



**A joint response to the leaked UK Government's draft "Options Paper"
on the EU's 2020 20% renewable energy targets**

Friends of the Earth (England, Wales and Northern Ireland) and WWF-UK

"Renewables are key to our strategy to tackle climate change and deploy cleaner sources of energy."

UK Government statement in the Energy White Paper, May 2007

"Even more than they like markets, investors like certainty."

"The money is there, but regulatory uncertainty causes losses."

Vicki Bakhshi, associate director at F&C Asset Management and former member of the Stern Review team [1]

Introduction

Friends of the Earth (England, Wales and Northern Ireland) and WWF-UK are very concerned about the contents of the paper "Draft options paper on renewables target" – written by the Department of Business Enterprise and Regulatory Reform (BERR), formerly known as the DTI. This paper, which carries no date, appears to have been written around late spring 2007 and provides advice to UK ministers on what position to take on the European Union's proposed 2020 target for renewable energy.

The proposed 2020 EU-wide 20% renewable energy target was approved by heads of state at the EU Spring Summit in March 2007 – including the former Prime Minister Tony Blair – but negotiations are only just starting on how it will translate into national targets for the 27 member states. The DTI/BERR's "options paper" was leaked to the press in August. Its contents have not been denied by the UK Government, and it is now available online [2].

The main purpose of the DTI/BERR paper appears to be largely to find ways – including creative new "statistical interpretations" – for the UK to avoid having to significantly increase its share of domestic renewable energy. This seems perverse given the Government's commitment in the draft Climate Change Bill to reduce emissions by at least 26-32% by 2020, and given that, out of the 27 EU member States, the UK is one of the best endowed with a whole range of potential renewables resources, from offshore wind to wave power.

Furthermore, the leaked paper does not reflect the stated desire of the UK Government that the country should have a leadership role on climate change and the publication of this document is likely to have seriously undermined its international reputation on this issue. The

¹ Speaking at the conference "Climate Change, Politics Vs Economics", Chatham House, 26 June 2007

² <http://www.guardian.co.uk/environment/2007/aug/13/renewableenergy.energy>

fact that the UK Government is not conducting an open and transparent discussion on its position on EU renewables – but rather discussing its position behind the scenes – is far from being an ideal way to deal with European policy. Yet in the 2007 Energy White Paper, the government was claiming that renewables were “*key to our strategy*”. The “options paper”, although draft, clearly reveals a strategy to undermine the 20% renewable energy target agreed by the EU in March 2007. The eagerness of the UK to limit its share of the 20% target revealed in the leaked “options paper” reinforces the picture of the UK Government speaking with one intent, but acting with another.

Key Policy Asks

Friends of the Earth and WWF-UK regard climate change as one of the most serious threats facing the planet and human development, and one which demands urgent global action. To prevent average global temperatures from increasing by more than 2°C above pre-industrial levels – a threshold above which the risk of severe and irreversible tipping points in the climate becomes increasingly likely – the world’s emissions of greenhouse gases will need to peak and start to fall within the next 10 years. This requires all developed countries, and particularly those with claims to global leadership on the issue like the UK, to take urgent action to reduce emissions and develop renewable and sustainable low-carbon energy sources, along with much improved energy efficiency.

Friends of the Earth and WWF-UK are convinced that the 2003 Energy White Paper’s focus on energy efficiency and renewable energy was the right approach to take to effectively address both climate change and concerns over security of supply. The 2003 Energy White Paper also rightly set a minimum target for renewables to supply 20% of the UK’s electricity by 2020. However, we remain very concerned that the UK Government is still failing to provide sufficient support for the rapid development of renewable energy technologies and the reduction of UK energy demand, despite recent reviews of and responses to the Renewables Obligation (RO), last year’s Energy Review and this year’s Energy White Paper.

Overall, we are clear that the proposals put forward by BERR in its recent consultation on the RO are flawed in that they fail to address the scale of change in renewables deployment needed to meet both new and long-standing Government commitments. We urge the UK Government to rethink and upgrade its proposals and produce a set of renewable energy policies which are fit for purpose – particularly to ensure delivery of the UK’s share of the new EU renewable energy target of 20% of primary energy from true renewable sources by 2020.

Friends of the Earth and WWF-UK believe that the binding renewable energy target agreed by all Member States, including the UK, in March sets an ambitious but realistic benchmark against which the adequacy of domestic policies must now be measured. We call on the UK Government to bring forward new and truly effective policies which will ensure delivery of the UK’s fair share of the binding EU target for 20% of EU primary energy to come from renewable sources by 2020. Ambitious action on renewables will also be vital to deliver the emission reduction targets proposed under the Climate Change Bill.

