



**S.A.P.I.E.N.S**

Surveys and Perspectives Integrating Environment and Society

**4.2 | 2011**  
**Vol.4 / n°2**

---

## Environment and Economy: joined at the hip or just strange bedfellows?

**David Runnalls**

Gaëll Mainguy (éd.)



### Édition électronique

URL : <http://journals.openedition.org/sapiens/1150>

ISSN : 1993-3819

### Éditeur

Institut Veolia

### Référence électronique

David Runnalls, « Environment and Economy: joined at the hip or just strange bedfellows? », *S.A.P.I.E.N.S* [En ligne], 4.2 | 2011, mis en ligne le 01 juin 2011, consulté le 23 octobre 2020. URL : <http://journals.openedition.org/sapiens/1150>

---

Licence Creative Commons

## Views

# Environment and Economy: joined at the hip or just strange bedfellows

David Runnalls

Distinguished Fellow and Former President, International Institute for Sustainable Development (IISD)

Distinguished Fellow, Centre for International Governance Innovation

Senior Fellow, Sustainable Prosperity

Correspondence to: drunnalls@uottawa.ca

In the aftermath of the financial crisis, we have seen a flurry of new books and publications on the need for reform of the international financial system to make it more resilient, transparent and less subject to the “too big to fail” shocks which brought us to the brink of economic ruin. Basel 2 and the increased role of the G-20 come within this ambit. The crack in the armour of economic infallibility has created policy space for a number of other discussions for fundamental reform of the financial system so that it can contribute to sustainability. Finally, it seems that at least some of us are recognizing the need for the integration of the environment into economic thinking. The recent United Nations Environment Programme (UNEP) green economy report (UNEP 2011), the Organisation for Economic Co-operation and Development (OECD)’s interim green growth report (OECD 2010) and the EU low carbon roadmap (European Commission 2011) are the prime examples of this kind of thinking which is possible to trace off again, on again, back to the 1970s.

I have been present at most of the multilateral environmental meetings since I carried Maurice Strong’s bags at the inaugural UN Conference on the Human Environment in Stockholm in 1972. Stockholm made environment and development a legitimate subject for the international agenda. The Conference was initially proposed by Sweden, supported by the other OECD countries. The first great wave of environmental awakening was in full force, spurred by the writings of Rachel Carson, Paul Ehrlich, Garret Harden and others. European governments were beginning to get tough on pollution. Early on in the preparations, it was clear that the majority of developing countries had little interest in the conference. In fact, many saw it as a cat’s-paw for protectionists in the North. New environmental regulations would be used as excuses for trade restrictions on the import of their products to northern markets. Foreign assistance would increasingly be directed away from the business of development toward environmental protection. And many developing countries felt strongly that the environment was a problem for the rich. This hostility led the Secretary-General to appoint Maurice Strong, long known as a friend of the Third World, as Secretary-General of the conference. Strong changed the whole dynamic of the conference. Led by Strong, the conference served to open a whole series of debates, many of which continue to this day. For example, Strong moved decisively to get the developing countries on side and participating through a series of meetings, books and publications highlighting the fact that their environmental problems were just as critical as the pollution problems faced by the OECD countries, who had lobbied for the holding of the conference. In the end, Indian Prime Minister Gandhi was perhaps the most effective speaker in Stockholm in an eloquent address relating poverty and environment and calling for the integration of the environment into economic development policy.

He also moved to open up the proceedings to active participation by non-governmental organizations (NGOs). Contrary to the previous UN practice where NGOs had to go through a very political vetting process to participate in a conference, Maurice ordered his staff to register any group that had a plausible interest in the environment. Through the NGOs and the many media

who attended, he developed a direct relationship with citizens. This made both the governments and the UN bureaucrats very uneasy. In the words of the day, Stockholm became a “happening”, attended by more media than were present at the Munich Olympics later that year.

When the Rio Earth Summit was in the planning twenty years later, I looked over the agenda to see what was present that had not been discussed at Stockholm and discovered only one—ozone destroying chemicals. Everything else that concerns the contemporary environmental community, including climate change, was already on the agenda. There were lively debates at both the political conference and on the side about the issues raised by the Club of Rome and by writers such as Barry Commoner and Paul Ehrlich. The Club of Rome had recently published *Limits to Growth* (Meadows *et al.* 1972) which was depicted by its critics as a prediction of resource scarcity and rising resource prices, contrary to the statements of its authors that it was merely a view of future possibilities. So both natural limits and the need to change the way in which we measure growth and productivity were already being discussed.

The next event to deal with resource scarcities and environmental pricing was a seminal OECD Conference on Economics and the Environment organised in the early 1980s by Jim MacNeill as head of the OECD Environment division. The enthusiasm of the Stockholm meeting had petered out and jobs and growth were the only issues given a hearing around the cabinet table. MacNeill realised that Environment Ministers would play only a handmaiden role in these debates until supported by mainstream economics. Major economists participated. Many of them dealt with these issues for the first time. And it gave Environment Ministers more legitimacy around the cabinet table when major economic issues were discussed and helped to frame the argument that environmental protection created jobs and market opportunities and was not a job killer.

