MAYOR OF LONDON

1. Introduction

The Mayor of London's response to the Department of Energy and Climate Change's *Consultation on a review of the Feed-in Tariffs scheme*, published on 27 August 2015, focuses on the impacts the proposed changes will have on the solar industry and jobs, investor confidence and deployment rates in London. It has taken into consideration the views of solar businesses in London, who are likely to be detrimentally affected by the proposed changes, as well as intelligence from the Mayor's two energy efficiency programmes – RE:NEW and RE:FIT – and independent modelling of the potential impact on solar deployment in London.

The Mayor understands the spending constraints the Government faces, and supports action to phase out subsidy for solar deployment as fast as is reasonable, but also notes the huge levels of public support for solar energy[1].

The Mayor is concerned that the approach proposed by the consultation is affecting project pipelines and business cases, which is making it very difficult for the solar industry and its customers to plan deployment. The Mayor strongly believes that Government should be avoiding the sharp cliff-edges the consultation is proposing, and providing certainty through planned FIT reductions to ensure long-term sustainability of the solar industry as it transitions to zero subsidy. The solar PV industry is on the cusp of being able to function subsidy-free, and withdrawing or reducing support to the extent proposed at this crucial time could prove damaging to businesses, jobs and deployment.

Key points of the Mayor's consultation response include the following:

- sharp cliff edges like this, with very little warning, could be damaging to the industry and investor confidence
- uncertainty created by the proposed changes is negatively affecting project pipelines and business plans
- need to make the transition to subsidy-free solar as soon as possible, and the Mayor supports a planned transition over a period of two to three years, which provides certainty and stability for the solar industry as it becomes self-sustaining
- the proposed cuts to the FIT tariff for solar PV could damage the solar industry in London and result in significant job losses
- investor confidence has been undermined by the consultation, which will only be made worse by either the cessation of the scheme in January 2016 or the c.87 percent cut to the generation tariff
- the proposed cuts to the FIT could significantly hamper solar PV deployment rates in London, which already face major rollout challenges , including negatively impacting upon the delivery of Mayor's retrofit programmes, RE:NEW and RE:FIT
- the proposed tightening of the energy efficiency criteria would prevent a large number of properties in London from installing solar PV without significant investment in energy efficiency improvements, for which there is no longer support available following the termination of the Green Deal

[1] DECC's public attitude tracker; https://www.citizensadvice.org.uk/Global/CitizensAdvice/essential%20services%20publications/Solar%20PV%20Report%20220615.pdf ; Which? Magazine, October 2015.

- whilst a move towards smart metering with net metering functionality is welcome, making it a requirement for receipt of the export tariff would require a commitment or obligation on the energy suppliers to install a smart meter in a timely manner, as well as ensuring that the property was currently suitable for installation of a smart meter – an issue which arises frequently in London.

2. Impact on London's solar industry

The Mayor is concerned about the impact the proposed cuts could have on the solar industry in London. To date, three solar firms with offices in London have gone into administration, resulting in significant job losses. Mark Group, Climate Energy, and Southern Solar have all cited the proposed cuts to the FIT as the reason for entering administration.[2] Another, the global solar company, SunEdison, has announced that it is leaving the UK market, also citing the proposed FIT changes as reason for the move.[3] The Mayor is not certain there is a direct causal link between the FIT proposals and these failures but he feels that the current uncertainty cannot have helped already distressed businesses.

This section of the Mayor's consultation response is informed following engagement with solar businesses in London, who attended a roundtable in early October 2015 to discuss potential impacts of the proposed FIT changes for PV.

2.1 Businesses and jobs

The Mayor is concerned about the potential for loss of jobs and businesses in London's solar industry. The businesses which are completely exposed to the British solar market could be at risk of not surviving the proposed FIT changes. Some businesses reported that they would refocus their businesses abroad, in countries like India where British solar expertise is valued and the Government has ambitious deployment targets. However, those businesses may not be able to justify London headquarters and/or operations without a sustainable British solar market.

