

SOLAR REVOLUTION



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Environmental stability is an essential human need and right. It flows from our commitment to ensuring a sustainable quality of life and human dignity, emphasising our connectedness with all living beings, and our responsibility to our only planet, the Earth.

Yet, as Dennis Meadows tells us in his *Thirty Years Update of Limits to Growth*, humanity is now overburdening the carrying capacity of Mother Earth by a factor of 1.2. Furthermore 85 per cent of the consumption and depletion of natural capital is caused by the 'rich minority', 20 per cent of the world population.

At the same time, as the EastWest Institute and the International Task Force on Preventive Diplomacy remind us: "*The Foreign Policy 2007 Failed State Index* reports that weak and failing states are often both the result of conflict and the cause of fresh conflict ... 'breeding grounds for terrorism, organised crime, weapons proliferation, humanitarian emergencies, environmental degradation and political extremism'. At the same time, new threats, such as competition over land and water resources arising from population pressures and aggravated by climate change, have emerged."



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Pessimists further assert that – even if the UN Millennium Development Goals were met – the world in 2015 would still have 900 million people who have to walk more than a mile a day to get drinking water and 1.6 billion with no sanitation facilities – while in 2020, more than two billion people would still live in urban slums.

How can we accept a situation where 20 per cent of the world's population produces 85 per cent of its environmental degradation? As the capacity of the natural world to absorb carbon dioxide diminishes, the problems created by growing energy use can only increase exponentially. We have no choice but to concentrate our abilities on alleviating the suffering of humanity and the environment.

Total worldwide energy use is now 8 billion tons of oil-equivalent per year. This might increase to 40 billion tons by the year 2060. Thereafter, known deposits would only be adequate for the next 80-100 years depending on the speed at which consumerist development steams ahead.

The harmful impact of climate extremes on human livelihoods, combined with heightened competition for scarce resources, has triggered disputes over territory, food and water supplies – and over social and cultural traditions. My region, West Asia-North Africa (WANA), is overwhelmed with conflicts and disputes, and no political mechanisms for conflict resolution or prevention exist. The area in which these disputes take place covers the northwest corner of Africa, southeast to the Congo and the Sudan, the Arabian Sea and then north to the top of the energy ellipse that contains 70 per cent of the world's oil and 40 per cent of its gas.

Supra-national cooperation in joint water and energy projects could create renewable energy to power the world's growing population and provide fresh water from desalination without harming the environment. The DESERTEC concept examines creating secure, clean, and affordable power from the largest but least-tapped source of energy on earth, solar radiation in deserts. It could be put into service for energy, water and climate security for Europe and the WANA region through pursuing solar cooperation between the

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world's technology belt and its sun belt to fight climate change, energy shortage and water scarcity.

Using solar energy – or any other form of renewable energy – should be achieved in an environmentally compatible way. Here the deserts of the earth can play a key role. Day by day they receive about 700 times more

energy from the sun than humankind consumes by burning fossil fuels. They have the best conditions for solar radiation and would experience the least impact from deploying collectors to harness it. Here clean power can be sustainably produced by solar thermal power plants at any volume of conceivable demand. It can then be transmitted by high voltage direct current lines to more than 90 per cent of the world's population. This gives our deserts a new role. Together with the many other forms of accessible renewable energy, they would enable us to replace fossil fuels and so end the ongoing destruction of our natural living conditions.

Solar power from deserts – through cooperation between the sun and technological belts – will be cheaper than power produced from fossil fuels, especially if these are charged with their unpaid environmental costs. It can provide sufficient sustainable electricity to meet the demand of fast growing populations in the WANA region, and deliver energy for the sea water desalination required to avoid a fresh-water crisis. It can stimulate industrialisation and economic development by becoming a long-term export product, and promote energy and water security.

Significantly, projects like DESERTEC can also open a new chapter in relations between the people of the European Union and WANA. Their governments must establish adequate political, legal and financial frameworks to enable new forms of cooperation and investment. Constructing new concentrating solar thermal power plants has already begun already in Spain and in the USA. In the WANA region, initial projects are being developed in Algeria, Egypt and Morocco and are planned in Jordan, Libya, Tunisia, and United Arab Emirates. Algeria and Morocco have already brought in feed-in tariffs for clean power.

Providing people with practical means of combating climate change should be associated with giving them hope for a better future. This can be done worldwide by achieving fundamental human rights and empowering the silent majority – the poor and the vulnerable. Their well-being and rights – and the carrying capacity of our planet – must be given particular attention through a focus on human security, to avoid stalling and reversing the turning wheel of human development. Collective efforts – engaging states, enterprises, civil society groups and individuals – are essential in developing a common global action plan to ensure world stability.

The world's consumers and producers of prosperity are the same people. They are at the receiving end of the effects of historic greenhouse gas emissions, which are hurting the rich a little and the poor a lot! The early developed world – the USA, Canada, Europe and Japan – has an average per capita GNP of \$34,000 a year: in the remaining, later developing world it is \$2,200. Such a prosperity gap is a time bomb, but might provide a way forward. Would it not be a strategy for human security and global developmental justice if the early developed world spent a small fraction of its tremendous income advantage to establish an inexhaustible and sufficient energy source for everyone based on renewables? Just one thousandth of this income advantage, over \$30,000 billion a year, would be more than sufficient to launch the DESERTEC Concept in the most suitable desert regions around the world, within one or two decades – thus overcoming global energy inequity and social injustice and ending the increasing impetus of climate change.

3.6 million

Cost in US\$ for offsetting all the greenhouse gas emissions (estimated at 300,000 tonnes), which will be produced by the Vancouver 2010 Games, including those from airplanes bringing thousands of athletes and spectators to the western Canadian city
– Vancouver Organizing Committee

501

Number of UN-backed clean energy projects in China as part of the Clean Development Mechanism, as of 31 March 2009. China has the highest number of such projects, followed by India (with 411) and Brazil (with 156). Globally, the United Nations has approved 1,539 projects around the world
– Reuters

267

Worth in billions of pounds of the so called eco-barons – tycoons who have made either serious investments in green technology and businesses or hefty financial commitments to environmental causes
– Business Times Online

11

Amount in billions of dollars being set aside for “smart grid” investments under President Obama’s stimulus package
– NY Times, Green Inc.

8

Percentage by which airlines will reduce their carbon emissions this year. About 6 per cent of the forecast carbon cut will come as a result of carriers flying fewer planes in 2009, and a further 1.8 per cent reflects steps to improve energy efficiency
– International Air Transport Association (IATA)

40

Percentage of the world’s electricity that renewable energy technologies such as wind and solar power could supply by 2050
– Helsinki University of Technology

51.4

Billions of dollars in worldwide revenue created by wind power in 2008
– Business Green

50

Investment in billion of pounds needed to make Saharan thermal solar power an attractive and viable prospect for private investors
– International Institute for Applied Systems Analysis

4,000

Number of cities around the world that switched off their lights for Earth Hour – a global call to action on climate change
– WWF