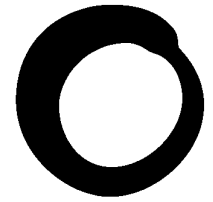


July 2011



**Friends of
the Earth**

Briefing

Is Policy Exchange's Plan B up to the job?

Policy Exchange's new report "*Climate Change Policy – time for Plan B*" argues that current UK and EU efforts to get a global agreement on climate change have failed. But is the alternative they put forward up to the job? This briefing argues that it isn't and explains why their Plan B has serious flaws.

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Introduction

Policy Exchange's new report "*Climate Change Policy – time for Plan B*"ⁱⁱ argues that UK and EU efforts to get a global agreement on climate change, based on a "lead-by-example" approach, have failed, and that as a result it is time for a "Plan B". This Plan B has two elements.

First, they argue that in the ongoing EU debates on whether to go to a 30% target, a tougher target should not be adopted because such a course would be irrelevant - arguing that EU emissions are a small part of the global total and that moving further will not in any case encourage other countries to take greater action. Instead, they propose a focus on deploying the most cost-effective technologies – which they say means dropping the EU renewables target, cutting UK and EU support and ambition for solar and offshore wind, and increasing support for carbon capture and storage.

The second part of their plan B is to make "preparation for a warmer world". This is based on their analysis that the chances of keeping temperature rises below 2 degrees are now slim. They advocate "preparation for worst-case scenarios, including catastrophic outcomes" and research into back-stops, particularly the release of sulphate aerosols to cool the planet.

Friends of the Earth agrees with Policy Exchange's analysis that:

- "Society's ability to adapt to very extreme warming is likely to be limited";
- "There should be "continued efforts to promote mitigation";
- Geoengineering techniques such as Solar Radiation Management have "obvious drawbacks"
- There is huge potential for technologies such as Solar Photovoltaics to be a major part of the solution to preventing dangerous climate change; and
- There is frustratingly little progress at international level.

However, Friends of the Earth does not agree with the Policy Exchange's proposed response to these challenges. First, Policy Exchange are effectively advocating giving up on preventing 2 degrees, and hoping that humanity will be able to adapt effectively to higher temperatures. This is an exceptionally dangerous and risky approach to take. Second they are advocating rowing-back on technologies which are critical components of attempts to keep below 2 degrees.

In addition, some of the Policy Exchange analysis to support their recommendations is in our view deeply flawed. Overall, if their prescriptions were carried out, it would lead to less progress on climate change. This briefing sets out why. There are four main issues. We argue that:

- **What the EU does is crucial – and moving to a 30% target is essential**
 - There is indeed inadequate international progress so far. But this is no argument for the EU not to do what is necessary. If there was a communal fire, and not enough people were attempting to put it out, then the solution would not be for those with buckets to put them down. The EU's current 20% target is not sufficient and proposed EU moves to a 30% target should be a bare minimum action.

- The EU's emissions may be a small percentage of the global target (although the only regions/countries bigger are the USA and China), but so are those of any region or country on their own. On this argument, everyone would do nothing on the grounds that it would make no difference.
- **The EU renewables target helps deployment and brings down costs**
 - Renewables are an essential component of a low-carbon future. The EU renewables target gives investors greater certainty that the EU are serious about renewables deployment, and this in turn helps drive down costs.
 - The EU is increasingly having to import more oil and gas. Investment in renewables can help reduce these economic costs, which will increase if fossil fuel prices continue rise, which is extremely likely.
- **Policy Exchange downplay the potential and importance of solar and offshore wind**
 - The report heavily overestimates the costs of solar, and so its recommendation to drop solar ambition is based on inaccurate analysis and should be ignored.
 - The report heavily downplays the global potential of offshore wind, the main justification for its recommendation that the UK drops its offshore wind plans. Offshore wind has a critical role in the UK's decarbonisation plans, and we are a world leader in this technology's deployment. This should be stepped up, not held back.
- **More adaptation is essential, but there are extreme risks with the approach Policy Exchange are proposing:**
 - They appear to be largely giving up on 2 degrees, and implying we should be trying to adapt to a 3.5 degree world, or higher. This would be truly terra incognita – there would likely be colossal suffering and very high risks of catastrophic tipping points, which Policy Exchange acknowledge may be impossible to adapt to. We must try and prevent this from happening, not pretend we might be able to adapt to it.
 - Geoengineering “back-stops” do need more research, but Policy Exchange appear to be focusing on the most dangerous and risky types of geoengineering – Solar Radiation Management.