Ten years after Stockholm, there had been much apparent progress in wealthy countries. Virtually all OECD countries had established Environment Ministries and had passed their pioneering legislation in the field. And there were signs that the environment in some countries had even begun to improve. But it became apparent that little had changed in the developing world and the situation in some countries was becoming catastrophic. This led to the creation of the World Commission on Environment and Development (the Brundtland Commission), which reported in 1987 (WCED 1987).

Several other world commissions on various topics reported during that decade. All were characterised by North/South divisions and real bitterness. Unanimity was impossible to find. Yet the Brundtland Commission was able to produce a unanimous report. The report became a popular document in many languages. Its main insight was one that is still depressingly familiar to our ears: the world’s critical ecosystems were

under severe stress and some had passed vital thresholds and might never recover. Climate change and biodiversity loss were potentially catastrophic and immediate action needed to be taken. This was in 1987. The earth’s environmental system and its economic systems were now so interdependent that decisions taken in one sphere and ignorant of the other were bound for failure.

MacNeill, who became the principle author of the Brundtland Report, always felt that if you change the way you make decisions, you will change the decisions you make. Under sustainable development, environment had to be integrated into economic decision making through the use of market mechanisms, and through the leadership of Heads of Governments and CEOs in the private sector. Environment and Economics were now joined at the hip. In the words of Ed Woolard, the CEO of Dupont at the time, “CEO means Chief Environmental Officer”.

Brundtland also got the message about resource efficiency. There was an emphasis throughout the report on reducing physical inputs, particularly through energy efficiency. Biodiversity was a highlight, along with food security and forests.

The Brundtland Report led eventually to the Earth Summit in Rio. By 1992, the UN had exhausted the franchise for two week conferences attended by bureaucrats and diplomats. Ever conscious of his access directly to the public through the media, Strong changed the dynamic by inviting heads of state, along with their Ministers of the Environment, and emphasizing the need to sign the two Rio conventions, on biodiversity and on climate change. Over 100 attended. And a bargain was struck between North and South, with the rich countries gaining some acceptance of their agenda of climate change and biodiversity loss, deforestation and the destruction of migratory fish stocks. In exchange, developing countries received assurances of concessions on their agenda of increased development aid, better access to northern markets for their goods, and debt relief. This was the so-called “Rio bargain” between the environmental concerns of the North and the economic demands of developing countries.

Rio also marked a period of more extensive participation by the private sector at the highest levels. The Business Council on Sustainable Development, created by the Swiss billionaire, Stephan Schmidheiny, brought together more than 100 CEOs from the world’s most prominent companies. Their book, *Changing Course* (Schmidheiny *et al.* 1992), was the first elaboration of the concept of eco-efficiency and the members of WBCSD met at Rio to push their agenda with the governments. I also fondly remember long conversations with Professor von Weizsacker, the founder of the Wuppertal Institute, about the ideas which became Factor 10<sup>1</sup>. Civil society was much in evidence and influential. CEOs (or at least some CEOs) were prepared to give much more prominence to environmental concerns in their businesses not just to appease the greens or their children, but because it made good financial sense.

1 <http://www.faktor10.at/> Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yTpih6h>].

Then the whole process seems to have run out of steam. The Johannesburg Summit in 2002 was a conference without a focus. Not much was achieved in the governmental negotiations which were long and tedious. But the civil society events were another matter. Leaders of civil society, scientists, engineers, environmentalists and corporate magnates were there in large numbers with a whole range of exciting solutions for the problems of environmental deterioration and underdevelopment. The private sector remained engaged and there was a good deal of talk about eco-efficiency as a concept at the core of a successful business and not just a sop to the greens. The Business Day provided perhaps the most interesting part of the conference.

Much of the interest manifest at Rio had shifted to the climate change negotiations, where the economic significance had always been clear. As Brundtland pointed out, climate change is not principally an environmental problem. It is a symptom of a dysfunctional energy economy. And energy lies at the heart of the modern economy.

After the Earth Summit, negotiations proceeded slowly until the development of the Kyoto Protocol in 1997. The Kyoto Protocol imposed real obligations on Annex I countries with mixed results. The United States opted out. Canada opted in—and then proceeded to do nothing to meet its obligations. Europe began an important emissions trading scheme that placed a value on carbon and made it into a tradable commodity.

But the roof fell in on Copenhagen and while the recent conference in Cancun may have stopped the free fall, the process is still in serious trouble. What is the UN reaction to all of this? They are going to have another conference. The Rio +20 event will take place next June. The chances are that this will be yet another conference without a purpose. But there is an opportunity that something interesting will happen in the green/low carbon economy debate. In preparation for Rio, the UNEP has just released its Green Economy Report (UNEP 2011). And the OECD has published its own Interim Green Growth Strategy (OECD 2010). Both of these are robust, rigorous documents produced under the direction of respected economists. Green or low carbon growth is now the rage with academic conferences and research papers galore. There are plenty of signs that a new, lower carbon economy is emerging without any help from the international political community. It is interesting to see how leadership in this area is shifting to the BRIC countries in the same way that mainstream economic power is shifting.

The world's first commercially available plug-in hybrid car reached the market in December 2008 in China. China's BYD (Build Your Dreams) had beaten its rivals to market, although with a limited number of cars available. None other than Warren Buffett, perhaps the world's most savvy investor, has invested heavily in the venture.