The accompanying Impact Analysis for the proposed FIT changes does not quantify job losses, although it does acknowledge that they are likely to result. The Department of Business, Innovation and Skills reported that the London solar industry employs c. 3,100 people across the supply chain, or 11 per cent of England's solar jobs.[4] Many of these jobs are in small organisations, which may be affected by the proposed changes. Based on the impact the proposed FIT changes have already had on the Mayor's RE:NEW programme, it is estimated that 33 jobs fewer jobs be created or sustained and a further 106 are at risk if pipeline projects are cancelled (see below for further detail of the impact on the Mayor's programmes).[5]

The loss of jobs and skills from the supply chain also makes rebuilding the industry slower than it would normally take, as people move on to other industries and do not maintain their solar development and installation skills.

2.2 Pipeline projects

[2] http://www.businessgreen.com/bg/news/2429541/mark-group-enters-administration-as-government-is-blamed-for-latest-green-job-losses and http://www.businessgreen.com/bg/news/2430606/southern-solar-becomes-latest-casualty-of-feed-in-tariff-crisis

[3] http://www.solarpowerportal.co.uk/news/breaking_sunedison_to_exit_uneconomic_uk_market?ljkjlk

[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416240/bis-15-206-size-and-performance-of-uk-low-carbon-economy.pdf p71

[5] Estimates based on GLA analysis which shows 20.75 jobs per £1 million of capital investment in RE:NEW

One of the major impacts London's solar businesses are currently experiencing is the loss of pipeline projects. One solar SME reported that they had already lost £2.5 million in projects as a result of the consultation. The Mayor's own RE:NEW programme is also experiencing similar issues (see below) with planned projects no longer going ahead. Other businesses also reported similar experiences, with the uncertainty created by the proposed changes, adding a higher risk to planned investments and business plans. These projects often take considerable time in development before reaching the end of the pipeline, and once lost may not be re-stated.

2.3 Investment uncertainty

A pervasive impact of the proposed FIT changes is the climate of uncertainty they create for current and potential investors, not just for PV but across renewable energy more generally. Ernst and Young's September 2015 *Renewable energy country attractiveness index* states that "a wave of policies reducing or removing various forms of support for renewable energy projects has confused investors and consumers".[6] It also suggests that this is likely to have a knock-on effect on other areas of investment such as CCS and shale gas extraction.[7]

Solar businesses also noted that it was impossible to plan for their businesses at present, and they will not be able to do so until an announcement on the results of the consultation is made, most likely not until December. They expect a rush on projects which are well advanced in the pipeline so that they can to take advantage of the current FIT rate. This could trigger the proposed spending cap and result in cessation of the scheme in January 2016. However, they do not currently know the extent of fast-tracking, and therefore are unable to make plans for future investment decisions.

