-known brands, local businesses and community organisations such as local authorities, termed the "Green Deal Provider" (all government registered) competing to deliver energy efficiency works for the consumer [13].

Properties are assessed by qualified and certified independent assessors to identify what works (termed "Measures") that would reduce energy usage and thermal performance. Measures include cavity walls, loft insulation, improved glazing and heating or boiler controls. As UK domestic energy is used mostly for space heating (54%), lighting/appliances (29%) and water heating (14%) [14] Measures to address these aspects are focused upon.

Energy bill and carbon savings for a building are then calculated for using the Reduced Data Standard Assessment Procedure (RDSAP) [15] resulting in a building Energy Performance Certificate (EPC) and Green Deal Plan (GDP). Signed by an energy supplier, building owner / resident and the Green Deal provider the GDP defines what costed energy efficiency works will be implemented. It also includes as the repayment mechanism (from electricity bill reductions) and interest charges. The cost itself is attached to the meter point of the building and will transfer with the property when is sold or transferred, and is therefore not a personal loan but a property loan.

In order to comply with the concept of the Green Deal, a "Golden Rule", described by the Department of Energy and Climate Change (DECC) as a 'fundamental principle' has been developed [11]:

> *"At the heart of the offer is the golden rule: estimated savings on energy bills should always equal or exceed the costs of the works."*

This links targeted outcomes of long term energy consumption reduction for the building with the recovery of the energy efficiency investment. However, the "Golden Rule" DOES NOT and cannot guarantee that the overall energy costs for the consumer or building owner will not increase over the loan period.

"Pre Measures" building electricity bill (gas bills are not included) amounts continue to be paid as the cost of its electricity whilst the consumed units should fall once the Measures are completed. The "cash surplus" produced is then used to pay for the works.

Money passed to the Green Deal Provider is proportional and if there is insufficient to meet the costs or the bill not fully paid, the electricity provider and the Green Deal Provider share the loss, in accordance with the proportion of the bill that relates to the Green Deal works. In this way, the Green Deal system runs in tandem with the existing electricity bill arrangements.

1.4 The energy company obligation (ECO) (2012)

On December 4th 2012 Parliament passed the Electricity and Gas (Energy Companies Obligation) Order [16]. Running until March 2015 it had approximately £1.3 billion allocated to it to support the installation of energy efficiency measures in low-income households and areas, and in properties that are harder to treat. It replaced the Carbon Emissions Reduction Target (CERT) [17] scheme and the Community Energy Saving Programme (CESP) [18] initiated by the previous government.

Energy suppliers were provided with mandated targets, notably the Carbon Emissions Reduction Obligation (CERO). The policy aim was that CEROs' were to be met or paid for by suppliers assisting domestic users of energy in delivering Carbon Qualifying Actions (CQAs). These included insulation to cavity walls and solid walls or connections to district heating systems. The overall targets for these actions for the period 1st January 2013 to March 31st 2015 were nationally to:

- Reduce carbon emissions by 20.9 $MtCO_2$
- Deliver a Carbon Saving Community target of 6.9 $MtCO_2$ and
- Reduce home heating costs by £4.2 billion.

All "Big Six" energy companies were subject to the ECO although only one was the funder of a particular housing energy efficiency project in an area. The policy enabled any resultant CO_2 saved to count towards the target for the funding company. The policy also enabled work on local authority / social housing to promote similar work to be undertaken on nearby privately owned properties with any required balance in funding provided by the Green Deal.

The policy defined three categories of energy efficiency funding but allowed any property to benefit from only one, even though it may qualify for more, namely:

(i) Carbon Saving

Focusing upon "hard to treat" and properties that do not comply with the Golden Rule under the Green Deal such as solid wall properties this category had the largest allocated element (£760 million pa 2012 figures). In this way ECO includes the very energy inefficient (and therefore very high carbon emitting) properties in the overall policy. Wu and Bahaj [19] evaluated the costs involved on a local authority housing estate in Southampton that contained over 100 hard to treat properties. Without the carbon saving element of ECO such properties would fall outside the Golden Rule and therefore would have been excluded.

(ii) Carbon Saving Communities (CSCs)

An annual £190 million was allocated to CSCs (2012 figures) of which 15% had to be available to rural, low income settlements with a population of less than 10,000. Works in such areas can include cavity wall, loft and solid wall insulation. For areas of the UK defined as "Lower Super Output Areas", equating to the most disadvantaged in the UK when assessed in terms of indices of multiple deprivation, those in the bottom 15% of this group also qualified under ECO as CSCs.

(iii) Affordable warmth

Especially targeted at the private rented (non-social housing) sector, £350 million p.a. (2012 figures) was allocated to heat the properties of low income households. Eligibility criteria for these funds related to those on benefits, with children or older people in residence. However, further clarity on the access to such funds is seen to be required following criticisms by a group of UK churches [20] of the changes to the benefits regime for housing introduced by in April of 2013.

As a mechanism for assessing the impact of the policies the Coalition set targets to be reached for ECO. For Affordable Warmth, the target set was a £3.4 billion reduction in the lifetime costs of heating homes whilst for Carbon Saving it was a saving of 0.52 million tonnes of CO_2 per annum [21].

1.5 Local authority involvement in the Green Deal and ECO

Cirrel [22] noted the importance placed upon the delivery of domestic energy saving policies by government on local government. This included the importance of local authority participation in ECO, without which the Green Deal could be less effective. Using their stewardship and place shaping roles local authorities had the potential capacity to galvanize communities and areas into engaging with energy efficiency directly as landlords and as a way of assisting the most energy inefficient properties to be treated and as enablers of the policy to overcome identified problems with the Golden Rule, because:

- more significant works (particularly solid wall insulation) are too expensive to meet the Golden Rule;
- lower income households often insufficiently heat their homes and so the normal 'savings' might not be there. This would therefore mean that the Golden Rule would again fail to be complied with.

The role of local authorities in the overall delivery of the energy policy agenda took a significant step forward with the introduction of the Association of Public Service Excellence's "APSE Energy" collaboration of over 30 local authorities, launched by the Secretary of State Ed Davey in June 2014 [23].