This briefing sets out the detail on these points.

The EU 30% target and leadership

Policy Exchange detail the depressing lack of success internationally so far in getting an effective global agreement on climate change. In response they say that the “*EU should continue to promote mitigation at the global level, retaining its own 2020 emissions reduction target and its high level of ambition on longer-term decarbonisation*” but a 30% target would “*at best...be viewed as an irrelevance*”.

This attitude does not appear to make much sense. Later in the document the Policy Exchange devote several pages to outlining the very unpleasant potential consequences of allowing climate change beyond 2 degrees (eg “*more than a billion people may have to migrate – increasing the risk of conflicts*”). If this is the case, then EU policy should be consistent with its role in preventing this. Even a 30% target is still below a minimum requirement compatible with this 2 degree goal.

The lack of progress internationally is depressing, but the reaction to this should not be for the UK and EU to do even less. If there was a communal fire, and not enough people were attempting to put it out, then the solution would not be for those who were trying to stop.

Policy Exchange are also being rather misleading in implying that the UK and the EU are genuine leaders here – neither have targets compatible with a better than 50:50 chance of not exceeding two degrees, and both have climate plans which are dependent on buying in emissions credits from the countries they are attempting to portray as laggards. The authoritative academic group Climate Analytics assess the EU's progress as: “*The EU27 unconditional commitment of 20% below 1990 levels is rated Inadequate. If the conditional target of 30% below 1990 were adopted, the EU27 target would be rated Medium, just short of the Sufficient category, in which reductions from 1990 stretch roughly from above 30% to 45%*”ⁱⁱ. The EU should move to a 30% target as soon as possible, and keep its 2020 renewables target – this is crucial to drive investment and cost reductions in essential renewable technologies.

Policy Exchange also imply that moving to 30% would bear unacceptable economic costs. It cites the EU Commission's estimate of direct costs of an extra 33 billion euros a year in 2020. However, the same source also says that this cost is just 0.2 per cent of EU GDP, and there are “co-benefits” of moving to the 30% target from reducing the EU's oil and gas import bill of 40 billion Euros, and that's with an assumed oil price of \$88 a barrel in 2020, which looks a distinct underestimate. The EU also estimates the economic and health benefits of lower air pollution at 3-8 billion euros a year in 2020ⁱⁱⁱ. In addition over 70 major European companies have very recently called for the EU to adopt a 30% target, and they argue in detail that increasing the EU's target will be good for the EU economy and jobs^{iv}.

EU renewables target

Policy Exchange argue that the most important action on climate change is to bring down costs of low-carbon technologies, particularly the most globally deployable ones. They cite Solar PV as being one of these critical technologies.

But deployment will not happen in a vacuum, particularly in a policy arena which has been characterised by Lord Stern as the “greatest market failure the world has seen”. Strong, clear frameworks are essential to guide markets and investments. It is precisely because the EU has got strong renewables targets and renewables policies underpinning them that the EU has seen its renewables deployment increase.

The German Feed-in-tariff policy and others have driven R&D and deployment and pushed technology costs down very fast. Investors will move to countries where there is a “loud, long and legal” policy framework for renewables. Weaker targets will mean slower progress on the very thing Policy Exchange say is so important.

The cost of solar?

Policy Exchange cite the huge potential for Solar Photovoltaics (PV) and concentrated solar power (CSP) – at 25 times projected worldwide electricity demand in 2030.

Solar PV deployment is growing extremely fast - particularly in Europe, where solar electricity production has quadrupled in the last 5 years. However, Policy Exchange advocate reducing projected deployment of solar PV in Europe by two thirds – they say that replacing this capacity with nuclear power “could produce EU-wide savings of up to £15 billion pounds a year”.