China is already host to the largest solar energy company in the world and is aggressively pursuing ambitious renewable energy targets. It is working on six wind farm mega-complexes with a total generating capacity of 105,000 megawatts. It is actively developing a national low carbon energy strategy as part of the next five year plan. And the plan has very ambitious targets for investing heavily in renewables, and increasing energy and raw material efficiency in the transition to a lower carbon economy. The Chinese would like to think that they can double their GDP between now and 2020 without increases in raw material consumption or pollution and have budgeted very large sums to help them do so. India is also aggressively pursuing renewable targets and Brazil dominates the market for sensibly produced ethanol (unlike the absurd corn ethanol schemes of the United States) and is rapidly expanding its production.

And despite America's apparent unwillingness to do anything serious about climate change, the renewable industry in the United States is going full steam ahead. By October 2010, the current installed wind power capacity was 36,700 megawatts<sup>2</sup>. Texas alone has 9,700 megawatts of wind generating capacity in operation with another 1,000 megawatts under construction, and a huge amount in development which would give it over 50,000 megawatts of wind generating capacity if everything comes to pass. This would more than satisfy the residential needs of the state's 24 million people. And this is in addition to the many smaller wind farms already in operation and under construction.

North Dakota, a state not very far from IISD's headquarters in Winnipeg, has plans to supply the Chicago market with 6000 MW of electricity generated from wind. In the United States as a whole, 8,500 MW of wind power capacity was added in 2008, while that from coal increased by only 1,400 megawatts. These figures are perhaps not very impressive from a European standpoint, but the U.S. is a late starter in this field.

And then there is energy efficiency, which is really taking off as a business. North America has a real advantage in energy efficiency. Starting from such a low base enormous gains can be made with little innovation or even imagination. Take Amory Lovins and the negawatt<sup>3</sup> as an example. His Rocky Mountain Institute calculates that if the 40 least efficient states were to achieve the electrical efficiency of the ten most efficient ones, national electricity use would be cut by one third (Mims *et al.* 2009). This would allow the equivalent of 62 percent of all U.S. coal-fired power plants to be closed. But even the most efficient states have a substantial potential for further reducing electricity use and, indeed, are planning to keep cutting carbon emissions and saving money. Similar efforts in Europe have been underway for years.

Just one last comment on the emergence of the new lower carbon economy comes from a recent article from the Washington Post, commenting on the new money in U.S. politics:

<sup>2</sup> For an overview of wind capacity in the USA, see: [http://www.windpoweringamerica.gov/wind\\_installed\\_capacity.asp](http://www.windpoweringamerica.gov/wind_installed_capacity.asp) Accessed: 2011-05-06.

<sup>3</sup> There are many studies which conclude that the most cost efficient way of reducing emissions is through energy efficiency improvements and conservation, thus replacing the term megawatt as a unit of energy production with the word negawatt of reducing energy use.

"On one side are business leaders and shareholders who derive their wealth from resource extraction, fossil-fuel-based power generation and energy-intensive manufacturing—they are the 'dirty rich'. On the other are business leaders who run knowledge or service companies that generate very little pollution—the 'clean rich'. "The dirty rich are dying off, and the clean rich are coming of age. (...) America is witnessing the twilight of the dirty rich and the inexorable move of economic power to the clean rich. What's more, environmental values are spreading fast through affluent America, with more super-wealthy individuals putting their money behind green causes and more upscale voters expecting government action to protect the planet. Climate legislation may be dead for now, but if big money really talks in America, the long-term prospects for tougher environmental rules would seem quite good. It is hard to understate how dramatically the sources of business wealth have shifted in the past half-century. Of the top 20 companies on the Fortune 500 list in 1960, 16 were engaged in heavy industry, such as U.S. Steel and DuPont, or resource extraction, such as Texaco and Mobil. This year's list includes just six such companies in the top 20. (...) Meanwhile, the dirty rich are fading from the Forbes 400 list of the wealthiest individuals. When the list was first published in 1982, 38 percent of its members had made their fortunes in oil and manufacturing, and 12 percent in finance and technology. By 2006, those ratios had nearly flipped: 36 percent of the richest Americans made their wealth from finance and tech, while 17 percent earned it from manufacturing and oil.

"The dirty-rich billionaires on the Forbes list are mostly on the older side. Among recent newcomers to the list, few have been from dirty industries. More typical is Facebook founder Mark Zuckerberg, who made the list in 2008 at age 24. (...) Even Texas doesn't have as many dirty rich as it used to. Fewer than half of the state's billionaires made their money in oil or energy, a major departure from earlier patterns. The two wealthiest Texans today are not oilmen; they are Alice Walton, an heir to the Wal-Mart fortune, followed by Michael Dell, a computer entrepreneur. Dell doesn't live in either of the traditional oil-money cities, Houston and Dallas; he resides in Austin, which has grown more influential in the state's cultural and political life as it has become home to numerous high-tech entrepreneurs. Dallas still has plenty of conservative oil money, but the city's economy is now powered by tech, finance and services. If the primetime soap opera 'Dallas' were remade today J.R. Ewing would probably be a telecom magnate." (Callahan 2010)

The new economy seems to be emerging rapidly. And some of the transitions can happen very quickly. Lester Brown reminds us just how quickly:

"Recent trends in the adoption of mobile phones and personal computers give a sense of how quickly new technologies can spread. Once cumulative mobile phone sales reached 1 million units in 1986, the stage was set for explosive growth, and the number of cell phone subscribers doubled in each of the next three years. Over the next 12 years the number doubled every two years. By 2001 there were 961 million cell phones—nearly a 1,000-fold increase in just 15 years. And now there are more than 4 billion cell phone subscribers worldwide. Sales of personal computers followed a similar trajectory. In 1980 roughly a million were sold, but by 2008 the figure was an estimated 270 million—a 270-fold jump in 28 years. We are now seeing similar growth figures for renewable energy technologies. Installations of solar cells are doubling every two years, and the annual growth in wind generating capacity is not far behind. Just as the communications and information economies have changed beyond recognition over the past two decades, so too will the energy economy over the next decade." (Brown 2009)

So can we just sit back and watch it happen? Obviously not. While there are plenty of green shoots about, the climate scientists tell us that we need to achieve a substantial and unprecedented transition to a low carbon economy within the next 20 years. And the new economy has yet to even touch the world's poor, nor to become a mainstream trend.

Is there any hope for the international system? Yes, but only if it is pressured to reform and to take the challenge as seriously as we all know it needs to do. Rio+20 is an extremely thin reed and I have few hopes for it. But if the conference itself or at least the side events can be turned into a showcase for the low carbon economy, we might make a breakthrough.

The Secretary-General has established a High Level Panel on Climate Change and Sustainable Development, chaired by President Zuma of South Africa and by the Finnish President. Among its members are Kevin Rudd, former Prime Minister of Australia; Hatoyama, former Prime Minister of Japan; the former Prime Minister of South Korea; Jairam Ramesh, the Indian Environment Minister; and Connie Hedegaard, the EU Climate Commissioner. I am acting as the Sherpa to Jim Balsillie, who is the only private sector representative on the Panel and who is determined to get new ideas on the table. As co-CEO of the company that created the Blackberry, he wants to make the panel far more open than its predecessors through the development and use of novel electronic consultation methods. He is also in favour of the expanded use of market based incentives and resource pricing which induces efficiency. He is also in the forefront of thinking about the need for corporations to be publicly accountable for their use of natural capital and about the need to reform the incentives in the capital markets so that investments are more likely to be in sustainable activities. The panel is just beginning its

work. And with a lot of hard work and a bit of luck, it just might do what it aspires to do: update the Brundtland Report and redefine sustainable development in the context of a green economy.

UNEP's role in the new process is unclear. In the run up to Rio, UNEP was sidelined by UN rivalries, largely of its own making. It is also not central to the preparations for Rio+20. And this time it is not UNEP's fault. The internecine rivalries between UNEP and the main UN bureaucracy have not helped the process of conference preparation. But UNEP has produced a real breakthrough with its Green Economy Report. The process is being led by Pavan Sukhdev, formerly of Deutsche Bank. The report outlines a number of critical areas to address: food security, biodiversity loss, sustainable fisheries management. But to me, two are most critical:

- Can we reform the conventional financial system so that it could provide the financing for the green economy?
- Can we create a more level playing field for resource pricing through the wholesale reform of perverse subsidies?

The first relates to the existing financial system. Can the system be sufficiently reformed so that it is not only more stable, but will also respond to the kinds of signals necessary to move large investment pools away from things like coal-fired generating facilities to wind and solar? While there is a good deal of venture capital pouring into the green economy, it is far too little for the fundamental changes needed. We need to persuade the large pools of capital to put their bets firmly in the low carbon economy camp.

### Stability of the financial system:

A Green Economy is not possible without a stable global financial system underpinned by open, accountable, transparent, and responsible capital markets. Financial system stability will depend upon accounting for the threats posed by "slow failures and creeping risks" (WEF 2010) such as climate change, resource depletion and economic exclusion, to balanced global economic and social development. The financial system needs to recognise such factors in its core processes and reward structures.

### Policy supportive of green markets:

A supportive policy environment will rebalance the risk-reward equation in favour of financial backing for the ideas, entrepreneurs, technologies, companies and emerging industries that will create a new Green Economic development path.

### Public private action:

Smart use of public finance to change the Green Economy risk reward dynamic will leverage the step change in financial flows for an early market-driven transition to a Green

Economy. The role of multilateral development banks, investment guarantee bodies, and public agencies to support early investment in break-through green technologies and to create new markets at scale will be critical in the early transition towards a global Green Economy. It will also be important to develop "blended" projects similar to those being adopted by the Clinton Global Initiative, which is looking to use public monies to reduce the risk levels in large scale Asian solar farms so that the majority of the funding can come from the private sector.

### The 21<sup>st</sup> Century's investment opportunity:

The investment opportunities presented by the transition to a Green Economy are unparalleled. The low carbon, resource efficient transformation of cities, industries, energy and transport systems, as well as the provision of finance and capital for those at the Base of the Pyramid, presents our capital markets and the global financial services sector with unprecedented challenges and opportunities.