2. Economic impacts on UK retail energy

2.1 Rising domestic prices and falling domestic consumption

For the period 2006 to 2013, UK domestic annual energy price rises (year on year) ranged from 6% to 15% for household gas and electricity bills[1] [24], (Figure 1). Whilst consumption trends (temperature-corrected) in the same years showed reductions of up to 6.8% for gas (Figure 2) and 9.9% for electricity (Figure 3) [14]. Overall this resulted in a drop of 14% in domestic gas and electricity consumption (Figure 4) but in cash terms average household domestic energy bills doubled from £760 a year in 2006 to more than £1,300 in 2012 [14], a total rise of over 71% (Figure 5).

Figure 1 Percentage UK year on year domestic energy price rises 2006 - 2013

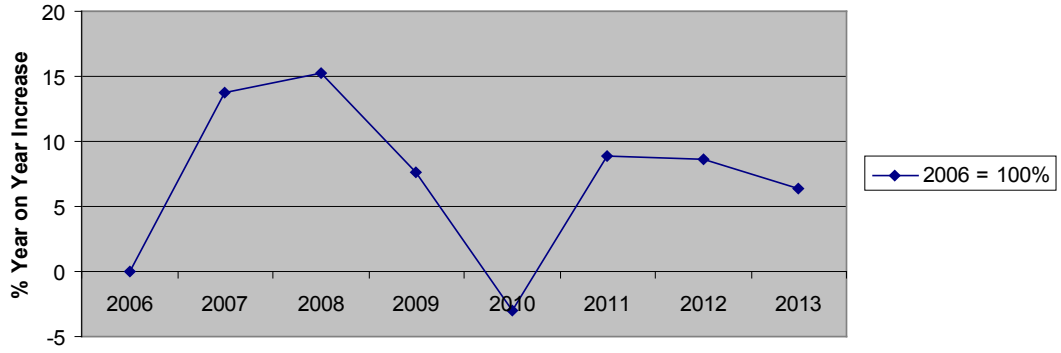


Figure 2 Domestic Gas Consumption 2006 – 2013 (in ktoe – thousand tonnes oil equivalent)

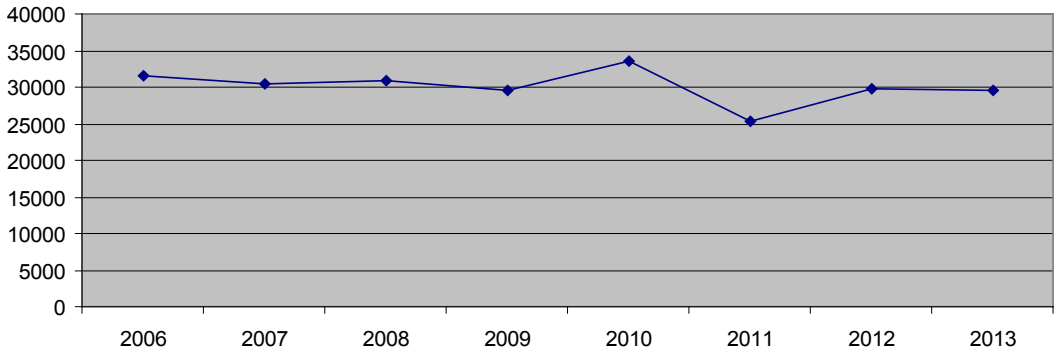
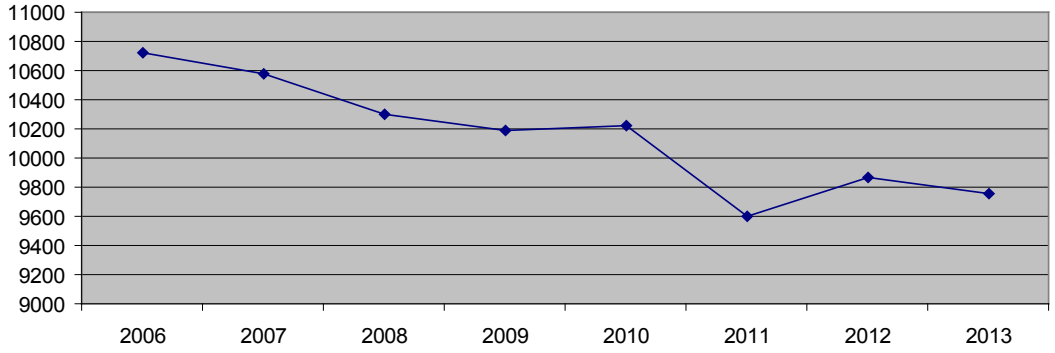


Figure 3 Domestic Electricity Consumption 2006 – 2013 (in ktoe – thousand tonnes oil equivalent)



1. Based on annual consumption average of 3,800 kWh electricity and 15,000 kWh gas per household

Figure 4 Overall Domestic Energy Consumption 2006 – 2013 (Temperature Corrected) (in ktoe – thousand tonnes oil equivalent)