In this context, we are very disappointed to see in the recently leaked “options paper” that BERR appears to be trying to find ways to undermine progress towards the UK making a fair contribution towards the renewables target. Furthermore the UK is proposing interpretations of the target which could water down the target for all countries.

Purpose of this critique

This briefing looks at a number of key statements or assumptions in the DTI/BERR “options paper” and points out those that are incorrect, misleading or contradictory.

These include statements that:

- the EU emissions trading system (ETS) is the main instrument of EU climate change policy
- meeting the EU targets on renewable energy would undermine the EU ETS

- the EU 2020 renewable energy target is seen as not credible e.g. by financiers
- the costs of a significant growth of renewable energy in the UK would be very high (and with no apparent benefits)
- promoting EU-wide green energy certificate trading over feed-in tariffs would be beneficial
- the government is devising a stakeholder engagement strategy on this issue

Both organisations are also planning to remind the UK Government and provide further evidence to the UK government and EU Commission in the coming months on the large potential for renewable energy growth in the UK.

We call on the UK Government to recognise the urgent need to strengthen UK domestic action on renewables build in the UK to help reduce carbon emissions, to whole-heartedly support the 20% renewable energy target, and to therefore do its utmost to support development and deployment of renewable energy techniques in the UK and throughout the EU.

Main statements of concern

Statement 1, page 1 of the leaked "Options Paper": "...the EU ETS is the EU's main existing vehicle for delivering least cost reductions in GHG".

This implies that the EU ETS is *the* key mechanism and that further mechanisms are unnecessary or should at least be designed to be subservient to ETS. But the EU ETS was designed as just one part of the first European Climate Change Programme (ECCP) [3], which was fully approved by all EU Member States including the UK. The ECCP – a comprehensive plan including a large amount of policies – established the EU ETS would cover around half of EU emissions. It has always been intended that the rest of EU emissions would be reduced through a number of other policies, including on energy efficiency and renewable energy. The EU already has in place targets for renewable energy growth by 2010 [4]. Not setting targets for 2020 would mean there would be a significant change in policy from the present situation.

Furthermore, and perhaps most starkly, the DTI/BERR "options paper" ignores the findings of the landmark Stern Review on the economics of climate change, which was carried out by Sir Nicholas Stern for HM Treasury in 2006 and widely regarded as the most authoritative report to date on this issue. The Review says that although emission markets will be crucial to climate change policy:

"carbon pricing alone will not be sufficient to reduce emissions on the scale and pace required." [5]

The Review adds:

"in addition to direct emissions pricing through taxes and trading and R&D support, there are strong arguments in favour of supporting deployment in some sectors when spill-overs, lock-in to existing technology, or capital market failures prevent the development of potentially low carbon alternatives." [6]

Energy efficiency and renewable energy are widely recognised as sectors where deep market failures exist and where other policies are required on top of emissions trading.

3 <http://ec.europa.eu/environment/climat/eccp.htm>

4 Information on this existing Directive, from the DTI's own website, is here: <http://www.dti.gov.uk/energy/sources/renewables/policy/european/directive/page23710.html>

5 HM Treasury, "The Stern Review on the Economics of Climate Change", page 347. Available here: http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

6 Stern Review, page 365

Statement 2, page 1: *“Tightening the EU ETS caps to reflect the renewables target imply taking EU wide emission reductions beyond the 20%.”*

This is a surprising statement because it suggests that the UK does not see it as a desirable goal to achieve more than the EU’s 20% emission reduction target for 2020. This is a modest, unilateral target the EU has committed to, if no other country in the world sets for itself a 2020 target.

If other countries commit to long term targets, the EU has agreed it will aim for a 30% reduction target. The 30% target is a lot closer to what is needed if the EU is to respect its commitment to implement policies that would keep climate change below a 2 degree increase over pre-industrial levels [7]. A temperature increase of no more than 2 degrees is seen by many scientists as a critical threshold. Although climate damages below this level will be substantial, above this limit changes in the climate could become catastrophic and irreversible.[8]

It is perhaps true that if the EU achieves a 20% share of renewable energy and a 20% increase in energy efficiency (another target the EU is committed to) then this may already bring about emission reductions of more than 20%. This could have some implications for EU ETS framework – which is what the authors of “options paper” appear to be concerned about.

However – it would also mean that EU climate policy has been successful! The EU ETS is a means to an end rather than an end in itself and it is surprising that the UK government places the mere existence of the EU ETS above the primary objective of meeting climate change targets. While the UK’s interest to boost the role of the City of London in the carbon market is understandable, it would be ironic if this was given higher priority over actually fighting climate change.