The recession destroyed US\$ 28.8 trillion (McKinsey Global Institute 2009) in global wealth captured in equity and real estate values by mid-2009. During one week in October 2008 it is estimated that some 20% of the "value of global retirement assets" (Auhers 2010) were "wiped out." Such events, with serious systemic implications, raise a fundamental question of whether the current financial system can deliver a low carbon, resource efficient, inclusive Green Economy and, if not, what such a system should look like.

Importantly, new and complex questions about how future financial instability might be triggered and compounded by the myriad "slow failures and creeping risks", such as resource scarcity, climate change, threats to our biodiversity and ecosystems, the demographics of ageing populations, and the impact of chronic diseases have not been adequately explored by financial policy-makers or the finance and investment sectors. Such an exploration of financial stability and long-term systemic risks is only now just starting (IISD 2010). For obvious reasons, it is being led both by financial regulators and by the insurance companies, particularly those few, large re-insurance companies who are worried about long term risk. Both the Munich and Swiss RE have very active "skunk works" on these issues and both have invested substantial amounts of their own resources.

And we do have a bit of an experiment going on already. About US\$ 470 billion out of US\$ 3 trillion plus in public stimulus funds has been set aside for low carbon and environmental infrastructure investments. Both Korea and China have devoted substantial portions of their stimulus funds to green investment targets. Korea has gone even further, through the creation of the new Global Green Growth Institute, chaired by the former Prime Minister and Directed by a former senior official of the World Economic Forum.



The UNEP Report points out that our ability to understand how and to what extent these pools of capital are “greened” in coming decades will provide also a strong benchmark of the extent to which a Green Economy is becoming a reality.

- Global equity markets stood at US\$ 34 trillion in 2008, down from a peak of US\$ 62 trillion in 2007. Some of the losses experienced by equity markets in 2007-2008 were recouped as the markets rebounded in 2009. Bank deposits jumped US\$ 5 trillion (IISD 2010) from 2007 to 2008 to reach US\$ 61 trillion
- Public and private debt securities jumped from US\$ 77 trillion in 2007 to US\$ 83 trillion in 2008 highlighting the increased public sector borrowing in response to the financial crisis (IISD 2010)
- Trading activity on the over-the-Counter (OTC) markets reached US\$ 60 trillion annually before the crash, while turnover on the closely regulated, more transparent public market stood at just US\$ 5 trillion<sup>4</sup> by comparison.
- In 2008, the worldwide premium volume for life and non-life insurance business combined exceeded US\$ 4.2 trillion (Swiss Re, 2009) making insurance the largest industry in the global economy, while its global assets under management in 2007 stood at US\$ 19.2 trillion (International Financial Services London, 2008)
- Sovereign Wealth Funds are becoming increasingly important in the international financial system. Market estimates indicate a range from US\$ 2 trillion to nearly US\$ 3 trillion of assets under SWF management in 40 countries (IMF, 2008). International Monetary Fund projections show that SWF assets may increase two- or three-fold in the medium term. Other projections indicate bigger increases<sup>5</sup>
- In 2008, the global High Net Worth community, totalling some 8.6 million people, controlled US\$ 32.8 trillion (Merrill Lynch and Capgemini, 2009) in assets up from just over US\$ 22 trillion in 2000. The aggregated GDP of the world’s heavily indebted poor countries, some 40 countries with a population of 604 million people, is less than the wealth of the world’s 13 richest people combined<sup>6</sup>.

Work undertaken since 2003-4<sup>7</sup> by a whole range of institutions, exploring the fiduciary<sup>8</sup> implications as well as the financial materiality of a range of potential risks, some like climate change with systemic implications, is building a case that promotes the need for greater engagement by investors and financial intermediaries along the investment chain in order to understand the nature of these risks.

The recent economic crisis is proving somewhat therapeutic in the sense that conventional economics has had its vulnerability dented by the bank fiasco. This provides

some manoeuvring space by those who believe that sustainability requires some fundamental changes in the area of fiduciary responsibility, the reduction of “short-termism” in investments and changes in the incentive structures of the financial industry.

There has been a good deal of private sector work in this area over the past decade or so, as well as some seminal work by the UNEP Financial Initiative. This work suggests strongly that adoption and integration by mainstream financial and capital market actors of approaches based on sustainable finance and responsible investments may speed the greening of existing industry and will help to develop further the new green markets while also making the financial system itself more robust (IISD 2010). But these initiatives must be accommodated by public policy, and well-targeted public financing.

The Norwegian sovereign wealth fund is an example for others of how large pools of capital can be directed toward a low carbon economy. The Norwegian Pension Fund aims to assess how the challenges of climate change may affect the financial markets and how it ought to invest in light of the fund’s vulnerability to climate risks. The Norwegian Finance Ministry is in the process of establishing a new investment programme for the Fund which will focus on environmental investment opportunities, such as climate-friendly energy, improving energy efficiency, carbon capture and storage, water technology, and the management of waste and pollution. The investments will have clear financial objectives, as do the other investments of the Fund. They are looking at several possible investment opportunities, such as green bonds issued by the World Bank. It is also looking at equities and overweighting companies with a good environmental profile using an index where the weight ascribed to the companies is affected by environmental criteria. Many private pension funds are already operating on a similar basis, with screens developed for all or most of their investment opportunities. But the Norwegian example is interesting, both because of the size of the fund, and also its potential influence on other sovereign wealth funds. Norway has much more influence over the sovereigns of the gulf, for example, because its own fund is comparable, or even larger than many of the gulf funds.

