

## **Messages for the Paris Conference: The forgotten dimensions of climate change**

*Scientists for Global Responsibility Conference and AGM, 31 October 2015*

*The Gallery, Farringdon, London, UK*

*Summary by Gwen Harrison and Stuart Parkinson*

The aim of SGR's 2015 conference was to step back from the main focus of the Paris climate change negotiations – near-term carbon emissions targets and financial transfers from rich to poor nations – to look at some of the broader and deeper issues that are not being discussed. The main areas of discussion at our event were how to keep the overwhelming majority of fossil fuels in the ground, and the links between climate change and the military. About 65 people attended the day.

### ***Keeping 80% of fossil fuels in the ground***

The first plenary session began by focusing on key technological options for keeping at least 80% of fossil fuels in the ground, and then on policies and measures that might help achieve this.

#### *Progress towards all-renewable electricity supplies*

The first speaker was Prof Keith Barnham, from the Department of Physics, Imperial College, London. He is also author of the book, *The Burning Answer*, which argues in favour of a solar revolution.

Keith began by presenting evidence that solar photovoltaic panels (PV) were mainly responsible for bringing the German wholesale electricity price down by 20% between 2007 and 2011, despite only providing 3% of its electrical energy by the end of this period. This, he explained, is because peak demand in Germany matches the peak supply for solar at around noon. He then presented graphs showing that this price fall had continued in the years since 2011. Together with complementary wind energy – which is fairly reliable on a national scale – the expansion of solar could cause the average wholesale price in Germany to fall to zero by 2020. There are distinct similarities with the UK situation, so could we reap similar cost rewards in this country?

To help answer this, Keith introduced the Kombikraftwerk project, which simulated on a small scale how renewables could meet 100% of real-time electricity demand in Germany. The project demonstrated that PV and wind, together, can supply around 78% of German demand. This could be complemented by 17% electricity from biogas, which can be turned up or down as necessary. This system would then require only 5% back-up from electricity storage, contrary to the common claim that renewables require expensive storage systems.

He then presented data showing that the UK has recently achieved similar trends in the growth of PV and onshore wind as Germany did in the early years of its renewable energy

growth, and how Britain is ahead of Germany in the growth of offshore wind. If the currently proposed cuts in subsidies are reversed, and the expansion of biogas energy is speeded up, then the wind and PV components of an all-renewable electricity supply are achievable in the UK soon after 2020. Furthermore, the average wholesale price could fall to zero, rather than rise to double the current price, which is the level of subsidy agreed by the government for the planned Hinkley Point C (HPC) nuclear power station. Keith added that the incentives could be paid for through taxation rather than from the current levy on bills, making it fairer for those on a low income, and that all fossil fuel subsidies should be diverted to renewables. Most of this transition, Keith argued, could be achieved by the next election, and then there would be no need for HPC, thus saving the British public a fortune in the longer term!

*The 20% solution: look up, wise up, cheer up*

The second speaker was Dr Laurence Matthews from Cap and Share UK, and co-author of the book, *Framespotting*.

*Look up:* Laurence argued that 'framing' can prevent us from seeing the bigger picture. Climate change discussions are framed in terms of emissions, so we forget to address the root cause: fossil fuels. Using a sprinkler analogy, he suggested you can save water by trying to block up the holes (i.e. reducing carbon emissions) or turning the tap off (i.e. not extracting fossil fuels). The latter, he argued, is likely to be more effective than the former.

The other key part of the UN climate negotiations involves developing nations pushing for financial assistance to help them reduce emissions and adapt, and wealthy nations being reluctant to pay. Framing everything in terms of 'nations' is a stumbling block.

Both these factors mean the negotiations are making very limited progress. Instead, Laurence suggested a Cap and Share system. The UN would calculate a 'safe' global carbon budget, and would run an auction of extraction permits bid for by fossil fuel companies. The UN would then distribute the money raised equally across the globe to each adult. The cost of fossil fuels would thus increase, but lower users would see a net financial benefit, providing an in-built transfer of money from high to low income groups.

*Wise up:* Laurence argued that to tackle climate change we need to be politically and psychologically savvy. For example, companies can be persuaded to leave most fossil fuels in the ground by a range of political measures including legislation and consumer pressure (e.g. 'climate safe' labelling, similar to that for 'fair trade', where fossil fuels extracted under the global cap are so labelled).

*Cheer up:* If we look up and wise up, Laurence suggested that we can cheer up! We must frame strong climate action as the sensible and positive choice, and an insurance policy for the future.