In addition, solutions that would enable the carbon market to continue playing a crucial role do exist. The main one would be to aim for the higher target of at least 30% – which is more in line with the science of climate change [9] – and making sure the EU ETS stimulates the achievement of the portion of this target that can’t be achieved through energy efficiency and renewable energy alone. The “options paper” does recognise that one option would be to set a cap in EU ETS that assumes achievement of the renewables target is one option. It is perhaps the only option compatible with respecting the EU commitment to fighting dangerous climate change and staying below 2 degrees.

In addition, the EU ETS only covers large emitters rather than, for example, the commercial/office building sector or the housing sector. The transaction costs associated with extending it to these sectors would be huge and impractical. These sectors need to be covered by concrete policies that are already proven to work, such as the Energy Efficiency Commitment (EEC).

Statement 3, page 2: *“the cost of increasing renewable energy technology to reduce GHG emissions is around 3 times higher than allowing flexibility in reduction options through emissions trading”.*

7 For more information on the EU’s commitment to a 2 degree target: COM(2007)2, “Limiting Global Climate change to 2 degrees Celsius, The way ahead for 2020 and beyond,” 10 January 2007.
http://ec.europa.eu/environment/climat/future_action.htm

8 Above this temperature 20-30% of animal species could become extinct; millions more people could experience coastal flooding each year; 30% of global coastal wetlands could be lost; all regions of the world would experience a net decrease in agricultural productivity. Information from the report of the 2007 Intergovernmental Panel on Climate Change Working Group 2.

9 A recent Swedish study – “The scientific basis for climate change policy” – suggests that the EU should reduce emissions further than 30% in order to have a good chance of achieving the 2 degree target.
<http://www.sweden.gov.se/content/1/c6/08/69/68/f8d98215.pdf>

This statement is very vague and can hardly be said to be evidence-based. Also, one of the reasons why costs for increasing renewable energy technology can at times appear to be higher than other more established technologies is because of existing market failures. Addressing these market failures through appropriate policies would change the balance of costs.

In addition, the Stern Review says that:

"it is estimated that \$10 billion was spent in 2004 on renewable deployment [worldwide], around \$16 billion is spent each year supporting existing nuclear energy. [...] Such sums are dwarfed by the existing subsidies for fossil fuels worldwide that are estimated at \$150 billion to \$250 billion each year" [10].

The "options paper" is generally very negative about renewable energy, and does not make any significant, concrete suggestions on how to increase its market share in Europe or the UK. It only makes some tentative suggestions on how to make sure other countries invest in renewable energy, such as Eastern European countries and North Africa, despite the huge potential for renewable energy in the UK and the benefit of investing in these technologies domestically. It ignores the benefits of renewable energy more generally, such as increasing security of supply, reducing energy imports, and job creation. For example, in a just a few years, Germany has created 214,000 jobs in the renewables sector [11].

Also, the aim of a renewables target is to accelerate technological development. This kind of target should be evaluated not solely according to the cost per tonne of carbon saved, but also in terms of whether it leads to a cost-reduction in renewable energy technology. Existing renewable energy targets have so far been successful in accelerating this technological development and in bringing costs down.

Statement 4, page 13: *"The credibility of the EU 2020 renewable energy target itself is a major theme... a recent gathering of financiers to discuss the issue suggested that the target is unattainable."*

This statement appears to be very vague and therefore it can be seen as unsubstantiated. Several international conferences in the past year have praised the targets the EU set for itself. While many undoubtedly recognise the EU 2020 renewable target is ambitious, they also argue that it provides the important, welcomed certainty to investors that there will be a market for renewable energy and energy efficiency technologies in the coming years. This was a widespread theme at "Financing Clean Energy" – a conference of public and private sector energy experts and investors held at the European Bank for Reconstruction and Development in March 2007 – where Gordon Brown also gave a speech [12].

For example, at this conference, Richard Samans of the World Economic Forum praised the results of the EU 2007 Spring Summit (which had taken place a few days earlier, and where heads of state approved the renewable energy targets) saying it had led to "very significant progress". The EBRD president had similar words of praise for the EU summit conclusions.

Neil Hirst of the International Energy Agency told another energy conference in Brussels in January 2007 [13] that the EU proposed renewable energy target was "desirable" and also "achievable but demanding". At the same conference, Winfried Hoffman of German solar manufacturer Schott Solar said a target of up to 40% of renewable energy would theoretically be achievable in 2020, given current impressive growth trends in some EU countries, and provided the right policies were in place all over Europe.