3. Impact on London's solar deployment

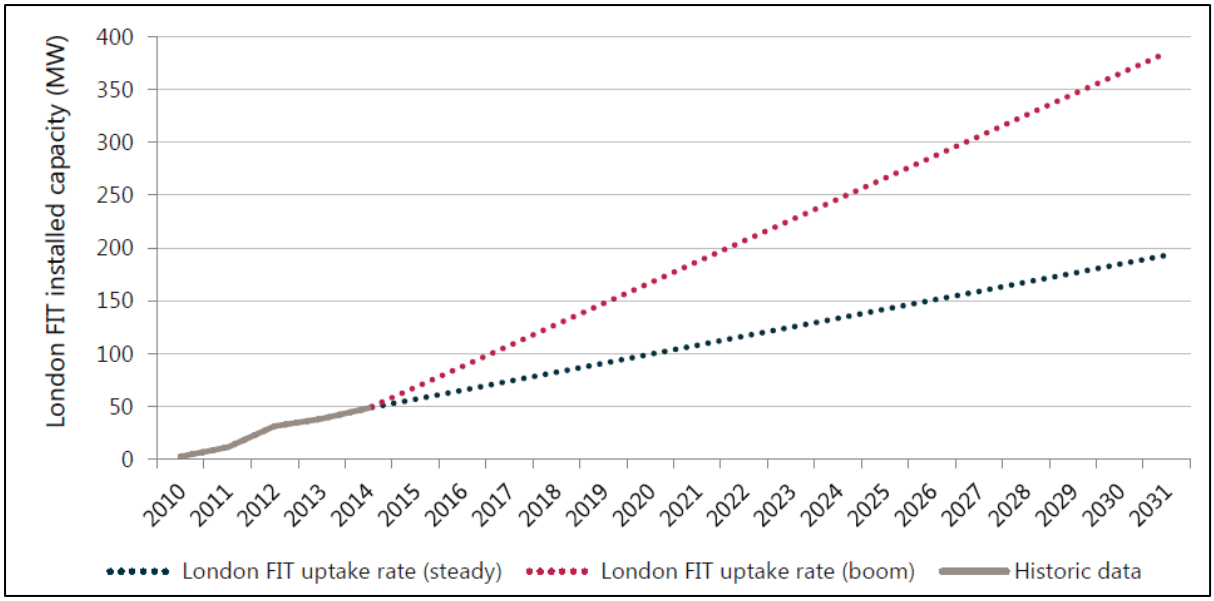
3.1 Deployment projections

The Mayor has ambitious targets for both carbon dioxide emissions reduction and decentralised energy, of which solar electricity is a component:

- 60 per cent reduction in CO_2 emissions by 2025, on 1990 baselines
- 25 per cent of London's buildings' energy demand to be met from local sources by 2025.

The London Energy Plan, which is currently being developed, is a data-driven, spatial mapping of London's energy demand and supply. It is believed to be the first city-wide spatial energy plan of its kind. As part of the Plan's development, BuroHappold was engaged to produce updated modelling of solar PV deployment in London, following on from work they undertook in 2011 for the Decentralised Energy Capacity Study.[8] The figure below shows the projected impacts of the FIT changes in 2012, where 'FIT uptake rate (boom)' is based on actual installation rates in London at the higher 2011 tariff, and 'FIT uptake rate (steady)' is actual installation at the reduced 2012 tariff through to late 2014.

[6] http://www.ey.com/GL/en/Industries/Power---Utilities/EY-renewable-energy-country-attractiveness-index-issue-45-country-focus-uk p35
[7] http://www.ey.com/GL/en/Industries/Power---Utilities/EY-renewable-energy-country-attractiveness-index-issue-45-country-focus-uk p35
[8] http://data.london.gov.uk/dataset/decentralised-energy-capacity-study



Actual and projected installed PV capacity in London – higher rate FIT (2011) v reduced rate FIT (2012).[9]

BuroHappold is currently updating their projections in light of the proposed FIT changes and the results will be sent to the DECC consultation team as soon as they are available. However, given London's historically low domestic solar installation rate as a result of a number of building, tenure and logistical challenges, it would be expected that the growth of installed capacity would continue to be low.

3.2 Mayor's Programmes

The Mayor has two energy retrofit programmes, RE:NEW which deals with home retrofit and RE:FIT which focuses on public buildings, including schools.

At the time of the FIT consultation being published, the RE:NEW solar PV pipeline contained £7.3 million of projects. Since then, £1.6 million worth of projects have been cancelled, £5.1 million remain in the pipeline but are at a high risk of either reduction or cancellation, and £600,000 are either already in contract or in procurement.

RE:NEW PV Procurement Analysis

The RE:NEW support team have used the Parsons Brinckerhoff analysis, undertaken for DECC to inform the development of the consultation proposals, and data gathered through the recent Framework tender process, to determine the impacts, rates of return and important variables for indicative PV investment decisions made through the RE:NEW programme. The results are below show the potential impacts on deployment through the programme.

In the spring of 2015 the Greater London Authority completed an OJEU compliant tender process to establish the RE:NEW Framework. One of the measured covered is solar PV. Costs were obtained from eleven contractors for two scenarios:

a) 250 x 2kWp systems – average price £2,923
b) 250 x 4kWp systems – average price £4,707

[9] BuroHappold (2015) Input data for the London Energy Plan - Updated Solar PV installation projections. Unpublished.

These data give cost rates of £1,461/kWp and £1,177 respectively, with mean value £1,319. It is accepted that these costs were for a managed scheme with overhead and profit but offsetting this is the fact that significant economies of scale can be applied to a scheme of 250 properties.

Assuming that these opposing factors approximately balance each other out, we have then used the mean figure of £1,319/kWp in a cashflow model where Parsons Brinckerhoff's Opex assumptions were incorporated. For a 3.5kWp system the IRR was found to be 3.1% with 50% onsite power consumption. This dropped to 1.1% with 40% onsite power consumption and rose to 4.9% with 60% onsite consumption. The level of onsite consumption was the most sensitive variable.