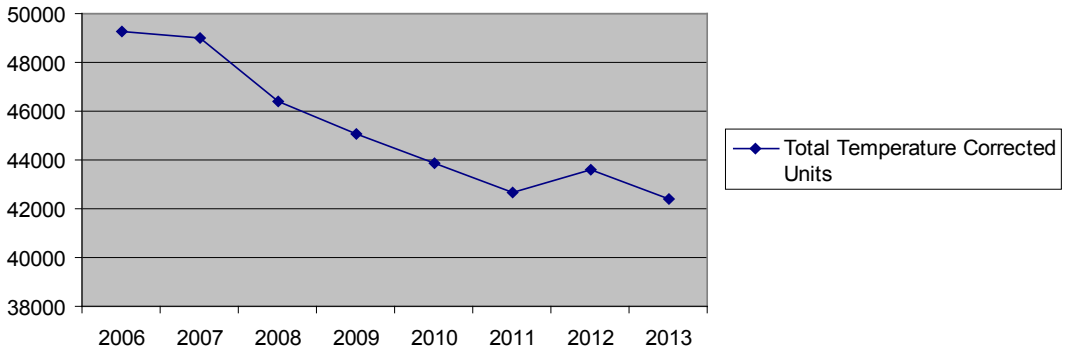
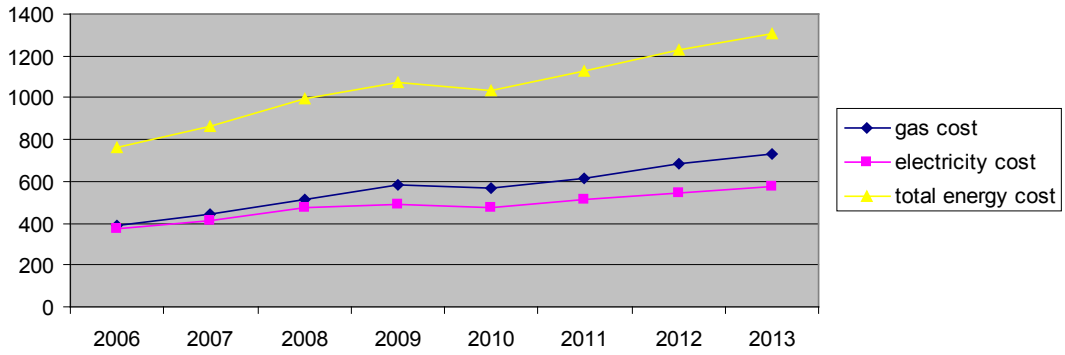


Figure 5 Average Domestic Energy Costs 2006 - 2013



2.2 Energy price rises and retail market responses

Such retail energy price rises had also resulted in other market changes as described by Head [25] in reference to figures released by Scottish and Southern Energy (SSE). As one of the "Big Six[2]" UK energy suppliers SSE reported that average UK domestic gas consumption per customer fell by 9.5% during the first nine months of 2013, compared to 2012, while electricity consumption fell by 4.3%. SSE also reported the loss of 250,000 customer accounts in the UK and Ireland during 2013, implying consumers becoming more willing to "switch" energy suppliers in search of better deals.

In November 2013 the Citizens Advice Bureau (CAB) reported that "Big Six" suppliers would have increased their prices by 37% between October 2010 [26] and December 2013. Furthermore, following the energy price rises announced in October 2013 the CAB saw a spike in people seeking advice about energy issues (bills). It reported that calls to its consumer service specifically about energy issues had doubled and more than 83,000 people sought help from its website. This was a 44% increase on the 33 days prior to the announcement of the price increases.

During the same period, (Oct 2010 – Oct 2013), average earnings rose by less than 5% and the recession in the UK meant that earnings growth was constrained. The Office for National Statistics earnings figures for 2013 [27] re-emphasized this point showing average earnings again rising less than inflation (average earning rose less than 2.2 % and the Consumer Prices Index rose 2.4%). The CAB research also showed that energy companies' prices had risen by 10.2%. This was at three times the rate of inflation during that time. The effect of bill escalation surveyed by CAB during first quarter of 2013 revealed that 5% of all domestic energy accounts were in debt, with 14% of clients with an energy problem indebted to their supplier.

2. British Gas, SSE, npower, E-ON, EDF and Scottish Power

2.3 The Miliband speech

Whilst the above facts and figures had generated much media concern it was a contemporaneous policy announcement by the Leader of the Opposition, Ed Miliband, a former Secretary of State for Energy and Climate Change himself, in his Leader's Speech at the Labour Party Conference in Brighton on September 24th 2013 [28] that really galvanized the whole issue of domestic retail energy policy when he announced:

> *"If we win the election in 2015 the next Labour government will freeze gas and electricity prices until the start of 2017. Your bills will not rise. It will benefit millions of families and millions of businesses."*

The proposal in the speech captured both the media headlines and struck a strong chord with retail domestic energy customers across the UK. The subsequent media headlines and debate resulted in swift, and wide ranging policy responses from the government and economic reaction from the market.

3. Responses to Miliband

3.1 The Autumn Statement 2013

The Chancellor of the Exchequer, George Osborne, delivered his 2013 Autumn Statement [29] containing specific responses to the Miliband proposal. In the statement Mr. Osborne said that he was helping families with their energy bills by concentrating on the levies and charges that previous energy secretaries had "piled on" bills. He went on to state:

> *"This week we deliver on the promise made by the prime minister to roll back those levies. The result: an average of £50 off family bills. We're doing this in a way that supports the lowest income families. Reduces carbon. Supports investment in our energy infrastructure. And as the document shows, does not add a penny to the tax bill families pay,"*

Prime Minister David Cameron had already made such a commitment in response to the Miliband speech [30] and the Autumn Statement placed the policy framework around it. The changes were characterised by reductions in green levies paid for by consumers via energy bills to energy suppliers (the "£50 cut") which the government determined was to be funded by a reduction in private sector energy levies.

Whilst the Autumn Statement was met with significant criticism as a watering down of the government commitment to combat emissions rises and fuel poverty by groups such as Age Concern and other lobby groups, the Carbon Price Floor, a tax that tops up the EU›s carbon price, which forces companies to pay a minimum price for their carbon dioxide emissions remained unaltered. This was set at £5 per tonne by The Treasury, rising to £21 per tonne in 2017. It is interesting that the Carbon Price Floor revenues are collected and retained by the Treasury and are not redistributed in the form of energy savings grants.

