Green Growth: No Turning Back

TUC energy and climate change policy, November 2013

This paper sets out the key principles which underpin the TUC's approach to energy policy, and highlights key TUC policies across this complex and wide ranging area. Taking into account the UN's latest scientific evidence on *climate change*, the debate on *energy security* and the operation of the UK energy market, and on the *affordability* of UK energy bills, the TUC has taken the opportunity to draw together and refresh its policy on energy and climate change.

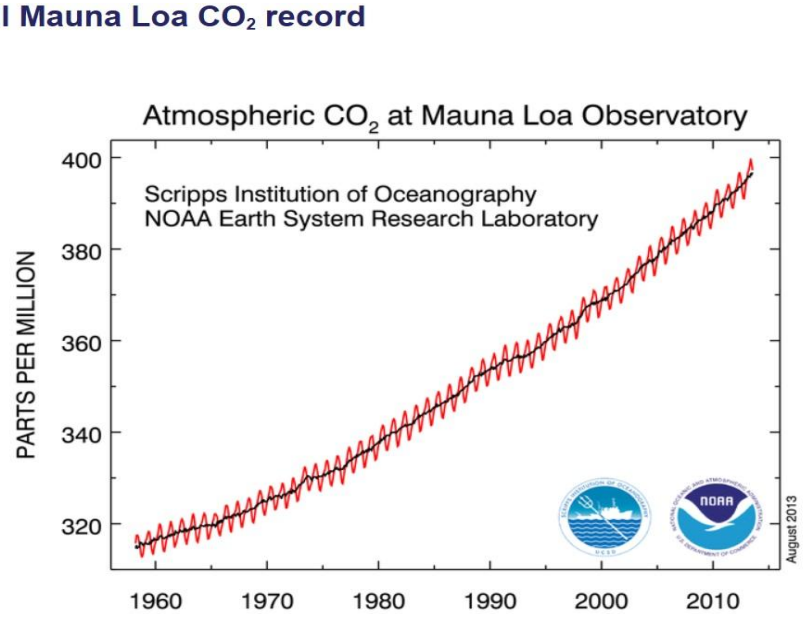
1. Why it's essential to cut carbon emissions

Global carbon emissions

Carbon dioxide (CO2) pumped into the atmosphere by burning fossil fuels (oil, coal and gas) and other human activities, is the most significant heat-trapping greenhouse gas (GHG) contributing to global warming. Despite increased awareness of the dangers and environmental risks climate change brings, carbon emissions levels continue to rise.

Global carbon dioxide concentrations in the atmosphere are higher than any time in at least the last 400,000 years. In May 2013, the daily mean concentration of CO2 in the atmosphere of the oldest continuous carbon measurement station in the world (and the global benchmark site) surpassed 400 parts per million (ppm) for the first time since measurements began in 1958.

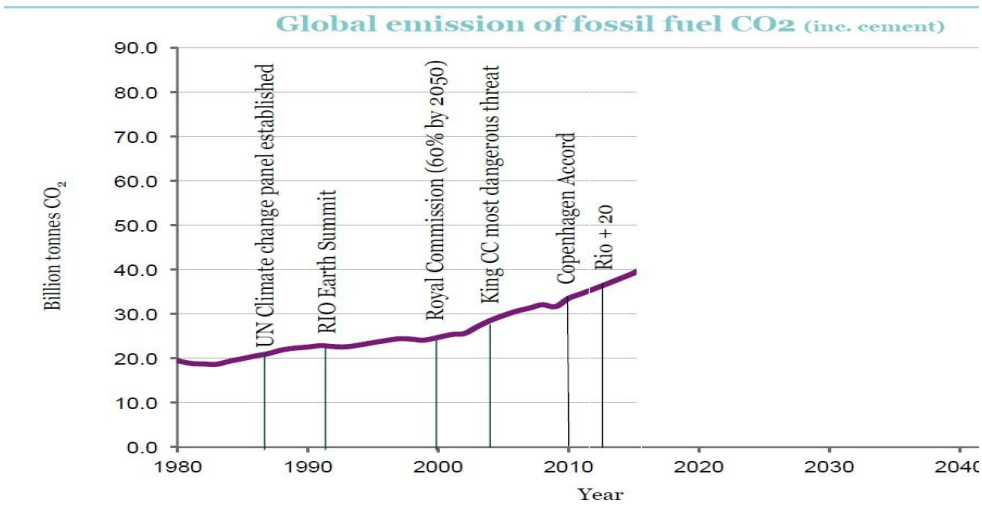
Graph 1: CO2 emissions at global benchmark measurement site, May 2013



The Intergovernmental Panel on Climate Change (IPCC) [i] reported in September 2013 that: "Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, the sea level has risen, and the concentrations of greenhouse gases have increased. Each of the last three decades has been successively warmer at the Earth's surface than any preceding decade since 1850."