The challenges that exist for the public-policy community to create a framework for financial services and investment that promotes and delivers a true Green Economy and those challenges that exist for the financial services and capital market sectors to play a role in the delivery of a Green Economy are obviously connected but have different characteristics. For the public policy community the challenges, primarily, are ones of size, speed and consistency:

4 “‘Dark pools of liquidity’ are crossing networks that provide liquidity that is not displayed on order books. This situation is highly advantageous for institutions that wish to trade very large numbers of shares without showing their hand”. (Quigley 2010).

5 Morgan Stanley Research 2007 projects US\$ 12 trillion in assets for SWF by 2015 while Standard Chartered projects US\$ 13.4 trillion worth of assets over the decade.

6 The Lex Column, The Financial Times, Saturday 13 March, 2010, drawn from the Forbes Rich Lists 2010.

7 Preparatory work for the report, “A legal framework for the integration of environmental, social and governance issues into institutional investment” published in October 2005 by UNEP Finance Initiative/ Freshfields Bruckhaus Deringer commenced in 2004.

8 *Fiduciary*: “An individual, corporation, or association holding assets for another party, often with the legal authority and duty to make decisions regarding financial matters on behalf of the other party” see: [www.investorwords.com/1932/fiduciary.html](http://www.investorwords.com/1932/fiduciary.html)

- Size is important here. It is estimated that some 85% of the investment and finance needed for the transition to a clean energy infrastructure will have to come from the private sector. The International Energy Agency (IEA) has projected a US\$ 1 trillion a year figure to finance on-going energy infrastructure needs of which US\$ 500 billion needs to be allocated to the creation of a clean energy infrastructure. One of the challenges here is how to utilise limited public funds to leverage the private sector resources needed. Copenhagen established such a fund, but after virtually no discussions with private financiers. But there are several discussions underway by governments, foundations and investor groups on how to use limited public funds to “buy down” the risks of major sustainability projects (such as large scale wind projects in India) so that private investors find such projects attractive from a commercial point of view. Once again, we are beginning to hear talk of possible new sources of international tax revenue through the so called Tobin tax on financial transactions or through taxes on international transport, such as air tickets or cargo borne by ships. Although these have made no headway in the past, it is possible that cash-starved governments may begin to look at them in a new light. Relatively small tax rates can yield very substantial revenues in this way
- Time is also important. We need to make progress on CO<sub>2</sub> emissions reductions of up to 35% by the year 2030. So we need to start now or the costs will spin out of control.

We need to create a policy framework which addresses the systemic failures revealed by the economic crisis and which provides incentives to mobilise the investment and finance needed to realise a Green Economy. Since October 2008 efforts have been underway by a broad group of international organizations, the Financial Stability Board (FSB) of the G20, the Basel Committee on Banking Supervision, the Financial Crisis Advisory Group (FCAG) and others, to evaluate and overhaul the governance and institutional structures around the modern financial system. But they have failed completely to even mention the importance of moving toward low carbon economies.

As the markets are remade, greater long-term consistency, stability and resilience will depend upon the reconfiguration of the financial system and also the degree to which long-term systemic risk considerations are integrated in the new financial system. It will also critically depend upon changing the incentives for fund managers so that longer term performance is rewarded at the expense of the short-termism that now dominates the markets.

In addition to the provisions of incentives for investors to act sustainably, we need to systematically remove those incentives which are going in exactly the other direction. In IISD, we have spent a number of years looking at subsidies. The existence of economically and environmentally perverse subsidies distorts the pricing system, often almost beyond belief.

Four years ago, we started the Global Subsidies Initiative, aimed at transparency and reform of the subsidies system. We began with an examination of the subsidies which underlie the biofuels industry in the OECD countries<sup>9</sup>. We found that these subsidies were substantial—at least 8 billion per year in the United States alone. The figure is greater now after the renewal and expansion of the corn ethanol system by the Obama administration. In Europe the figure was somewhat less, and seems to have fallen since to at least 3 billion euros per year. Not only are these subsidies market distorting, but they are also usually accompanied by mandates, e.g. by 2020, 20% of the motor fuel supply in country x must come from biofuels. Finally, the biofuels themselves are an expensive way to deal with climate change, one of the alleged purposes of the subsidy in the first place. We found that the cost of a ton of carbon avoided could be as much as US\$ 700 (Koplow 2006), way more than any other conceivable low carbon project. In some cases, if the ethanol refinery operated on electricity from a coal fired power plant, it was often a net contributor to climate change.

More recently, we have turned our attention to subsidies to the fossil fuel industry. These are even more difficult to quantify. While some countries are fairly forthcoming about their direct expenditures on subsidies to the oil and gas industry, there are a myriad of other subsidies available in the form of credits, low interest loans, infrastructure construction and others. So there are no comprehensive studies. Even so, we estimate the subsidies to fossil fuel producers, largely by energy producing countries at more than US\$ 100 billion per annum<sup>10</sup>.

