

The inconvenient truth of a nuclear free utopia

Since 11 March 2011, when the nuclear problems started cascading from the earthquake and the tsunami in Japan's Fukushima prefecture, people are understandably concerned about the possible direct and indirect impacts, comprising the gravity of loss of lives, economic costs, and environmental and ecological consequences. The memories of Three Mile Island and Chernobyl flash back, reigniting an outburst of global anti-nuclear sentiment. Shortly after Fukushima, Germany and China announced that they would review the safety of their nuclear power facilities, both existing and planned. More recently, nudged by a potent green lobby, Germany has announced their intention to shut all nuclear facilities by 2022.

The very fact that nuclear power has an instrumental role in combating climate change has, nevertheless, been clouded if not undermined by such anti-nuclear sentiment, especially fears of a worst case scenario in the immediate world of 24/7 news. As Sir Nicholas Stern highlighted in his Stern Review in 2006, the world cannot afford to wait to tackle climate change. The longer we procrastinate, the greater it will cost. Facing the stark truth that climate change – a globally compelling challenge – is already upon us, we have to act now.

Currently, the world's electricity generation profile is approximately 42% by coal, 22% by natural gas, and 13% by nuclear power. In the US, the world's largest producer of nuclear power, over a fifth of US' total electricity output in 2008 was produced by nuclear power – which was more than one-third of the worldwide nuclear generation of electricity, with the rest generated by coal-fired plant (49%) natural gas (22%), and hydroelectric (6%). Coal and nuclear power supply provide price stability; however, the rising demand for natural gas and the vagaries of international fossil fuel markets will no doubt push up international natural gas prices, thereafter inflating electricity bills for households and consumers.

So far man's endeavours have not found the perfect fuel that is both cheap and carbon free. Renewable energy is sound in principle with a promising future, but it is the stark truth that wind does not always blow; the sun does not always shine; hydroelectric power relies on increasingly erratic rain patterns, and that conventional installed electricity generating capacity must be in place for these times. Although renewable energy is becoming more and more affordable, it is simply still not the immediate, 'ready to go', solution, nor is it ready at the scale of supply needed, to replace dominant coal-fired power to respond to the ongoing and urgent climate change challenge.

The consciousness of demand side management and enhanced energy efficiency must be a key element in the combined global armory to combat the climate change. But like any social ethos and morality, they will take time, if not much time, to cultivate and flourish. With rising oil and gas prices, it is heartening to see that energy efficiency has become a key item on the political agenda of many governments, including a power-hungry China. Energy savings' targets have been neatly set but, objectively, they will not yield the scale of energy savings required to replace any one of today's non-renewable fuel sources today, or tomorrow.

The Fukushima incident has provided huge insight and intelligence from which we must learn by heart as we did with the last year's Gulf of Mexico oil spill. However, in the decades after the Three Mile Island and Chernobyl, we did not see the extinction of nuclear power but the development of better and safer science and technology for nuclear power. After Fukushima, we shall fare and progress in the same direction with our concerns and worries being addressed head-on. Thus, as unpalatable as it may seem in a post-Fukushima global landscape and despite Germany's recent knee jerk about turn, nuclear power is still the only immediate climate-friendly option of the required scale, that is relatively quick to build, cheap and reliable. Governments around the world must learn quickly from Japan's still unraveling troubles and make nuclear power completely future safe, possibly not locating or even removing existing nuclear capacity in tectonic, fault prone or otherwise risky areas.

In the short to medium term, governments have no choice but continue to advance nuclear power as the required immediate response to climate change until the fruits of demand side management and alternative, low-to-zero carbon fuels can be found at the scale required to fill coal's retirement. However, in today's opinion poll obsessed world and the escalating global anti-nuclear sentiment, any government that openly exhibits determination in nuclear expansion will find itself acutely unpopular. To be ephemerally unpopular today or to shy away from the only right-sized solution for combating climate change, is the question. A nuclear energy free world is a utopia worth pursuing, but a utopia cannot be built on a planet that does not survive today's escalating challenges of climate change.

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