For the first time, the IPCC has set a global carbon emissions budget for preventing "dangerous climate change." This budget – one trillion tonnes of carbon dioxide emissions - is aimed at preventing global average mean temperatures increasing by more than two degrees above pre-industrial levels. The benchmark year is 1850, and we have since burned through 545 gigatonnes, more than half the budget. What's more, we are currently emitting 50 billion tonnes of greenhouse gases into the atmosphere and the rate at which we are consuming fossil fuels is accelerating. This is shown in Graph 2 below.

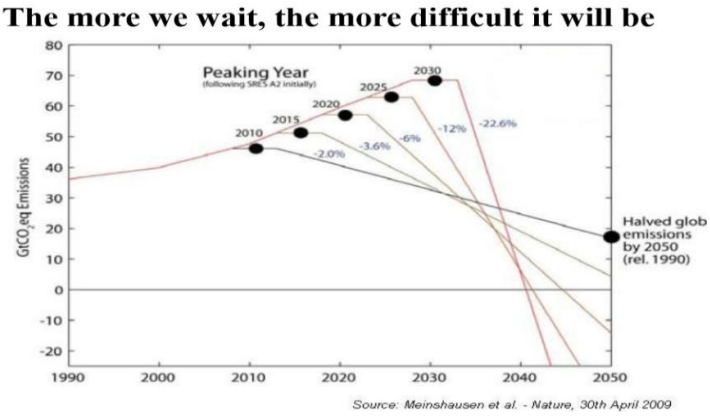
Graph 2: Rate of fossil fuel consumption at each annual UN climate change convention



Analysis shows that up to 555 more gigatonnes of carbon dioxide from oil, coal and gas consumption, including shale gas, can be emitted globally if temperatures are to stay below 2°C of warming — anything more risks environmental catastrophe for life on earth.

The challenge is significant. Even if we were to stay at current emissions levels (rather than seeing any further acceleration) our global emissions budget would be exhausted within 15 to 25 years. And as Graph 3 shows, the longer we wait the harder it will be to reverse current trends and to achieve the global emissions reductions necessary to avoid climate change.

Graph 3: Rates of CO2 emissions reductions needed not to cross 2 degrees threshold



As each UN Earth Summit or annual UN climate change convention passes, carbon emissions continue to increase.

Across the world governments and energy companies now have 2,795 gigatonnes of carbon in their accessible reserves, more than five times the amount that can be safely emitted. If these emissions are to be avoided transformative global changes are needed in the energy sources we use, the operation of our industries and in our rates of domestic and business energy consumption.

The problem is now so significant that it requires a comprehensive and ambitious response; evolutionary reductions in carbon emissions, through incremental increases in investment in energy efficiency and low carbon technologies (such as renewables, carbon capture and new nuclear) will no longer be sufficient to avoid dangerous climate change.

The European Commission is currently deliberating on a 2030 Framework for Energy and Climate policies. The EU plays a significant leadership role in the UN climate change convention, due to reassemble in Warsaw in November 2013. Ahead of this meeting, a new UN study[ii] shows that chances of keeping the global temperature increase below 2C will "swiftly diminish" unless the world takes immediate action to escalate cuts in carbon emissions.

The TUC agrees that further cross-European action is needed, and has called on the EU to adopt a new 2030 target to cut CO2 emissions by at least 40%, and for a higher level of ambition to be required if the UN agrees to a new global deal on climate change in 2015.

UK carbon emissions

The UK has a key role to play in securing progress towards global emissions reductions. The UK currently emits 575 million tonnes of carbon dioxide a year, a quarter of it from the power sector. The Climate Change Act 2008 committed us to a legally binding 34% cut in these emissions by 2020 (relative to 1990 levels) rising to cuts of 60% by 2030 and 80% by 2050.