3.2 Government Green Deal revisions and "ECO 2.0"

At the Green Deal policy's outset the governments stated intention was to review ECO in 2014. However, in response to the Miliband speech this was brought forward to December 4th 2013, tied to the Autumn Statement [29]and coinciding with the first anniversary of the original Order. "ECO 2.0", as labelled by some, contained the following policy and financial revisions [31]:

- £90 million (of the overall announced £540 million package) was made available over the coming three years to boost energy efficiency. Targeted at improving the energy efficiency of public sector buildings, including schools and hospitals. An additional £30m was made available for each of the 3 years from 2014/15 building on the existing public sector energy efficiency loans programme (SALIX);
- New incentives and support aimed to boost take up of energy efficiency measures for both households and the public sector. £150m was allocated for the three years from 2014-15, and was designed to reward new rather than replacement energy efficiency improvements. The aim there was to dovetail with the Green Deal to leverage private finance;
- A quadrupling of the money available to English local authorities in 2013 – 14 (up to £80m) to promote the Green Deal on a street by street basis;
- The Green Deal cash back scheme was to stay open aimed to incentivize the delivery of hard to treat cavity and solid wall insulation.

The proposed changes to the original Order were also seen to be of potentially significant impact to anyone trying to (or even those who already have) accessed the Green Deal / ECO via a contract with an energy supplier. The key aspects of these changes were:

- Reducing the Carbon Obligation (CERO) target by 33% whilst keeping the 2015 Carbon Saving Community Obligation (CSCO) and Affordable Warmth (AW) targets the same;
- Extending the ECO scheme to March 2017 with new targets for CERO, CSCO and AW at 2015 levels;

- Enabling energy suppliers to carry forward any over delivery against 2015 targets to count towards their 2017 targets;
- Enabling energy suppliers to carry forward over-performance from the predecessor schemes (CERT/ CESP) and count it towards their ECO targets;
- Allowing companies which have delivered substantial early progress against their current CERO target to benefit from an uplift in scores for the measures delivered;
- Extending the CSCO element of ECO from the 15% to the 25% lowest areas on the Index of Multiple Deprivation and simplifying the qualifying criteria;
- Including District Heating as an allowable primary measure under CERO;
- Including loft and easy to treat cavity walls as an allowable primary measure under CERO;
- Introducing and standardizing measures to prevent fraud, particularly around loft and easy to treat cavity wall insulation;
- Introducing solid wall minima set at 100,000 measures to be delivered by 2017 across all companies and all elements of ECO.

Response to these proposals, particularly from Local Authorities, Non Government Organisations (NGOs), and private companies involved in the Green Deal were largely negative. This was due to the view that the proposals were aimed at excluding many of the hardest to treat properties, Armitage and others [32].

The reduction in resource availability as a result of "ECO 2.0" was seen to add more barriers to the existing problems of a previous sustainability study by Ko and Fenner [33]. They noted that the efficient housing initiative in the UK already suffered from a gap between construction regulations and best practices in Europe. They further concluded that the construction industry's actors impede the adoption of efficiency measures. Such barriers were further aggravated by planning conflicts, lack of persuasive information and unredeemable costs.

DECCs primary policy aim was stated to be to ensure that the impact of the changes proposed to ECO as a result of the Green Taxes review (a reduction on what energy companies have to contribute to ECO) was "carbon neutral". Further research on the success or otherwise of this aim will be required over the coming years given the reduction in cash available to ECO as a result of the green taxes reduction.

3.3 Energy market reaction

If the policy response to the Miliband proposal was swift by government and bureaucratic standards, the reaction from the market was immediate and uncompromising. Key figures from across the industry were swift in their condemnation of the proposal. Within hours of the speech being made on the 24th September 2013, various senior industry executives had responded, as noted by Gosden [35]. The responses are perhaps best characterised by the remarks of Alistair Phillips-Davies the Chief Executive, SSE:

> *"We need to do all we can to keep energy prices affordable. At the moment the actual energy consumers use makes up just half of a dual fuel energy bill.*

Well intentioned Government policies to promote household energy efficiency and renewable energy, supported by all parties, have been placed on energy bills and are rising significantly in cost.

Instead of price freezes which will lead to unsustainable loss-making retail businesses, the Labour Party should put policy costs into general taxation, taking them off energy bills. This would wipe £110 off the average person's bill and shift the cost away from those who can't afford to pay and on to those who can."

The stock market responded with an even greater speed, with companies within the FTSE 100, which lists both Centrica (British Gas' parent company) and SSE amongst its index registering immediate falls in share price. At the start of trading on the 24th September SSE's share price was £15.80 and Centrica's was £3.96. By close of business they had fallen to £14.89 and £3.75, drops of 5.8% and 5.54% respectively. Their share prices continued to fall with SSE reaching £13.00 on 9th December 2013 (a drop of 17.8%) and Centrica falling to £2.86 on 14th October 2014, a drop of 27.8%.

Subsequently, in response both SSE [36] and British Gas [37] announced energy price freezes until January 2016 and 2015 (undetermined) in the spring of 2014 (March and May). These commitments were also echoed by other "Big Six" providers over this period e.g. E-ON [38].

4. Retail energy policy delivery challenges

4.1 Green Deal Plan delivery

In its first year of operation (2013) the government's Green Deal target was that 10,000 Green Deal Plans (GDPs) would have been implemented / signed. Research by the UK Green Building Council [39] highlighted that a year on from its launch, fewer than 1,500 households had signed GDPs, with less than 500 homes having actually installed energy saving measures using the finance. The same figures used by the report from DECC [40] also showed that there was a slow rate of increase, with the number of plans in progress rising from 1,478 to 1,612 over the course of the twelve months of the scheme (December 2013).

Whilst many reasons can be sited for this slow take up, two seem to be of significant importance:

i) Scheme interest rates

The Green Deal Finance Company (TGDFC), the industrial consortium introduced to optimise the delivery of energy efficient homes to customers, published its annual interest rate at 6.96% in January 2013 [41]. In addition, the Green Deal provider guidance [42] allows an annual uplift factor of 2% to be applied to the capital (keeping the interest rate fixed) in order to allow full financing of advanced improvements.

Consequently many GDPs have an interest rate of about 7% at a time when interest rates are at an all time low for borrowing (headline figure of 0.5% base rate). In such circumstances it is hard to justify or explain why individual GDP borrowers are required to pay over 14 times the Bank of England base rate.