10 Stern Review: page 367

11 For more info, see: <http://www.unendlich-viel-energie.de/index.php?id=282>

12 agenda and transcripts available here: <http://www.ebrd.com/new/calendar/fce/agenda.htm>

13 agenda and video recordings of all sessions available on: <http://www.erec-renewables.org/133.0.html>

The solar thermal market witnessed record growth in 2006, with installations up by 47% in the EU27 plus Switzerland, and as much as 58% in Germany alone [14]. However, Hoffman cautioned that if the existing EU renewables targets for 2010 – which was set in 2001 – had not existed, his company certainly would not have grown and invested as much.

A more recent conference on climate and energy economics took place at Chatham House in London [15]. Lehman Brother's senior economic policy advisor Dr John Llewellyn said that – after interviewing hundreds of CEOs about climate change policy for a recent report he produced [16] – he felt confident that a large number of them want to do more to combat climate change. However, they don't want to be the first movers, so they are telling governments: "Put us under pressure".

At the same conference, Vicki Bakhshi of F&C Asset Management and former senior member of the Stern Review team said:

"There's been a sharp increase in research in the investment bank sector. This means investors are hunting around, putting money in the solutions when they can find them".

Bakhshi added the biggest danger is uncertainty about future regulation.

If the UK Government continues to push in such a negative way in the EU to ensure that after 2010 there are no renewable electricity or heat targets (i.e. one of the options listed in the leaked DTI/BERR "options paper"), and that delivery of renewable energy growth should be left solely to the EU ETS system, this will actively undermine investor confidence in the future of renewables. The same will happen if the UK pursues another option mentioned in the BERR paper – that investment in nuclear power should be counted towards the target. If these options were to be adopted into EU legislation, then the perceived lack of investor interest in strong renewable energy growth could well turn into a self-fulfilling prophecy.

Statement 5, page 4: "This approach would give the UK a target of around 16% which would be very challenging".

Also page 8: "This would equate to a challenging (but achievable?) renewable energy target of delivering around 9% renewable energy use in the UK by 2020, at a cost of approximately GBP4 billion".

The targets that are likely to emerge from the EU renewables directive are undoubtedly challenging. However, recent and impressive renewable energy growth figures from Germany show that rapid progress at a reasonable cost – and with clear economic benefit in terms of increased employment, export opportunities and reduced dependency on imported fossil fuels – is possible with the right mix of policies.

Germany has increased its share of renewables in the electricity mix from 5.4% in 1999 to more than 10% in 2005 [17]. The year 2006 witnessed a record growth, as 11.8% of electricity was produced from renewables that year and the current forecast for 2007 is that the government's 12.5% objective for 2010 will be reached three years ahead of time, by the end of the year – when the share of renewable electricity in the German market could reach a share of up to 15% [18]. This has helped Germany establish a small and medium-sized innovative industry, which now exports renewable energy technology worldwide.

14 http://www.estif.org/index.php?id=46&backPID=2&pS=1&tt_news=128

15 see note 1

16 "The Business of Climate Change, 2007 – Challenges and Opportunities", available on the Lehman Brothers' website: <http://www.lehman.com>

17 statistics and information in English is available here: <http://www.unendlich-viel-energie.de/index.php?id=282>

18 Source: conversation with European renewable industry expert, who was quoting preliminary German government data. The 15% share is likely to be achieved if this year's favourable wind conditions continue until the end of the year.

In contrast, a recent report by Cambridge Econometrics [19] found that the UK will miss its renewables electricity target for 2010 and 2015 by wide margins. However, it also found that it would nearly meet its target for 2020 if electricity demand continued to rise and fossil fuel prices remained high. (It would also be possible to meet the renewable energy target by promoting a very large increase in energy demand reduction efforts – for which there is a large potential in the UK. These options would obviously also be more effective in cutting emissions from the electricity sector.)

One area with a lot of unexploited potential – which also appears to be underestimated in the DTI/BERR “options paper” – is renewable/efficient use of heat. For example, at the moment, the UK is planning to build several Combined Cycle Gas Turbine (CCGT) stations. Many consider this to be a missed opportunity given that a portion of these new plants could use Combined Heat and Power instead of CCGT, thereby using heat that would otherwise be wasted. This technology is 15-30% more efficient compared to technologies that produce electricity and steam separately.