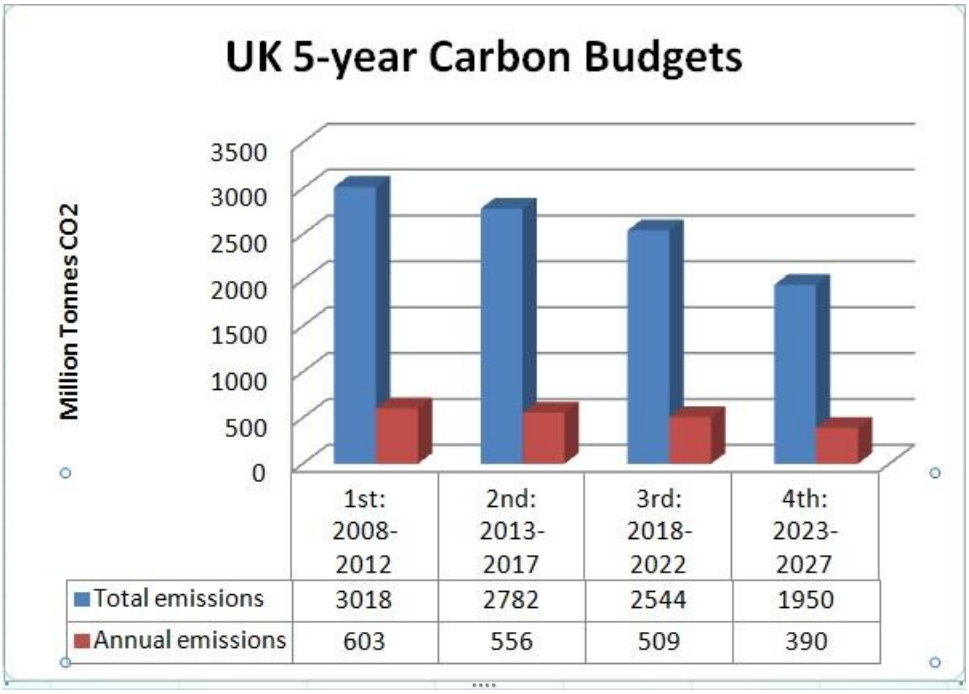
The TUC supports these targets, but also recognises that significant new investment in national energy and industrial infrastructure, jobs and skills is essential if they are to be met.

To support the Government with the policy framework necessary to meet these targets, the independent Committee on Climate Change[iii] was established. The Committee has devised a series

of five-year rolling 'carbon budgets' that define the maximum level of greenhouse gases the UK can emit over each period while meeting its legal obligations to secure emissions reductions. Parliament adopted the first three of the five-year rolling budgets in 2009.

The Committee on Climate Change has also identified where the greatest effort is needed if the emissions reductions their budgets set out are to be achieved. These are:

- Reducing power sector emissions, through investment in renewables, new nuclear and coal and gas power with carbon capture & storage (CCS) technology.
- Reducing emissions at home and in industry, through home insulation and investment in low carbon technologies in industry, notably in our energy intensive industries.
  Cutting transport emissions through increasing prevalence of low carbon vehicles and introduction of wider measures to change consumer behaviour.



	1st: 2008-2012	2nd: 2013-2017	3rd: 2018-2022	4th: 2023-2027
Total emissions	3018	2782	2544	1950
Annual emissions	603	556	509	390

But the UK's policy commitment has recently begun to stall. In December 2012 the Chancellor called for a review of the UK's carbon reduction commitments,[iv] in a challenge to the UK's fourth carbon budget (for the period 2023-27: see chart above). In Budget 2013 he also introduced a new subsidy regime for shale gas exploitation. He also continues to oppose the introduction of legally-binding low carbon energy targets in the government's Energy Bill and in October 2013 the government added a review of the UK's so-called "green taxes" to its list, with a commitment to "roll back some of the green regulations and charges."

The TUC is concerned by the Government's recent ambivalence towards reducing carbon emissions, and disagrees with the Chancellor's assessment that we can treat the challenge of climate change lightly. We recommend that parliament adopts the Fourth Carbon Budget to help secure the UK's contribution to global emissions reductions.

2. UK energy policy

The energy market is vital to the government's attempts to provide secure, affordable and low carbon energy. The TUC is however concerned that in recent months little progress has been achieved against any of these objectives.

A: Affordable energy

The case for market reform

Above-inflation increases in energy bills are exacerbating the squeeze on household incomes. Energy prices have risen by four times the rate of inflation over the past 10 years. Energy costs rose by 152% from September 2003 to September 2013, the RPI by 38%.

Domestic and industrial consumers face escalating bills, and action is needed to ensure that energy prices are both fair and affordable. But cheaper energy is not incompatible with addressing climate change, and there is far more that could be done to improve the operation of the UK's energy market while ensuring that green investment is protected.

In response to recent energy bill increases the Energy Secretary has recently announced[v] new measures to help customers switch suppliers, and that Ofgem will carry out a "market assessment every year, working with the Office of Fair Trading and the new Competition and Market Authority when established, to monitor the behaviour of market participants and ensure the market is working fairly." Ofgem will also assess energy suppliers' financial reporting practices.