Hailston [43] noted MPs concerns about issues around interest rates and communication which included the statement by the Chair of the Environment and Climate Change Select Committee, Tim Yeo:

> *"By its nature this kind of scheme also only appeals to a certain section of the population who are in a position to take out loans on home improvements,"*

ii) Public awareness and understanding of the GDP and its payment mechanisms

In the same paper speech Yeo added:

> *"Extra incentives certainly need to be considered, as the Government's flagship pay-as-you-save finance scheme, the Green Deal, has only delivered a fraction of the expected benefits so far."*

His comments also help bring attention to another potentially important set of issues with the public understanding of the Green Deal, and the Golden Rule in particular. Consequently, the way in which GDPs are "sold" to householders needs careful attention to detail and a comprehensive and straightforward explanation.

To this end, communication with prospective and current GDP customers must include aspects of "rebound behaviour", inflation and supplier price rises. Such clarification would put into perspective the possible consequences of treating a property. Whilst a GDP will improve thermal efficiency and reduce energy consumption, the issue that it cannot always guarantee a reduction in bills must also be clearly explained. In addition, it is suggested that GDP payback periods should also have a regular "refresh" as the measures take effect. This will help ensure customers appreciate what benefits are being delivered from the works, what savings are being made in energy usage and how they are funding the initial investment repayment plan.

Whilst the Green Deal Oversight and Registration Body (GDORB) monitors compliance to its Code of Practice (CoP) by providers, (along with issuance of approved quality mark licence), it is suggested that convincing evidence of monitoring and reporting schemes for customer support requires much more visibility and transparency. This omission is seen to be a serious risk to increasing future GDP sign up and may prevent current GDP customers from endorsing the process and approach of the scheme.

Furthermore, at a time of significant energy price inflation, some sort of ongoing monitoring / reporting support for GDP customers, on the lines of the Citizens Advice Bureau, could have significant benefit for policy delivery outcomes.

A study on uptake motivations [44] indicates that individuals or couples residing in rented flats or semi-detached properties are enthusiastic on energy saving retrofits. However, landlord and regulatory permissions pose major barriers to this initiative. If the Affordable Warmth element of the Green Deal is to be maximised further policy focus to ease these aspects, such as building regulations reform or a landlord-tenant incentive split should be considered. Recent discussions with Southern Landlord Association members in Southampton indicate high interest rates and poor communication and marketing of the scheme are central causes for low uptake.

In response to these concerns, the Coalition allocated £1.9 million to help re-promote and advertise the scheme. Much of this resource was targeted at local authorities, as such organisations across England had not been as high profile in its roll out as might have been expected. The Coalition intended that this new resource allocation would assist in their engagement with the policy.

iii) Financial Issues

Whilst the December 2013 revised Order did reduce resource availability there can still be seen to be a clear appetite for energy efficiency improvement in the UK. The overwhelming response to the launch of the Green Deal Home Improvement Fund (GDHIF) in June 2014 demonstrated this enthusiasm. In fact response to the offer of up to £6,000 in grants to householders to improve the energy efficiency of their dwellings was so great that the government closed the fund to new applicants six weeks later [45] as all of the allocation had already been used up.

Hailstone [46], noted that a few weeks later, the financial underestimation led to further parliamentary concerns about the overall viability of the Green Deal Finance Company. Such concerns raised by the opposition were countered by DECC who stated [47] that whilst the GDHIF had closed due to oversubscription over 21000 applications had been received and by the end of July 2014 £2.3 million had already been paid out in vouchers. The vouchers have a six month redemption life and DECC were confident that 99% of applicants were committed to carrying out the required work.

Worries about the overall viability of the Green Investment Bank itself were also dismissed by DECC who in November 2014 stated that over £25 million worth of home improvement plan applications were now in place, Hailstone [48].

4.2 Local government delivery implications of "ECO 2.0"

The December 2013 changes to ECO could have significant implications for the size of the scheme as initially introduced. The most important of which revolves around the reduction in CERO targets by 33%. APSE [49] has indicated a risk of a significant reduction in resource available to ECO for local government over the coming 3 – 5 years. If the original scheme's estimated total allocation of £1.3 billion is reduced by 33% as stated in the December 2013 change, it potentially equates to a third of a billion pounds being lost to the ECO schemes by 2017.

Regardless of the actual cut in resource available, the other proposed changes will also result in the "slowing up" of individual ECO scheme delivery. This is simply because the new proposed target levels for 2017, which is the new proposed end date, will be based on the 2015 goals and any over delivery against the original 2015 targets are to be carried forward after that date. Furthermore, any supplier over delivery against the 2015 targets will also benefit from any uplift in scores for the Measures delivered. This "over delivery" reward will be further increased as suppliers will now be able to carry over any extra delivery from the previous CERT and CESP schemes which ECO and the Green Deal were introduced to replace.

Whilst extending the CSCO element of ECO from the 15% to the 25% lowest areas on the index of Multiple

Deprivation, will include more areas and homes, it must, by definition, dilute (to some degree at least) the attention given to the lowest 15% as a consequence.

5. Conclusions

5.1 Future scenario predictions

The government's official stance to date has been to quantitatively demonstrate that its energy and climate policies are tempering the bills burden through a "control cushion" [50] which are achieved by comparison with a "do-nothing" approach. However, a scenario analysis by Consumer Focus [51] advocates a "do-more" strategy, which intensifies efficiency investment by the government while finding ways to pass funding burden from bill-payers to shareholders.

These scenarios have permutated the magnitudes of various factors, such as rebound effect, efficiency investment, government spending and duty reductions (including VAT). Key findings indicate investment scenarios to be most productive for GDP and economy in general. For scale control, initial investment could be restricted to homes that are treatable for under£10,000. By 2027, such a programme is predicted to create 52,000 jobs, reduce annual bills per household up to £212 and alleviate 6.8m homes from fuel poverty. It would also reduce emissions by 5% in 2027 compared to the baseline of 2011.

The opposition response to this approach has been to focus upon a "cold homes" in an energy efficiency green paper launched in September 2014. This focuses upon making available free energy efficiency grants to 200,000 low income homes a year over the lifetime of the next parliament and provide interest free loans for energy efficiency measures to a further 1,000,0000 households [52].