This £15 billion figure is not accurate. It is based on the Committee on Climate Change's figures for 2020 levelised costs – which they give as 17.5p-33p/kWh for solar, and 5.5p-10p/kWh for nuclear. There are three problems here:

- Policy Exchange are taking the high-end of the CCC's cost range for solar, and the low-end of the cost range for nuclear^v. Solar prices have been falling far faster than expected. Reuters report the Italians say grid parity will occur by 2017^{vi}. Wacker Chemie say German levelised costs have fallen from 35 cents/kWh in 2006 to 18 cents in 2010 – ie around 16p/kWh - and continue to fall fast. Ernst and Young said in June 2011 that UK solar can achieve grid parity with retail prices without subsidy by 2020^{vii}. So costs are likely to be below the low-end of the CCC's figures for solar. However with nuclear the opposite is likely to be the case – the industry has been plagued with cost over-runs in France, the USA and Finland; countries planning new nuclear build.
- The CCC's figures are for the UK, but it is EU deployment which they advocate reducing. Of the EU's projected 80 TWh, the majority is in Germany, Italy and Spain, which have far lower levelised costs than in the UK. It's plain wrong to extrapolate UK figures to the EU.
- The CCC's figures are based on 10% discount rates across all technologies, whereas the Mott McDonald research they are based upon is clear that solar has a

lower discount rate than nuclear; using an average discount rate across technologies skews these figures against solar.

There is a theme running through Policy Exchange's report that help for renewables is expensive subsidy which should be dropped. But other technologies receive subsidy as well. Globally, total fossil fuels subsidy is estimated by the International Energy Agency at \$300 billion a year, and the nuclear industry also continues to receive multi-billion pound direct and indirect subsidies, such as for decommissioning, waste storage and limited liability for accidents^{viii}. Subsidy for renewables is necessary – to help new technologies in an arena awash with massive market failures – and is a short-term investment to help these technologies compete with long-standing industries who have benefitted from huge levels of state-support for decades. Fossil fuel and nuclear are well-established industries and their subsidies need to be phased out as soon as possible, but the EU and UK are right to provide focussed support for emerging clean technologies such as solar.

The potential for offshore wind?

Policy Exchange note the UK's massive ambitions for offshore wind, but argue for downscaling of this ambition on cost grounds and that offshore has "much more limited potential as a major global technology". They say its technical global potential "is only 1% of solar PVs".

This 1% figure gives an unwarranted perception that offshore wind is unimportant. It is only 1% because solar's potential is colossal, not because offshore wind's is small. Policy Exchange themselves say that solar's potential^{ix} is 25 times that of 2030 global demand. Offshore wind's global potential of 6,000 TWh is in fact equivalent to 20% of global electricity demand in 2030. This is in no way an insubstantial amount.

Policy Exchange also claim that offshore wind is "relatively costly". It is more expensive than onshore wind, but Mott McDonald's 2011 report for the CCC notes that relative prices for offshore wind, CCS and nuclear are very dependent on scenario – "it is possible to find cases where offshore wind, CCS and nuclear are each lower cost than the other two"^x – and that costs are expected to be down to 10-11p/kWh by 2020. A strong policy framework will also drive costs down further.

In addition, the policy prescription – to replace offshore wind capacity with more onshore capacity – does not appear plausible. It implies a total onshore wind deployment to almost as high as the UK's entire technical potential within 10 years.

Elsewhere in their report, Policy Exchange advocates that the UK "*can contribute best if it focuses on the comparative advantage it holds*" – this applies also to offshore-wind. We are a world-leader here, and the UK needs to continue this role to help offshore-wind's costs fall further, helping more rapid worldwide deployment.

Adaptation

Policy Exchange note the high likelihood that the world will warm by more than 2 degrees, and argue legitimately enough that climate policy should “address the potential consequences of warming significantly in excess of two degrees”. Their two responses to this are “adaptation” and “backstops”. The third and not mentioned response however is that there should be far higher effort put into preventing 2 degrees from happening.