Developing countries, on the other hand, prefer to hand out subsidies directly to consumers, usually under the guise that the poor are unable to afford such modern inputs as electricity or kerosene. Laudable as these sentiments might be, research after research paper has shown that the majority of these consumer subsidies end up in the hands of the middle and richer classes. And the drain on the public purse can be enormous. At one point, energy subsidies were consuming approximately a third of the entire Indonesian annual budget, nearly three times as much as the total expenditure on defence, health, education and social security combined (Ministry of Finance of Republic of Indonesia 2011).

The total cost of India's fuel subsidy is about US\$ 15 billion per year, although it is hard to measure total subsidy since the direct cost of subsidy (about US\$ 7 billion per year) is multiplied by the many indirect ways that fuels and energy services are subsidised, such as by providing farmers with power and irrigation services at low regulated prices.

Subsidies have so distorted energy markets that advocates of renewable energy and low carbon economies have climbed on the bandwagon and are seeking government subsidies for their infant industries. And we run the risk of subsidizing one

<sup>9</sup> <http://www.globalsubsidies.org/research/biofuel-subsidies> Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yToRTWiT>].

<sup>10</sup> “Global warming: ending fuel subsidies could cut greenhouse gas emissions 10%, says OECD.” OECD press release 06-09-2010... URL: [http://www.oecd.org/document/30/0,3343,en\\_2649\\_37465\\_45411294\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/30/0,3343,en_2649_37465_45411294_1_1_1_1,00.html). Accessed: 2011-04-23. [Archived by WebCite® at <http://www.webcitation.org/5y9rDcCHU>].



activity because it cannot compete with other activities that are already highly subsidised.

In these days of austerity and cutbacks, why not begin by reducing or eliminating needless government subsidies and levelling the playing field through reduced government expenditure? That is just what the G-20 is struggling with. At its summit in Pittsburgh in 2009, the United States, of all countries, introduced a proposal that requires all G-20 measures to report on their subsidies to the fossil fuel industry and to begin to progressively reduce them thereafter.

The IISD has been monitoring progress on the G-20 resolution (Lang 2011). Looking beyond its own membership, the G-20 has had wide-reaching influence in sparking action by other countries and organisations. Asia Pacific Economic Cooperation (APEC) undertook an almost identical commitment in November 2009, extending fossil-fuel subsidy reform to an additional twelve countries, and proposing to advance research in its energy working group. Add to this, a new set of countries forming the “Friends of Fossil-Fuel Subsidy Reform” group, including Denmark, New Zealand, Norway, Sweden and Switzerland, which plans to put pressure on the G-20 to achieve a transparent and ambitious outcome.

The G-20 process has also prompted inter-governmental organisations to focus on the issue. After providing a joint report for G-20 leaders in Toronto, the IEA is now dedicating two chapters of the *World Energy Outlook 2010* to energy subsidies, the OECD is advancing work on methodologies for calculating fossil-fuel subsidies, and the World Bank is undertaking research on the political economy and distributive effects of fossil-fuel subsidies.

### What has the G-20 done so far?

G-20 Leaders in Pittsburgh, September 2009, recognised that “inefficient fossil-fuel subsidies encourage wasteful consumption, distort markets, impede investment in clean energy sources and undermine efforts to deal with climate change” and committed to “rationalise and phase out over the medium term inefficient fossil-fuel subsidies that encourage wasteful consumption” (IEA *et al.* 2010).

They also acknowledged the challenges ahead, notably the need to prevent adverse impacts on the poorest by providing targeted cash transfers and other poverty-alleviation mechanisms.

At the Toronto summit held 26-27 June 2010, ministers provided a written submission to G-20 leaders, in which 13 countries outlined implementation strategies for phasing out selected fossil-fuel subsidies. The remaining seven countries (Australia, Brazil, France, Japan, Saudi Arabia, South Africa and the United Kingdom) concluded that they have no inefficient fossil-fuel subsidies.

In addition, the four inter-governmental organisations (IGO-4) submitted their report, *Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative: IEA, OPEC, OECD, World Bank Joint Report* (IEA *et al.* 2010b).

### What path should the G-20 take forward?

G-20 leaders have managed to keep the issue on the agenda for future summits and have increased transparency of the process by making the relevant documents available online. There is a risk that the G-20 process could lose momentum: the official working group that was originally established to coordinate the national strategies has not been continued beyond the Toronto summit, and the IGOs have not been mandated with further work by the G-20. Implementation of subsidy reform will be a nationally led initiative and although IGOs such as the OECD, IEA and World Bank plan to continue work in this area, it will be undertaken independently.

Given the influence that the G-20 has had in prompting other countries and organisations to join the fossil-fuel subsidy reform movement, the G-20’s role should now be seen within the bigger picture and with a longer-term view to achieving ambitious and comprehensive fossil-fuel subsidy reform, ultimately leading to a negotiated agreement.

We would hope that discussions within the G-20, as well as in the WTO, would also result in a dramatic reduction in the quarter of a billion dollars that the developed countries currently dole out to their domestic agricultural producers at the expense of developing countries, among others.

As scholars, we need to be aware that subsidies have a certain logic. While we see them as distorting the marketplace and placing needless hurdles in front of low carbon alternatives, governments see them as good politics. It is always easier to bribe voters with their own money than it is to take payments away from them. So subsidy reform can be a political minefield. But reformers take heart. The drive to reduce government expenditures, especially in northern countries, could provide an interesting opportunity to tackle the most egregious subsidies.