5.2 Government policy responses to Miliband

There can be no question that energy policies in the UK were placed in a state of flux in response to the Miliband speech. Indeed, the Leader of the Opposition further "cranked up" the policy and economic pressure on the government and energy companies in the Spring of 2014 by forcing a parliamentary vote on an immediate energy price freeze [53] which was defeated by the government by 275 votes to 248.

This pressure was further increased in June 2014 by Ofgem's (the energy regulator) decision to refer the UK energy market to the Competition and Markets Authority (CMA) for a full inquiry and investigation. This was based upon their concerns about how the energy market was working in the UK [54]. The inquiry was called for in light of the findings of a recent assessment of the energy market, prepared by Ofgem with the Office of Fair Trading (OFT) and CMA [55]. This assessment showed that competition was not working as well as it should for consumers. It also showed an increasing distrust of energy suppliers, uncertainty about the relationship between the supply businesses and the generation arms of the six largest suppliers. Most importantly it highlighted rising profits with no clear evidence of suppliers reducing their own costs or becoming better at meeting customer expectations.

The investigation, whilst clearly deemed necessary by the competition body, will not report until the end of 2015 [56]. This will be after the next General Election, which is scheduled for May 2015. Therefore, unless interim findings emerge, there is little, if any, opportunity for the findings to become central to any policy discourse between the parties in the remaining period of the current Parliament. This means that the outcomes have been effectively "kicked into the long grass" as far as the General Election is concerned.

Similarly, given that the proposed "ECO 2.0" and Green Deal changes are still very recent it is highly unlikely that sufficient data will be available to assess the impact on energy savings policy before the May 2015 General Election either. However, the subsequent resource reduction is likely to have an impact in slowing down the overall goals of energy saving from domestic buildings across the country over the next 3-5 years.

Maybe the initial Green Deal / ECO targets were too ambitious to be delivered in a time of severe economic austerity. However, what is clear is that the recently proposed policy changes and associated resource

reductions will only make what was a very challenging target of CO_2 reduction from buildings by 2020 even more so.

5.3 Private sector responses to Miliband

Whilst a final policy impact assessment on Miliband's proposal may have to wait until the findings of the CMA inquiry there is little doubt that from a market perspective the proposal can be seen to have already been, to some degree at least, discounted. This can be seen to have occurred in the following ways in which "the market has (already) spoken":

(i) Getting the market ahead of the policy debate

Perhaps most importantly, the Miliband calls for energy bill freezes have already been responded to by the "Big Six" private sector companies in one way or another [36], [37], [38]. The outcome of this response can perhaps best be seen in the way in which the share price of SSE has fully recovered since the September 2013 announcement. Over a period of 13 months (from September 2nd 2013 – October 31st 2014) the FTSE price of SSE shares has fluctuated significantly from the £15.68 price it was on September 2nd 2013, down to a low of £13.00 on December 9th 2013, recovering to £15.99 on October 31st 2014, an overall increase £0.31p, or approximately 1.5%. In essence, therefore, at least as far as SSE is concerned (Figure 6), whilst there may be bumps in the share price road ahead, the initial impact of Miliband can be postulated to have already been totally discounted [57].

Figure 6. SSE versus FTSE 100 September 2nd 2013 – October 31st 2014

Interestingly, the same cannot be said for the other FTSE 100 listed "Big Six" energy company, Centrica, owner of British Gas. It has seen its share price fail to recover over the same period, and was still down approximately 22% from its September 2nd 2013 price on the same date that SSE had fully recovered its share price (31/10/14) [58] (Figure 7).

Figure 7. CNA versus FTSE 100 September 2nd 2013 – October 31st 2014

(ii) "Market Gain" from Green Levies Reduction

Furthermore, the cutting of green levies on energy companies in the Autumn Statement has been estimated to have saved the "Big Six" about £75,000,000 [59]. A part of this "saving" is as result of the fact that there has not been a total "pass on" of this levy reduction to retail customers. The same report noted an estimated five million households have missed out on the £50.00 rebate reduction altogether and that the energy companies will no longer have to pick up the cost of the Warm Home Discount, which gives vulnerable customers a £140 reduction on their electricity bill [60]. In these ways the money proposed to go to customers is not all being passported on to them by energy companies. Instead it can be postulated that it has helped the energy companies to discount the policies of both the Coalition and the Opposition and improve their bottom line at the government's and consumer's expense.

Interestingly whilst there has been significant media comment on the fact that energy companies are not passing on the full amount of the green levy rebate to consumers, it does not seem to have provoked any sustained or further response from policy makers. On average the Big Six are keeping an estimated £15.00 of the £50.00 rebate [61]. In this way the market has already gained from, and discounted, the government policy response to Miliband via the Autumn Statement.

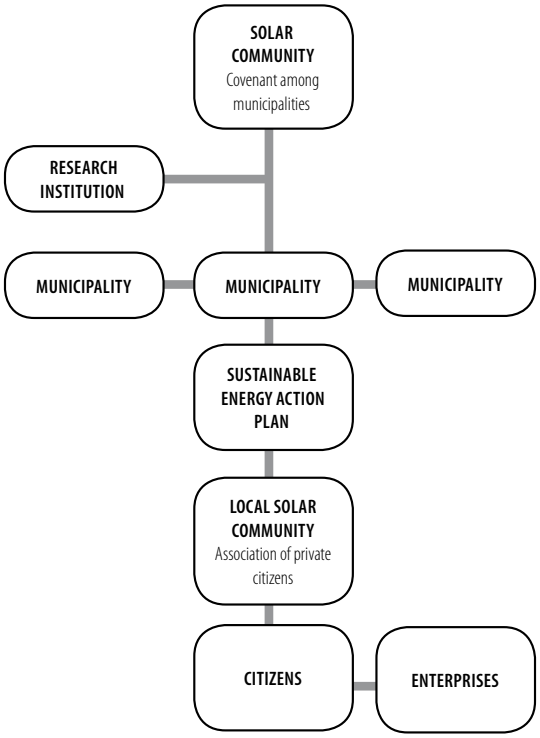
5.4 Think global - Act local

(i) "Local" Power Overseas

In continental Europe local authority policies on renewables often aim for direct involvement in retail energy delivery. Launched in March 2014 the Local Solar Community of Casalecchio di Reno in Italy is a good example of this approach. By providing a share of the 200 kWh of PV installed on its public buildings to local residents and businesses it has demonstrated a comprehensive approach to making solar energy a viable solution for its own community.