The Prime Minister also announced a review of "green energy taxes" which he believes have helped push up household bills to "unacceptable" levels.

The TUC disagrees that these responses are either adequate or appropriate. In our view the there is a need for far more transparency around the operating practices of the largest energy companies. Ongoing gaps between wholesale and retail prices remain unexplained, prices among different companies appear to increase simultaneously and profit margins surpass those of many other large businesses.

Reform needs to go significantly beyond the Energy Secretary's proposals if these challenges are to be addressed and a deep audit of UK energy policy, its subsidies and market operation, is clearly long overdue. At a minimum, a Competition Commission inquiry would provide the basis for an impartial analysis of these various claims.

The case for reformed green taxation

While the case for market reform is compelling, the Prime Minister's 'green tax' review is not.

The average household dual fuel bill is £1,267 (£691 for gas and £576 for electricity). Pensioner households entitled to the £135 Warm Home Discount have lower costs, as do households who are entitled to Cold Weather Payments and/or Winter Fuel Payments. The main contribution to the consumer energy costs is not environmental charges, which only comprise around 9% of the average household duel fuel energy bill.

Table 1: Household energy bill breakdown, 2012

Bill item	Gas bill	Electricity bill	Dual fuel energy bill
Wholesale energy costs	£383 (55%)	£215 (37%)	£597 (47%)
Network costs	£124	£133	£257 (20%)
Other suppliers costs and margin	£119	£121	£240 (19%)
Energy & climate change policies	£33 (5%)	£80 (14%)	£112 (9%)
1. Energy Company Obligation (ECO)	*£25*	*£22*	*£47 (4%)*
2.Renewable Obligation (RO)	-	*£30 (5%)*	*£30 (5%*
3.Feed in Tariffs (FiTS)	-	*£7 (1%)*	*£7 (1%)*
4.Warm Home Discount	*£6 (1%)*	*£6 (1%)*	*£11 (1%)*
5.EU Emissions Trading Scheme (ETS) tax	-	*£8 (1%)*	*£8 (1%)*
6.Carbon Price Floor tax	-	*£8 (1%)*	*£8 (1%)*
7.Smart meters	*£2*	*£1*	*£3*
VAT @5%	£33	£27	£60
Total (excluding Warm Home Discount and other benefits)	**£691**	**£576**	**£1,267**

Source: DECC *Annual energy statement*,2012

The functions of these different programmes are set out below (Table 2). While the TUC supports policy change around the operation of the UK's Carbon Price Floor (discussed in further detail in following sections) we broadly support the aims of each of the other environmental programmes set out below, which make an important contribution to the UK's carbon reduction efforts. In particular, we support measures which assist fuel poor households to improve energy efficiency.

Fuel poor households live in some of the UK's least energy efficient properties, so these programmes provide an important way both to bring down their costs and to reduce carbon emissions, as well as creating skilled employment.

Table 2: Overview of environmental schemes and impact on household and business energy bills

Environmental scheme	Aims	Who pays? (household or business)
Energy Company Obligation (ECO)	Legal obligations on the larger energy suppliers to deliver energy efficiency measures to domestic energy users.	Household
Renewables Obligation (RO)	Government support for promoting large scale renewable electricity.	Household and business
Feed in Tariffs(FiTS)	Tariffs supporting switch from oil and gas fired heating systems to smaller scale sustainable sources such as bio fuels, solar panels, heat pumps and renewable combined heat and power.	Household and business
Warm Home Discount	Scheme which requires domestic energy suppliers to provide around £1.13 billion of direct and indirect support to fuel poor customers over four years, notably to households of less well off pensioners.	Household
EU Emissions Trading Scheme (EU ETS)	A mandatory cap-and-trade scheme central to the EU's climate change target to cut EU carbon emissions by 20% by 2020. It sets a cap for emissions for power sector and energy intensive industries and gives these companies allowances which can be traded on the open market.	Household and business
Carbon Price Floor (CFP)	A tax on fossil fuels used to generate electricity. It sets a minimum price for carbon to supplement the European Union Emissions Trading Scheme (discussed above) which requires industry to trade its carbon emissions.	Household and business
Smart meters	Improved energy meters designed to end estimated billing.	Household
Climate Change Levy	A tax on energy delivered to non-domestic users. Aim is to provide an incentive to increase energy efficiency and cut carbon emissions. Energy intensive businesses can qualify for a rebate of up to 90% if they enter into a climate change agreement (CCA) with the Environment Agency.	Business
Carbon Reduction Commitment Energy Efficiency Scheme	Price on carbon consumption for large service sector organisations not covered by CCAs.	Business

These various green measures are having a real impact on household and business energy bills, but the most significant contribution to rising costs is wider market dysfunctionality (which, as we have seen above, the Government is reticent about addressing). In addition, green levies all have important roles to play in supporting the UK's transition to a lower carbon energy market, and in some cases also aim to offer specific support to less well off consumers.