In addition, there is a very large potential for the growth of solar thermal and ground source heat pump technology at a reasonable cost. A report written by Future Energy Solution for the DTI and Defra [20] estimates that renewable energy could fuel around 34.9 TWh/y in 2020 – which is 4.7% of the total projected UK heat demand for that year. However, the report recognises – as do many energy experts – that the potential is much higher. In addition to benefiting climate change policy, increasing the use of renewable heat would have a particularly important role in reducing consumption of imported fossil fuels and enhancing security of supply [21].

Taken by itself, a figure of £4 billion or higher may seem like a lot. However, this needs to be put into context, for example against the background of a rapidly growing UK economy. This figure corresponds to around 0.3% of the UK’s GDP in 2005. It is only slightly higher than the estimated cost of widening a 51-mile (82 km) stretch of the M6 motorway, which at £2.9 billion (€ 4.2 billion) will cost around £57 million per mile or € 51 million per kilometer [22].

The cost figures contained in the DTI/BERR briefing are also incomplete because they only look at “energy system costs”, i.e. the cost to the energy companies and government of installing and accommodating renewable energy, minus the fuel saved. But they do not take into account macro-economic impacts on the country, such as the impact of stimulating job creation in high-value added sectors of the economy such as environmental services and consultancy.

And nowhere in the “options paper” does the DTI/BERR mention the huge cost of unabated climate change, which the Stern Review places at around 20% of GDP globally, against an estimated cost of around 1% to keep it under control. This is a very large oversight by DTI/BERR.

Statement 6, page 9: “The theoretically neat instrument [...] would be using tradable green energy certificates across sectors and across member states.”

While looking for “theoretically neat” solutions is tempting, it would also be useful for the UK and the EU administrations to consider and compare which solutions have already been proven to work in practice. The Stern Review found evidence that price-based support for renewable

19 “UK Energy and the Environment”, the latest of a series of twice-yearly reports, is available here: http://www.camecon.com/press_releases/uk_energy_environment.htm

20 <http://www.defra.gov.uk/farm/crops/industrial/energy/pdf/fes-renewable-chp.pdf>

21 A comprehensive outline of the large potential for renewable heat in Europe can be found on the European Renewable Energy Council website:

http://www.erec.org/fileadmin/erec_docs/Projcet_Documents/K4_RES-H/Action_Plan.pdf

22 <http://www.guardian.co.uk/transport/Story/0,,2138044,00.html>

energy, such as feed-in tariffs, has been more effective and less costly than renewable obligation-type systems [23] (currently the system operating in the UK). The UK's Carbon Trust found similar evidence [24].

The German renewable energy law, mostly based on feed-in tariffs, has been very successful (see growth rates states described above, under statement 5). A variety of different renewable technologies have grown, rather than just onshore wind power (as in the UK). Spain and Denmark have similar laws, and around 40 other countries around the world are now putting in place similar systems – including Brazil, China and India. Denmark is currently planning to increase renewable energy to 30% in 2025, up from 15% in 2006.

Quota based-systems also have advantages. However, in the UK and Italy, where a quota system is in place instead of feed-in tariffs, the spread of renewable energy is well below that of other countries. The UK is well behind in the EU-27 countries in terms of renewable electricity penetration, despite having a very high potential [25]. Of course there may be a variety of reasons for this, but circumstantial evidence does indicate that feed-in tariffs in the past few years have proven to be more effective at increasing the level of deployment of renewable energy technologies.

Statement 7, page 14: “A UK stakeholder engagement strategy is being developed to include business, NGOs, finance sector and other parties more closely in our thinking going forward”.

The DTI/BERR “options paper” generally only reflects the views of large energy companies rather than renewable energy industry and environmental organisations. Friends of the Earth and WWF have had occasional individual meetings with DTI/BERR officials, but no formal stakeholder engagement strategy appears to have been put in place so far to discuss UK or EU 2020 renewables targets. Suggestions and evidence provided by these organisations do not appear to have been taken into account in any significant way in the DTI/BERR paper.

Seemingly, the DTI/BERR does not appear to have given sufficient consideration to the evidence NGOs provided in consultations in the lead up to the 2007 Energy White Paper nor in the related DTI consultations on Renewable Obligation (RO) reform. The government has chosen “banding” of the RO over the introduction of feed-in tariffs, despite the evidence on and support of feed-in tariffs.

Finally, over the course of the past 18 months, Friends of the Earth staff have asked the DTI/BERR whether rumours the UK Government was lobbying against the renewables targets in Brussels were true – and have been told that this was untrue. However, the “options paper” by DBERR reveals a very different story.

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23 pp.366–367.

24 <http://www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CTC610>

25 In 2005, according to Commission data, it appeared to be 18th out of 27 in terms of renewable electricity penetration.

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/12&format=HTML&aged=0&language=EN>