All three income streams (generation tariff, export tariff and bill saving) were included. Bill savings represent 63% of the income streams in year one and where bill savings cannot be accrued by the investor (e.g. in private and social landlords) the business case falls apart entirely. It is therefore expected that should the DECC proceed with the proposed cuts to the domestic generation tariff, that little or no PV will be installed in the rented sector. The application of PPAs in the domestic rental sector is considered too problematic and cases of this being implemented are not known.

Where a lower installation price is achieved (e.g. £1,177/kWp) the returns are obviously slightly better (2.2% IRR at 40% onsite use, 4.3% IRR at 50% and 6.1% at 60%) but even at these rates, the investment is not highly attractive with the discounted cashflow turning positive only in year 15 in this final case where the IRR was 6.1% (when using a discount rate of 3%). Therefore very few or no rental sector systems will be installed due to no financial return, and relatively few owner occupier sector systems will be installed as a result of the long real-life payback on Capex invested.

At the time the consultation was published, RE:FIT has one solar project well advanced and a £2 million PV project in the pipeline. As a result of the proposed FIT changes, the project is now being reconsidered and depending upon payback period, may not include solar PV.

3.3 Community energy

Community solar in London has been a thriving area, with more than 3,000KW installed, ranking it third amongst the regions of England[10]. The Government has also been supportive of community energy and established a small grants programmes to enhance the capacity of community organisations to install renewable energy, including solar. A recent survey, undertaken by Quantum for Community Energy England, which represents community energy groups across England, found that of the 80 community groups with whom they spoke, 90 per cent said their developing project are completely (67 per cent) or partially (23 per cent) at risk due to the review of FITs, which represents capital investment of £127 million. Ninety-one percent that their future ambitions are at risk, representing £242 million of capital investment, and 98 per cent thought their community activities would be wholly (80 per cent) or partially (18 per cent) at risk.[11]

[10] Feed-in Tariff Installation Report 31 March 2015 (Ofgem)

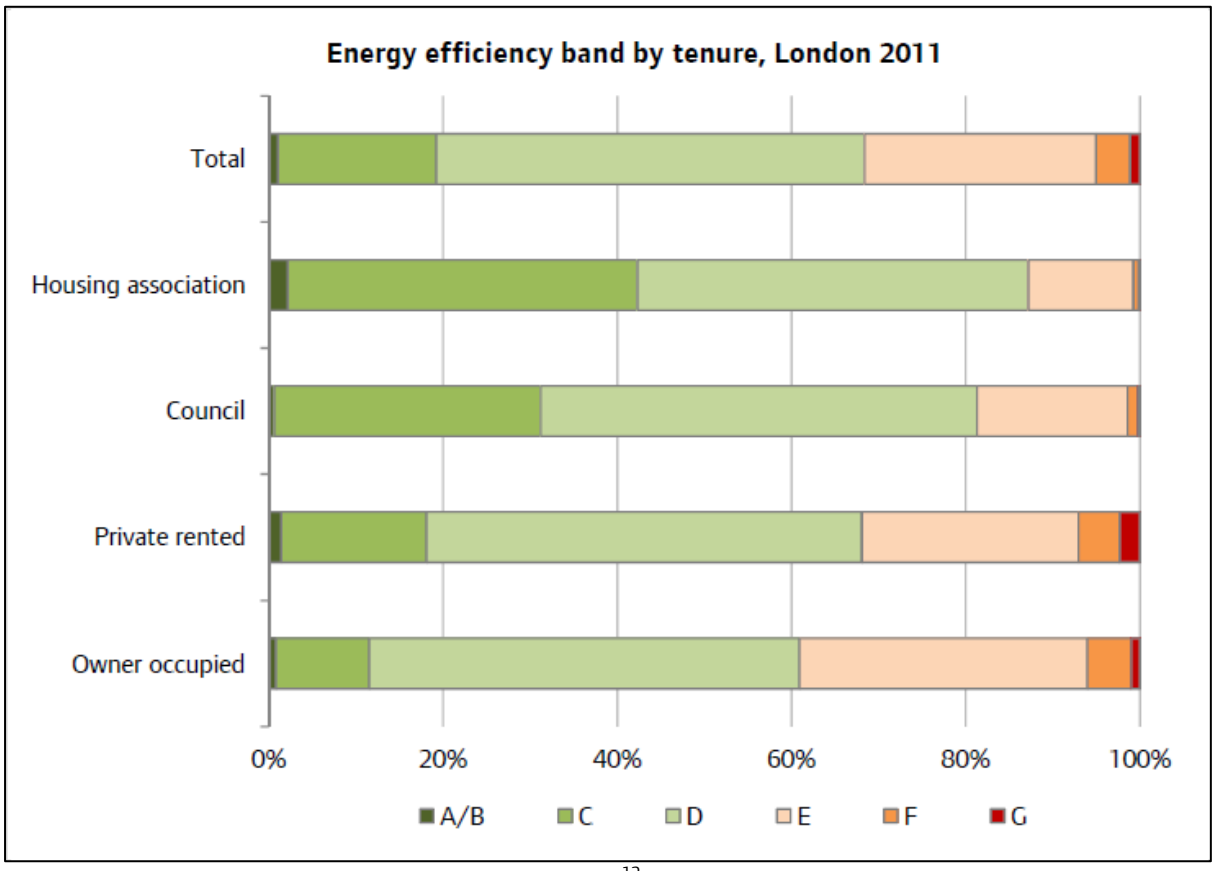
[11] http://communityenergyengland.org/wp-content/uploads/2015/10/CEE-Survey-2015.pdf p5