The TUC therefore believes that plans to remove or reduce environmental taxes should be opposed. Cutting green policies will hit investment in green jobs and skills in key sectors such as home

insulation and the nascent wind industry, as well as compromising the UK's climate change objectives. But we also recognise that applying these charges via fuel bills is regressive – consumers pay according to their energy use rather than their income. We therefore believe that funding these measures through general taxation would be a more progressive and equitable approach.

The TUC and affiliates have also joined the alliance of organisations behind the Energy Bill Revolution campaign, calling for a huge expansion of UK home energy efficiency improvements. Should green levies remain funded via consumer bills this expansion could paid for by recycling carbon revenues from the Carbon Support Price and European Emissions Trading Scheme back into a home energy efficiency scheme, which would reduce the cost energy consumers pay towards ECO and fund a programme that is five times bigger, making half a million homes 'super energy efficient' every year.

Reforming the Carbon Price Floor

The key area of green taxation where the TUC believes that there *is* need for change in policy design is the Carbon Price Floor (CPF), which is having a disproportionate impact on the energy bills of core UK manufacturers.

Congress 2010 supported reforms to establish an effective floor price for carbon emissions to stimulate investments in alternative to fossil fuels, but at this point the TUC had not envisaged a UK stand alone carbon price that was far out of line with the EU carbon price. This scale of the current differential risks driving jobs and investment among heavy energy users out of the UK, with DECC estimating that energy intensive businesses are set to face costs of £130,000 as a result of the carbon price floor in 2013, rising to £1.1 million by 2020. Meanwhile, Budget 2011 took the decision that the £1bn of annual revenues from the Carbon Reduction Commitment would no longer be ringfenced to support investment in energy efficiency improvements for businesses.

The TUC believes that in addition to wider compensation for energy intensive industries (discussed below) there is a strong case for the CPF to be either frozen at current levels, or for the Chancellor to set a much slower rate of increase than is currently planned (with the price currently set to rise to £30 a tonne by as soon as 2020). The CBI[vi] has also urged the government to take further action to protect the competitiveness of UK businesses by alleviating the burden of the Carbon Price Floor on energy intensive industries.

The TUC supports an effective floor price of carbon to encourage investment in alternative sources of energy, but is concerned that the UK's standalone carbon price is far out of line with the EU carbon price. The government should support measures to strengthen the EU carbon price, which provides a level playing field with our EU competitors, and should also review the level and rate of increase of the UK CPF.

Supporting energy intensive industries

Alongside its framework of green taxation, the government also needs a coherent, long-term strategy to support our energy intensive industries. These businesses are faced with both high wholesale energy costs and the cumulative impact of climate change policies. High energy costs lead

to a loss of competitiveness, which in turn leads to factory closures. Across the energy intensive industries there is evidence already of jobs and investment being lost to countries with weaker climate change policies or none at all.

Around 800,000 people work in the UK's energy intensive industries and supply chains, many in union recognised, good paying and skilled employment. These sectors form the backbone of the UK's manufacturing economy, and produce primary inputs for much of what we manufacture and consume in some of the most advanced plants of their kind globally. They also provide essential supply chain products for many low carbon technologies.

By their very nature, these industries use large amounts of energy (electricity and gas) in their manufacturing processes or as raw material. They account for roughly half of UK industrial energy consumption and produce around 10% total greenhouse gas emissions.

In response to our joint representations with industry, the Autumn Statement 2011 announced measures to reduce the impact of environment policies for the most electricity-intensive industries. This included:

- £250 million over the period 2013-2015 to offset the impact of rising electricity prices.
- £100 million to mitigate impacts from the Carbon Price Floor.
- £110 million for indirect impacts of the EU ETS on electricity prices.
- £40 million uplift on relief from the Climate Change Levy (from 65% to 90%) from April 2013.

Budget 2013 extended support by a year (2015-2016) to a total of £400m.

In November 2012, a commitment to provide support to these industries with additional costs arising from the Energy Bill was also given. Although the value of these exemptions has yet to be specified, the Committee on Climate Change estimates them to be worth around £350 million a year in 2020.

