



## IEAGHG Information Paper; 2013-IP1: Unintended Consequences of Low Carbon Policies

**Background:** *Global and Local impacts of renewable energy policy*; D.J Ward and O.R Inderwildi, Oxford University

I recently read a thought provoking article in the Energy And Environmental Science Journal entitled “Global and Local impacts of renewable energy policy”, authors D.J Ward and O.R Inderwildi from Oxford University. The authors suggest that policy measures in one country can have unforeseen global impacts if considered in isolation. The authors refer to the UK’s renewable energy target, 15% of UK final energy demand by 2020, which will they argue require a large consumption of biomass for electricity, heating and transport use. Their analysis suggests that this demand for biomass can only be met by importing large amounts of biomass. They indicate that the amount imported will be several times larger than the amount of coal currently imported in the UK. The local impacts include: expansion of port capacity, has implications for road and rail freight activity and could require changes to the electricity infrastructure as well as the future location of industry. The global implications, the trade in biomass will expand considerably, hugely if other countries follow the UK lead which will raise ethical and environmental concerns as well as potential impacts on food production and deforestation and a reduced availability of cheap biomass for the world’s poor.

The authors also point to the EU biofuels Directive (2003/03/EC) as a case example which has had significant adverse effects. The biofuel required to meet the targets set under the Directive meant that the EU had to rely on imports. This has led to a global market for biofuels and as a consequence has contributed to land use change e.g. deforestation in south East Asia for palm oil farming. The EU Directive they argue increased global emissions and counteracted a UN Initiative on Reducing Emissions from Deforestation and Degradation.

The full paper can be found at:

Contents Alert for Energy & Environmental Science - 2013, Volume 6, Issue 1

<http://pubs.rsc.org/en/Journals/Journal/EE?issueID=EE006001>

The IEA in its Medium Term Gas Market 2012-2017 review points out that shale gas in the USA has displaced coal in its internal market, but that the coal is being exported cheaply and as a consequence coal burn in Europe is expected to increase in the coming years. Emissions reduction in the USA as a consequence of burning more natural gas could therefore contribute to an emissions increase in Europe as a result.

The IEA report can be found at: <http://www.iea.org/w/bookshop/add.aspx?id=427>

Dr Johannes Thyssen in an E.ON Press Conference on the 13<sup>th</sup> November 2012 stated that he felt that in Germany despite the increasing share of renewables E.ON fields that the power supply is not getting cleaner. He indicates that because of the preferential dispatch of renewables clean modern gas fired power plants are being crowded out of the market. The irony of which he points out is that old coal fired power plant can still make money, therefore climate friendly technologies are losing out. He goes on to say that that Germanys expensive renewable surplus is exported at low cost and argues that as long as the number of emission allowances don’t change this doesn’t encourage climate protection.

The full text of the Press Conference can be found in [www.modernpowersystems.com](http://www.modernpowersystems.com), December 2012.



We cannot of course fail to note the latter point that the EU ETS was a policy measure designed to assist EU countries to reduce emissions in a lowest cost way across installations, sectors and countries. However it has not worked to support financially low carbon technologies technologies like CCS and the effect of this is that there is still insufficient financial support in Europe for CCS, which has resulted in a low market take up of CCS. What do these articles tell us:

- In a global market place, policies in countries unless considered fully can have global consequences, especially it seems where policies are forcing early market take up of low carbon technologies.
- When setting policies governments need some sort of global risk assessment to consider the unintended consequences of that policy to avoid any global downsides
- That energy policy and climate protection policy are not always working together towards the goal of reducing global warming.

Lets hope that we can learn to put energy policy and climate protection in the same room when policy decisions are made and work towards a common goal of combating global climate change in the future.

It seems that policy making and particle physics are not that far apart when we consider Einstein's famous quote "*For every action there is an equal and opposite reaction*"

John Gale  
January 2013