### ***Climate change and military technology***

The second plenary session focussed on the ways in which military technologies can change the climate.

### ***Nuclear weapons and climate catastrophe***

The third speaker was Dr Philip Webber, Chair of SGR.

Phil began by describing climate modelling carried out in 1983 which indicated that the detonation of 1,000 Hiroshima-sized nuclear warheads would inject enough particles into the upper atmosphere to severely restrict the sunlight reaching ground level, resulting in darkness and rapid, large surface temperature drops.

The research was updated in 2007 and 2014, using the latest climate models. The findings of these studies showed that the 'nuclear winter' would last significantly longer than previously thought putting considerable pressure on global food supplies, and likely triggering a global 'nuclear famine'.

The recent studies also modelled the consequences of a regional conflict (e.g. India-Pakistan) using 100 Hiroshima-sized weapons. (By comparison, a UK Trident submarine's payload is equivalent to about 320 Hiroshima's). In that scenario, 20 million people would be killed by the blast, fires, radiation, etc. Many cities would be abandoned indefinitely. There would also be a decade of cooling in key agricultural areas and severe drought affecting grain harvests.

Hence, Phil argued that the current nuclear arsenals risk massive climate impacts, and he also stressed the serious possibility of accidental launches. We know of numerous close calls during the last few decades, most of which have been averted by human judgement – e.g. people acting against orders. Hacking of warning and launch control systems also presents a more recent, but very real, risk. A former US commander of nuclear forces is calling for the 1,800 US and Russian weapons currently on 'high alert' to be taken off this status to reduce this risk. Phil suggested that we've been lucky to avoid accidental nuclear disaster for 70 years, but asked how long our luck would last.

He also outlined a proposal by over 120 nations, currently under discussion within the UN, for a new treaty to ban nuclear weapons alongside other weapons of mass destruction. Phil suggested this could also be raised in Paris.

### ***Demilitarisation for deep decarbonisation***

The final speaker was Tamara Lorincz, International Peace Bureau, who provided a pre-recorded presentation, so she would save the carbon that would have been emitted if she had flown over to the conference from Canada! She discussed the need for demilitarisation to help tackle climate change.

She began by summarising the need for major emissions reduction as demonstrated by UN bodies such as the Intergovernmental Panel on Climate Change (IPCC) and the Deep Decarbonisation Pathways Project. However, decarbonisation plans generally exclude military emissions, despite their being major consumers of fossil fuels. For example, the US Dept. of Defense (DoD) is the country's largest institutional oil consumer. Tamara looked at how military emissions are accounted for in national greenhouse gas inventories (based on IPCC guidelines), and found that reporting remains incomplete and opaque due to confidentiality agreements. Reducing carbon emissions is not a priority for the military. For example, the DoD projects a continued increase in its use of petroleum products over the next two decades.

It is estimated that \$1 trillion/year for 40 years is needed to decarbonise the global economy, and \$100 billion/year is needed for developing countries to help them adapt to climate change. But the wealthy nations aren't pledging adequate funds. Annual global military spending is currently estimated to total \$1.7 trillion. The US spends \$610 billion of this – more than all other top 15 military spenders put together – and, furthermore, the Government Accountability Office says it's at high risk of fraud, waste and financial abuse. Despite all this, a formal submission to the UN proposing that military spending be re-allocated to social and environmental priorities was ignored.

In the UK, the military also continues to receive a large budget, buying very expensive weapons systems such as the new F-35 strike aircraft, while spending on tackling climate change is much less.

Tamara stressed the need for disarmament alongside climate change mitigation and adaptation. She pointed to the report, 'Arms to Renewables', which shows how a transition to a greener and more peaceful economy is possible.

During the discussion following the presentation, Phil Webber pointed out that SGR is one of the only organisations to have researched R&D spending on the military compared to that on tackling climate change and other security threats in its 'Offensive Insecurity' report.

### ***Poster Sessions***

Eight posters were presented at the conference, covering issues such as ocean acidification, communication of climate change, and climate change and war.

### ***SGR's Annual General Meeting***

The event also included SGR's AGM. The annual report and accounts were presented, and the National Coordinating Committee elected, with the session concluding with discussion of current and planned activities.

Powerpoint presentations, poster abstracts, photos and other materials from the conference can be downloaded from:

<http://www.sgr.org.uk/events/messages-paris-conference-forgotten-dimensions-climate-change>