Although the TUC has welcomed these compensation packages as a first step, overall they are too narrow, focussing on the electro-intensive sectors to the exclusion of other sectors like ceramics, glass, paper and cement which are also faced with policy impacts. In contrast, the German government provides around £8bn of very long term assistance to its industries and four other EU member states have now introduced support with energy costs for businesses.

The TUC has therefore initiated a further joint study with the Energy Intensives Users Group (EIUG) into the scope and scale of the current industry packages and the timescales over which they will provide support. The key issue is whether the compensation packages are sufficient to support the UK's EIIs during our low carbon transition, and if not what further support is needed. This work forms part of the TUC's broader work programme examining how an active industrial policy for the UK's energy intensive industries could better support them to be low carbon world leaders in the years ahead.

Given industry wide concerns over the cumulative impact of energy costs and carbon pricing, the TUC believes that the government should immediately develop proposals to extend the scale and scope of current support to the UK's energy intensive industries. The UK should aim to have the world's most efficient, low carbon industrial sectors, and develop a strategy to realise this vision.

B: Investing in low carbon energy

Improving the Energy Bill 2013

Through a series of energy market reforms the government's Energy Bill is tasked with delivering the framework for £110bn of secure, low carbon and affordable energy investment by 2020, by which point a fifth of our older power plants will have faced closure and neglected infrastructure will need to have been upgraded. By 2030, more than double that level of investment will be required to secure the UK's energy supply and enable our shift to lower carbon energy production.

Key measures in the Energy Bill include:

- The introduction of Contracts for Difference (CfD), a new system of long-term contracts between government and investors funded by Feed-in Tariffs (FiTs) at rates set for each type of power supply. For example, the draft contract for the new nuclear reactor at Hinckley Point C reportedly includes a 35-year deal with a nuclear power FiT set at about £95 per KwH.

- Capacity Mechanism: to ensure the security of electricity supply, including provisions to allow short-term Electricity Demand Reduction measures.

- The introduction of an Emissions Performance Standard which will limit carbon dioxide emissions from new fossil fuel power stations.

There is now a strong body of opinion that the government should include in its Energy Bill a specific target to largely decarbonise our electricity supply by 2030. Advice from its independent advisors the Committee on Climate Change has consistently recommended inclusion of such a target as part of its statutory duty to identify the lowest cost route towards meeting our carbon reduction targets. *The TUC believes that such a target is urgently needed to provide longer term clarity and attract investment in low carbon technologies.*

The Energy Bill also sets out that low carbon investments in new nuclear, renewables and carbon capture and storage for coal and gas power stations are to be funded by consumers through the Levy Control Framework. The LCF sets a limit on the value of payments that can be made increases to consumer energy bills to pay for low carbon energy sources. The LCF is currently £2.35bn, rising to £3.56bn by 2014/15 and to £7.6bn by 2020. It therefore sets limits on the maximum costs that can be raised to fund the Renewables Obligation, Feed in Tariffs and the Warm Home Discount. When ROCs are phased out in 2017 and replaced with Contract for Difference Feed-In Tariffs, those CfDs will also fall under the control framework. As set out above, the TUC believes that while these policies are important, the proposed funding mechanism is regressive. There may well be a case for funding some or all of the six environmental and social policies via general taxation, rather than household and business bills.

The Energy Bill also needs to give increased support to investment in low carbon technologies, and in particular to Carbon Capture and Storage (CCS) technology, which seeks to remove carbon dioxide emissions from the UK's power and industrial sectors. Furthermore, uncertain political commitments and a series of delays to the government's £1bn CCS commercialisation programme, with final decisions still awaited on the first two demonstration projects (Peterhead in

Aberdeenshire and White Rose in Yorkshire) mean that the UK has reached a defining moment with regards to the future of a national CCS industry. Decisions taken now, and actions taken over the next 7-10 years, will determine our ability to realise the investment, employment and export potential of the sector.

The TUC would like the Energy Bill's Contracts for Difference to set out a clear role for carbon capture & storage (CCS) for coal and gas. The Bill needs to recognise the need for a transitional role for coal up to 2020 until carbon capture for coal is operational at commercial scale. In addition, the government must act decisively to progress the first two CCS demonstration projects.

Wider support for a low carbon industrial strategy

Such significant energy investment holds potential for more than a green transition; if accompanied by an active industrial policy our energy policy could provide key support UK supply chains and local procurement strategies bringing significant benefits to UK manufacturers. The TUC has therefore welcomed the BIS initiative to create three energy sector industrial councils, although far more needs to be done to improve and extent their reach. Improving links between industrial and energy policy remains a key issue for the TUC.