This is a critical point – as Policy Exchange themselves highlight, going above 2 degrees is not something humanity should be risking. They say that beyond two degrees “more than a billion people may have to migrate”, that “there are changes in water availability threatening up to a billion people” and that there would be “more intense storms, forest fires, droughts, flooding and heat waves”. In addition, they cite the ever-increasing risks of going beyond irreversible tipping points when temperatures pass 2 degrees.

Any sane response to this would be to focus overwhelmingly on trying to prevent this from happening. In other areas of public policy involving risks of catastrophic events, such as international terrorism, there is rightly a focus on contingency planning in case of a disaster, but the overwhelming focus is on prevention. The response to there being a high likelihood of going above two degrees must be to redouble efforts to prevent it, not to accept it as inevitable and try and prepare for it. Policy Exchange's response (ie not upping EU efforts) will inevitably lead to the higher warming they say is so dangerous and potentially catastrophic.

On the specific measures for adaptation – first we note that Policy Exchange themselves say that “society's ability to adapt to extreme warming is likely to be limited”. They argue that this is still worth doing -citing an example of the 1918 flu pandemic, where if public health measures had cut deaths by only ten percent, that would have saved 2-4 million people (out of 20-40 million people killed). To us, this sort of argument just reinforces the need to prevent this happening in the first place. If adaptation meant that 900 million people went without water instead of 1000 million that would be a huge achievement, but surely better to prevent it happening for the other 900 million in the first place.

On costs, Policy Exchange give global cost estimates of adaptation at “\$4billion to well over \$100 billion a year”. However, the reference this comes from is clear that this is not a global figure, but for developing countries only, and for 2010-2015, ie well before the majority of warming is likely to take place. The real costs will therefore be substantially higher. The reality is that adaptation will be spectacularly expensive and often not possible – this is why the Stern Review concluded that it will be far more “cost effective” to prevent climate change than try and live with it.

Policy Exchange are right to say there needs to be more research into “backstops”. This is urgent. However, they are also right to point out the extreme dangers of such approaches, particularly the unintended and currently unknown consequences of deploying techniques such as Solar Radiation Management. It's also extremely uncertain whether these techniques would be successful at sufficient scale to make an appreciable difference, or the cost or energy implications of doing so. While research is needed here, it must not be at the expense of or a distraction from vastly increased effort in bring global greenhouse emissions down – the overwhelming priority.

Conclusion

Policy Exchange are right to highlight the major negative impacts from climate change if there continues to be a lack of international progress on climate change. But the UK and EU need to toughen, not weaken, their domestic action if they are to do their part in preventing those dangers.

Policy Exchange are wrong to portray renewables as an expensive luxury - investment in renewable technologies is an essential part of any coherent, cost-effective plan on climate change.

Contact

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ⁱ [www.policyexchange.org.uk/images/publications/pdfs/Climate_Change_Policy - Time for Plan B.pdf](http://www.policyexchange.org.uk/images/publications/pdfs/Climate_Change_Policy_-_Time_for_Plan_B.pdf)

ⁱⁱ <http://www.climateactiontracker.org/country.php?id=2921>

ⁱⁱⁱ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0265:FIN:EN:PDF>

^{iv} http://www.theclimategroup.org/_assets/files/Business-Declaration-on-Increasing-Europes-Climate-Ambition-22-02-11-arguments.pdf, and
http://www.theclimategroup.org/_assets/files/business_declaration_june_15_2011.pdf

^v Saving is given as 27.5p/kWh, (33p minus 5.5 = 27.5p).

^{vi} <http://www.reuters.com/article/2011/05/05/italy-solar-idUKNLDE7440Z920110505>

^{vii} Ernst and Young, June 2011. The UK 50kW to 5MW solar PV market

^{viii} IEA, 2010. Fossil fuel subsidies = \$312 billion a year,
<http://www.worldenergyoutlook.org/docs/weo2010/factsheets.pdf>

^{ix} made up of 470 PetaWatt hours (PWh) solar PV, 280 PWh CSP

^x Mott MacDonald, 2011. Costs of low carbon generation technologies, pxvi.
<http://www.theccc.org.uk/reports/renewable-energy-review>