A Covenant amongst local municipalities tied to neutral monitoring of energy performance by a local University linked by a Sustainable Energy Action Plan has allowed the formation of a Local Solar Community to be developed giving energy savings benefits to local business and citizens. This is shown in Figure 8.

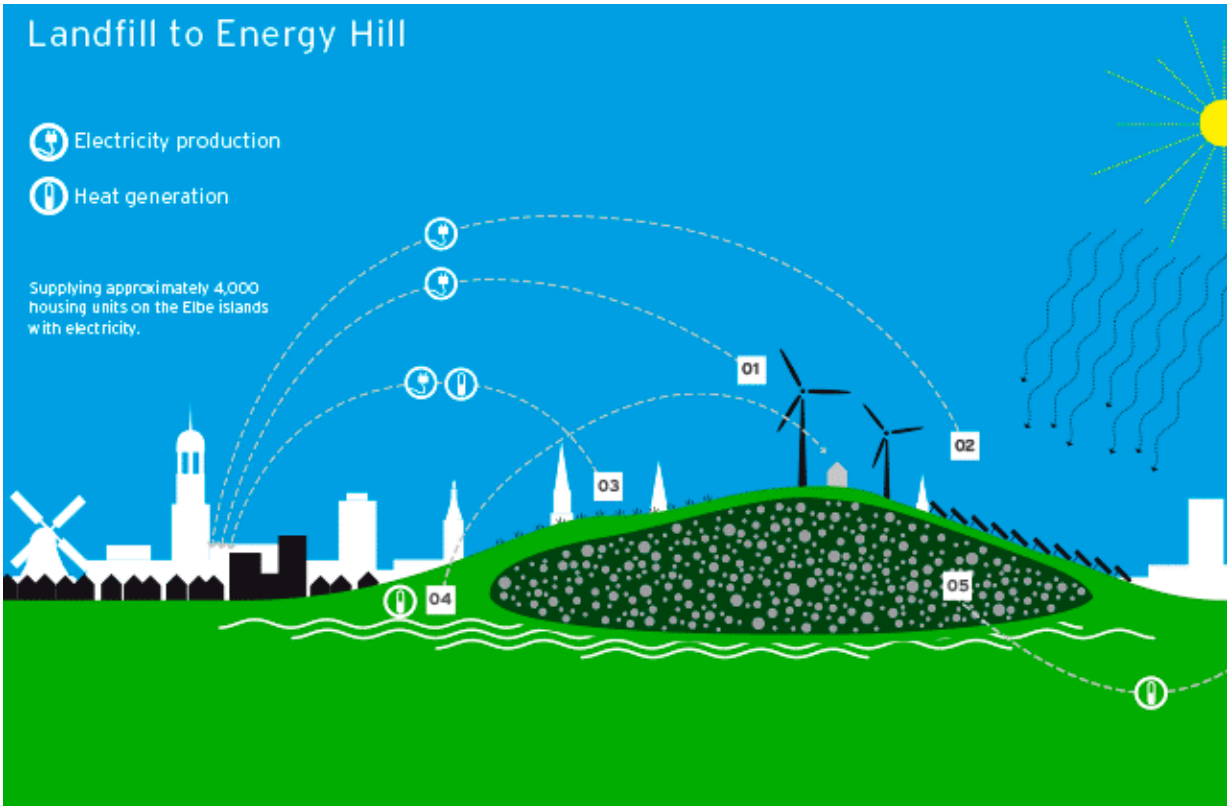
Figure 8. Local solar community structure in Casalecchio di Reno, Emilia Romagna, Italy



In Germany local authorities are even more proactive in the energy market. Many examples exist, including the linking of spatial planning to energy planning by Hamburg City Council and the delivery of the Hamburg Energy Hill (Energiberg). This has turned a local landfill site, similar to many in the UK, such as at Port Solent in Hampshire, into a renewable energy hub producing biogas, solar PV and wind electricity (Figure 9).

However, perhaps the most entrepreneurial of the German local authorities engagement with the municipal energy agenda is best demonstrated by Munich City Council purchasing shares in off shore wind farms in the North Sea from npower. As well as energy security such investments will also bring such authorities a long term revenue stream.

Figure 9. Hamburg "Energieberg"



Equally innovative new ways of breaking the traditional retail energy market cartel of a few large providers can be seen to de developing in North America where the city council of Minneapolis is also developing energy service company partnership activities with energy companies [62].

(ii) Devolution of Power in the UK

Since the launch of Community Energy Scotland in 2008 [63] over 1400 energy projects have been supported by the devolved Scottish administration. The results include the installation of over 6.75 MW of wholly community-owned wind projects and the distribution of over £15,000,000 of funds towards community energy projects between 2009 and 2014.

The Welsh Assembly's 2010 energy policy statement [64] also gave a clear commitment to further invest locally across the principality in the coming years. This built upon the almost doubling of renewable power generation that had taken place in Wales between 2004 (2.9%) to 5.1% in 2010 [65].

Similar energy policy focus has been undertaken by the Northern Ireland Assembly. This included co-operative work on energy security via the North/South Inter Parliamentary Association [66] with colleagues in the Republic of Ireland. A key aspect of this policy for Northern Ireland is to secure 40% of electricity consumption and 10% of heat consumption from renewable sources by 2020.