Nearly a million people work in the UK's "green economy" and according to BIS[vii] sales expanded by 4.8% in 2011-2012 to £128.1bn with a healthy trade £5bn trade surplus for the year. Yet in 2012 jobs growth stalled at 939,254 employees after several consecutive years of growth, reflecting the investment falls resulting from the government's wavering commitment to the low carbon transition.

Congress 2013 called on the TUC to progress an active low carbon industrial strategy for the UK, asserting that, "the level and coherence of government support for UK industry still falls far behind competitor countries such as Germany" and that government sector strategies (discussed above) "consistently fail to consider how energy intensive industries or 'enabling sectors', such as steel, chemicals, cement, ceramics, glass and brick, could be supported to develop local supply chains for key sectors."

Wider policy change is therefore needed if the jobs and growth benefits of the low carbon transition are to be realised. This includes:

- Support for ambitious investment for the future through a properly funded Green Investment Bank and the Business Investment Bank.
- Comprehensive programmes of state support for strategically important low-carbon sectors where Britain still has the potential to lead the world, including in renewables, electric vehicles and carbon capture and storage.
- A skills strategy for a low carbon, resource efficient economy.

Funding the low carbon transition

The TUC believes that there should be a stronger link between revenues raised via environmental levies and reinvestment in low carbon initiatives. Current forecasts show that Treasury seeks to gain substantial benefits from these measures over the years ahead, as is set out below.

Carbon taxes currently raise about £3.5bn a year, rising to £6.6bn in 2015-2016. With such substantial revenues being raised from environmental taxes, there is scope for a more explicit strategy of reinvestment of these revenues in the low carbon transition.

Table 3: UK Environmental taxes

Tax	**Revenue Raised 2010/11**	**Revenue Raised 2011/12**	**Revenue Forecast 012/13**	**Revenue Forecast 2013/14**	**Revenue Forecast 2014/15**	**Revenue Forecast 2015/16**
Climate Change Levy	£0.7bn	£0.7bn	£0.7bn	£0.7bn	£0.7bn	£0.8bn
Aggregates Levy	£0.3bn	£0.3bn	£0.3bn	£0.3bn	£0.3bn	£0.3bn
Landfill Tax	£1.1bn	£1.1bn	£1.1bn	£1.2bn	£1.5bn	£1.6bn
EU ETS	£0.4bn	£0.3bn	£0.7bn	£1.5bn	£1.6bn	£1.7bn
Carbon Reduction Commitment	0	£0.7bn	£0.7bn	£0.8bn	£1.0bn	£1.0bn
Carbon Price Floor	0	0	0	£0.6bn	£1bn	£1.2bn
Total	**£2.5bn**	**£3.1bn**	**£3.5bn**	**£5.1bn**	**£6.1bn**	**£6.6bn**

Source: *HM Treasury, 2012*[viii]

This shift should include more ambitious policies to improve workplace and household energy efficiency. Alongside support for the lowest income households via ECO (discussed above), the Government's main vehicle for supporting households is the privately financed Green Deal, launched in January 2013. But the programme is falling well short of its targets. The latest data (September 2013), showed only 384 people had signed up to the Green Deal, making it unlikely the target of 10,000 by year-end would be met. In contrast in Germany, home energy efficiency investments are supported by the KfW state investment bank, which lends to consumers at very low interest rates of 1%-2%.

Given the worryingly slow take up of the Green Deal, the TUC believe that the government should charge the Green Investment Bank with lending to consumers along the same lines as the support provided by the KfW. This would imply increasing the £3bn funding available to the GIB and providing the bank with borrowing powers immediately.

A further source of funds could be provided through a reformulation of existing energy subsidies. The UK provides around £10bn of energy producer and consumer subsidies with fossil fuel subsidies are currently about three times greater than those provided for renewable energy and energy

efficiency measures. Subsidies cover new support for fossil fuel exploration, offsets against Petroleum Revenue tax (PRT), reductions to the rate of corporation tax for oil and gas exploration activities and tax breaks such as VAT for gas and electricity supply (VAT is set at 5% against the UK standard 20% VAT rate), support for renewable energy and nuclear decommissioning and tax breaks for low carbon technology.