4. Energy efficiency criteria

The Mayor is very supportive of improving the energy efficiency of homes. However, the proposed tightening of the energy efficiency criteria for FIT to an EPC band C, when there is little or no support available for larger, more expensive measures would act as a disincentive for the installation of household solar PV.

The Energy Company Obligation has very limited funding available for more expensive measures, for example, solid wall insulation, and other support such as the Green Deal Home Improvement Fund and Green Deal Finance are no longer available to households.

An EPC Band of C would also preclude most homes in London from accessing FIT for solar PV, when London already has a historically low domestic PV installation rate. The figure below shows that approximately 90 per cent of owner occupier homes and 82 per cent of privately rented homes would be ineligible, many of whom would have to invest substantially to meet the criteria.



Home Energy efficiency banding by tenure in London[12]

5. Net metering

The Mayor supports smart metering, with net metering functionality, and believes that net metering might incentivise more efficient onsite use of electricity, and therefore, greater export to the grid. However, any requirement for net metering should include a commitment or obligation on energy suppliers to install the meter in a timely manner, and an exemption should

[12] http://www.london.gov.uk/sites/default/files/Housing%20in%20London%202015%20v2.pdf p114

be available for those properties which are not currently suitable for smart meters. This exemption should be reviewed as rollout and technology improve.

6. Alternative approaches

The Mayor strongly supports reducing the FIT as the costs of installed solar PV come down. Solar PV is very close to being competitive with conventional grid electricity, without subsidy. The purpose of introducing the FIT was to incentivise uptake of PV and to develop the market for PV through economies of scale. The Mayor is concerned that this growing industry could be adversely affected by the proposed changes, and will not be able to take advantage of the investment made since 2010 to bring costs down and operate without subsidy.

The Mayor supports the need to move the solar industry to a situation where it operates without subsidy; however he questions the speed at which the Government is proposing to do this in the consultation. The Mayor supports a gradual tapering of the FIT over a period of two to three years, in order to sustainably transition the industry to become subsidy-free. This would provide a clear pathway, avoiding sharp cliff-edges and providing certainty for the industry, investors and consumers. It would also reduce the impact of businesses and job losses, and create a sustainable, subsidy-free solar industry. Although this approach may result in the loss of some jobs, it would likely avoid a wide-scale collapse in the solar supply chain whilst also reducing pressure on the Levy Control Framework and household energy bills. It would also enable all sectors to benefit from solar power, rather than restricting deployment to certain groups or house characteristics.

The Mayor also believes that the Government could provide a supportive policy framework to underpin the transition to subsidy-free solar, which could include:

- greater certainty around building standards
- alignment of commercial sector energy regulations to incentivise renewable energy investment as part of HM Treasury's *Reforming the business energy efficiency tax landscape*, in particular, re-instating the exemption for renewable energy in the Climate Change Levy (or its successor)
- support for developing battery storage technology to rapidly bring down costs for households and businesses, helping solar energy become more flexible to users' needs.