(iii) The Community Energy Strategy (CES)

Introduced in January 2014 the Coalition launched the UK's Community Energy Strategy (CES) [67]. The strategy was aimed at replicating the successful equivalent local generation capabilities already installed by community groups in countries such as Denmark and Germany. £15,000,000 was allocated to a Rural Community Energy Fund (RCEF) with a promise of delivering an equivalent £10,000,000 fund for Urban Communities (UCEF) by the end of 2014 [68]. Any proposal for rural energy development can receive up to £150,000 towards the planning and feasibility elements of the scheme while it is proposed urban schemes will receive up to £20,000.

Whilst any "localisation" of energy delivery is to be encouraged as assisting with the diversification of retail energy opportunities for consumers the strategies launch was not given wholehearted endorsement. Long term environmentalists like Porritt [69] criticised its lack of vision and scale especially bemoaning the limited size of the funds available and issues around matters such as gaining grid access and the continually changing approach to Feed-in Tariffs (FiTs). Instead Porritt argued for the need of an approach like the one advocated by the Low Carbon Hub [70] for a more cross cutting and locally integrated approach to community energy delivery.

(iv) Municipal energy in the UK

The more "point based" approach of the CES assisting individual community groups like rugby clubs and community centres adding PV on to their building roofs has clear specific benefit to the parties involved. However, the challenge in delivering truly community-wide energy benefits to in areas needs significant cultural and technical assistance. Yet the role advocated by the CES for local authorities in the England seems more restricted than community place shaping. This is shown in DECCs own letter to local authority leaders in England [71] when they state:

> *"Local government is uniquely well-placed to support, partner and invest, and to provide a positive planning and policy environment to help drive a community energy revolution."*

However, this more "hands off" approach has not always been the case in the UK. Before 1914 many local authorities had their own energy companies and some like Chester even had their own power station [72]. This more proactive role is well shown currently by the support for the Low Carbon Hub given jointly by Oxford City and Oxfordshire County Councils.

The concept of the collaborative approach by local authorities in retail domestic energy was initiated as a response to the funding crisis in local government following the 2008 recession. A number of local authorities in the UK have started to reconsider municipal energy services, both as a way of helping locally combat fuel poverty and climate change, as generating a new source of revenue to replace some of that which has been lost due to public funding cuts. The work of the "Balliol Group" [73] of local authorities initiated this activity of the "re-municipalisation" of energy in 2011. This concept, now formed as APSE Energy, has gained further momentum recently with some local authorities now launching their own retail energy functions, including Bristol [74] and Nottingham [75].

Whilst such local municipal energy companies are more commonplace in continental Europe [76] the approaches of local authorities such as Bristol and Nottingham is still seen as revolutionary in the UK. What such entities will do is provide much needed new competition in the UK domestic retail energy market, mirroring the requirement for more local "challenger banks" [77] in the UK banking industry to add further competition to the market there.

5.5 Towards 2020 – devolving more power to deliver more power

In the very heated political debate on energy prices at Prime Ministers Question Time on October 30th 2013 David Cameron, the Prime Minister said;

> *"What we need in the energy market is more competition"*

The challenge facing policy makers appears to be what sort of competition and how to deliver it? Whilst the impact of the Miliband speech can still be seen if you are a Centrica share holder, for those holding SSE shares the issue seems to have been more of a bump in the road than a long term issue.

If the assessment above is correct, then the markets have already discounted both the Miliband proposal and helped fund shortfalls in price rise income by holding back some of the £50 government rebate response to it. Consequently it could be postulated they have, effectively "won" the retail energy policy

debate, at least until the CMA report is published sometime well after the General Election.

The markets will continue to move and react to events and policies but it can be suggested that the Miliband proposal has already had its most significant impact on government policy and the energy market. Indeed, as a result of his intervention, energy policy in the UK now looks very different to the situation the likes of Centrica and SSE were experiencing before September 2013.

What is required now is a set of clear policy proposals to deliver the Prime Minister's statement. Policies to further enable organisations like local authorities to play a more direct role in local community energy markets than appear to be currently the case in the Community Energy Strategy.

The big issue will always be financial resource, and if local authorities are to be able to play a bigger role in local retail energy then access to finance will be required in the austere times in which it finds itself. Proposals for local government funding have already been floated in terms of municipal bonds [78] for energy investment. Furthermore, the 2014 Green Investment Bank announcement of £200,000,000 of funding [79] demonstrates the markets appetite for such investment is still strong. However, the financial restrictions placed on local government because of central government borrowing guidance due to the way the Public Sector Net Borrowing Requirement (PSNB) [80] is calculated stymies many such opportunities. The argument to move to the continental European approach of General Government Financial Deficit (GGFD) calculation of public debt has long been put forward [81]. Its adoption would allow more local authority investment opportunities to improve communities and their infrastructure, as is required in the retail domestic energy sector at the moment. Such a change would be radical, but in the post 2014 Scottish Referendum environment of England, where the call for more locally devolved control over communities is commonplace the response by politicians of different parties [82], [83] could open up such an opportunity.

The case for further devolution of powers in the specific area of domestic energy policy to local authorities across the UK can clearly be seen in reference to the success of the Community Energy Scotland. In five years it has released over £15,000,000 of funds to renewable schemes. This success then begs the question how long will it take for the joint £25,000,000 of the RCEF and UCF to be allocated? CO_2 emission reduction target dates are looming and it is postulated that by devolving allocation to local bodies would have a greater chance of speeding up delivery and therefore assist in hitting them.

The challenge now is for strong political leadership (both nationally and locally) in the area of delivering the step change required in local retail domestic energy policy. National politicians must take the risk to devolve more financial power to local government, especially in England following the Scottish Referendum. This must go hand in hand with more local leaders actively engaging with issues like fuel poverty and CO_2 emission reduction in their communities. If they do this they will also develop a new source of revenue to help bridge the gap of recent central government cuts in funding. Being more municipal must go hand in hand with being more entrepreneurial as well as doing more locally whilst still thinking globally.

By the sheer scale of potential influence in their local communities and with their place shaping responsibilities local government could significantly help open up the domestic UK energy market. The opportunity appears to be a strong candidate for new national energy policy support in the delivery of this need.

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