Table 4: Overview of UK energy subsidies, 2013

Energy type	Annual value of subsidy, £	Source of subsidy	Comments
Oil	£159m £380m	Petroleum Revenue Tax (PRT) VAT	Government support to producers Consumer tax relief
Gas	£121m £3.51bn	PRT VAT	Government support to producers Consumer tax relief
Oil & Gas	£280m	Additional exemptions from charges; accelerated tax allowances.	Government support to producers
Coal	£4m £81m	Mining liabilities VAT 5%	Government support to producers Consumer tax relief
Nuclear (including historical liabilities)	£2.3bn	Govenment input to Nuclear Decommissioning Agency annual budget. Possible increases in budget may be required to deal with legacy Waste.	Government support to producers
Current Renewables	£2.4bn £152m £500m	Renewables Obligation Levy Exemption Certificates FITs	Government support to producers
Electricity	£2.2bn	VAT reduction	Consumer tax relief
Energy R&D **Climate Change Levy (CCL) discounts**	£300m £500m	All sectors Energy intensive industries (EIIs)	General services Consumer tax relief (but offset by CCAs)
Enhanced Capital Allowances (ECAs)	£100m	100% first year capital allowance for energy efficiency	Consumer tax relief

Source: Environmental Audit Committee: *Energy subsidies in the UK*, written evidence William Blyth, 2013[ix].

The International Energy Agency (IEA)[x] argues that progressively eliminating subsidies for coal, gas and oil could provide half of the carbon savings needed to stop dangerous levels of climate change. For HM Treasury, the primary objective of the UK's environmental taxes is to encourage

environmentally positive behaviour change: the more polluting the behaviour, the greater the tax levied. The TUC supports this view.

However, the Chancellor provided new tax breaks (worth around £2bn over five years) for deep North Sea oil and gas exploration in 2012. In July the Treasury launched a consultation on what Chancellor has said would provide in the UK the "most generous" tax regime for shale gas fracking in the world, which would mirror the support for harder-to-reach offshore oil and gas fields by cutting corporation tax on the fields from 62% to 30%. Meanwhile, DCLG published new guidance on how applications for shale gas developments should proceed through the planning system.

Expert independent advice from the Committee on Climate Change in its Fourth Carbon Budget provides a clear and viable pathway to meet the UK's 2030 climate change targets, with "manageable costs and impacts." The Committee[xi] made clear that "Extensive use of unabated gas-fired capacity (i.e. without carbon capture and storage technology) in 2030 and beyond would be incompatible with meeting legislated carbon budgets."

The TUC shares these concerns about the unabated emissions that fracking may generate. We also believe that the consumer benefits have been oversold, as despite the Chancellor's assertions there is no evidence that the process will cut energy bills. Deutsche Bank's special report, *A first look as EU shale gas prospects (2012)*, concludes that "those waiting for a shale gas 'revolution' outside the US will likely be disappointed, in terms of both price and the speed at which high-volume production can be achieved." The report sets out that "we believe it is too early to judge the recoverable resource size, let alone what commercial production rates may be possible." Lord Stern has also challenged the government's claim that "home-grown" fracked gas supplies would mean cheap energy for the UK, critiquing "baseless economics".

In contrast to the economic benefits, the environmental costs of fracking have been under-estimated. *Fracking by the numbers*[xii], a new study from the Environment America Research & Policy Centre, says: "People who live close to fracking sites are exposed to a variety of air pollutants including volatile organic compounds (VOCs) such as benzene, xylene and toluene. These chemicals can cause a wide range of health problems—from eye irritation and headaches to asthma and cancer."

Given these concerns Congress 2012 endorsed an energy motion, *Greenwash and the sustainable production of energy*, advising that precautionary principle should apply and opposing further shale gas fracking. In this context, the *TUC believes that the government would be well advised to heed the advice of the Committee on Climate Change's Fourth Carbon Budget as a means to provide a viable pathway to decarbonise our energy supply without further investment in unabated fossil fuels and shale gas fracking.*

C: Security of energy supply

Energy security has always been high on the political agenda, but its importance has risen as the UK has become increasingly dependent on imported energy, experiencing high and volatile oil and gas prices along with the challenge of reducing our carbon dioxide emissions. The Energy & Climate Change Committee inquiry into energy security (2012) concluded that the government's electricity market reforms did not strike the right balance between various forms of energy. The Committee

highlighted that a hectic "dash-for-gas" would risk locking the UK into a high-carbon electricity system posing a severe threat to the achievement of our long-term climate change goals.

The TUC believes that a diverse and balanced low carbon energy policy provides the best guarantee for sustaining secure energy supply, comprising a mix of nuclear, renewable energy (notably wind and solar power) and clean coal and gas with carbon capture & storage technology.

TUC December 2013

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