There are six important strategies that appear to improve the chances of lasting change:

1. **Research:** Early research to quantify the subsidy, to assess how its costs and benefits are distributed and to estimate the likely effects of its removal (both direct and indirect) helps in the drawing up of a comprehensive strategy for reform. In some cases, the findings may be perceived as having added legitimacy if the research is conducted by independent institutions or international organizations. This is also an opportunity to identify stakeholders and take into account their concerns about reform.

## 2. Establishment of reform objectives and parameters:

Fossil-fuel subsidies might be reformed for many reasons, including climate change mitigation, increase in energy efficiency or security, reduction of expenditure or compliance with international agreements such as World Trade Organization (WTO) obligations. The clear articulation of objectives helps focus the reform strategy on the highest priorities for de-subsidization and facilitates the development of appropriate support policies.

**3. Construction of a coherent reform policy:** A coherent reform policy is ideally designed with support from a broad range of stakeholders. It establishes a timeframe for implementation, includes complementary policies that offset any undesired secondary impacts (such as welfare support for the poor, programs to help industries restructure or longer-term strategies to diversify the national energy supply), develops a communications strategy to assure stakeholders that their interests are being respected, and creates mechanisms to ensure transparency regarding subsidies and the reform process.

**4. Implementation:** Reform is not easy and may require several attempts. Implementation may sometimes be postponed, or successful reforms reversed, due to dramatic changes in world fuel prices.

**5. Monitoring, evaluation and adjustment:** The best policies are those that can be adapted in light of new information. This requires a continual assessment of the underlying objectives of the policy as circumstances change. By maintaining a focus on desired outcomes, policies are more likely to be adapted in ways that support their original purposes.

**6. Forward movement:** The major challenge following successful reform is the prevention of backsliding. By making pricing decisions the function of an independent body and by automatically linking domestic and international prices, governments can reduce the pressure to become enmeshed in fuel-price issues in the future. Any reform strategy will only be as robust as the political will to uphold it, however.

Reforms to the financial markets and to the system of perverse subsidies which underpins many of our natural resource based industries will not come easily. As we have seen, many of the world's big bankers are already taking the view that the crisis has passed, so we can go back to something resembling business as usual. Subsidies have very powerful vested interests that are politically well connected to defend them. But the world is running out of time to move to a lower carbon economy. Each year we defer taking action, the climate problem becomes more and more expensive to solve. Rio+20 does offer us an opportunity to offer the world a cleaner, lower carbon economy that provides high standards of living, massive reductions of poverty and a longer term future on the planet. We should seize that.

## List of abbreviations:

EU – European Union  
IEA – International Energy Agency  
IFSL – International Financial Services London  
IISD – International Institute for Sustainable Development  
IMF – International Monetary Fund  
NGO – Non-governmental organisation  
OECD – Organisation for Economic Co-operation and Development  
OPEC – Organisation of the Petroleum Exporting Countries  
UN – United Nations  
UNEP – United Nations Environment Programme  
WCED – World Commission on Environment and Development  
WEF – World Economic Forum

## Editor's note

This article is a revised version of a paper presented at the Third International Wuppertal Colloquium on Sustainable Growth and Resource Productivity that took place on September 4-6, 2010, in Brussels and has been jointly organized by Raimund Bleischwitz (Wuppertal Institute, Germany), Paul Welfens (European Institute for International Economic Relations at the University of Wuppertal) and ZhongXiang Zhang (East-West Centre Hawaii); see also: [http://www.wupperinst.org/en/projects/proj/index.html?projekt\\_id=313&bid=138](http://www.wupperinst.org/en/projects/proj/index.html?projekt_id=313&bid=138)

## REFERENCES

- Authers, J. (2010). *Market forces*. Financial Times, FT weekend 22-23 May 2010.
- Brown, L. (2009). *Plan B 4.0: Mobilising to Save Civilization*. Earth Policy Institute. New York: W.W. Norton & Co.
- Callahan, D. (2010). *As the green economy grows, the 'dirty rich' are fading away*. Washington Post, August 8 2010.
- European Commission (2011). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A roadmap for moving to a competitive low carbon economy in 2050*. Report number COM(2011)112. URL: [http://ec.europa.eu/clima/documentation/roadmap/docs/com\\_2011\\_112\\_en.pdf](http://ec.europa.eu/clima/documentation/roadmap/docs/com_2011_112_en.pdf). Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yTgeHZa3>].
- International Energy Agency [IEA], Organisation of the Petroleum Exporting Countries [OPEC], Organisation for Economic Co-operation and Development [OECD] and World Bank (2010). Report to Leaders on the G20 Commitment to Rationalize and Phase Out Inefficient Fossil Fuel Subsidies. URL: [http://www.g20.org/Documents2010/expert/Report%20to%20Leaders\\_G20\\_Inefficient%20Fossil\\_Fuel\\_Subsidies](http://www.g20.org/Documents2010/expert/Report%20to%20Leaders_G20_Inefficient%20Fossil_Fuel_Subsidies).

pdf. Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yTlkdy9i>].

IEA, OPEC, OECD and World Bank (2010b). *Analysis of the scope of energy subsidies and suggestions for the G-20 Initiative*. Prepared for submission to the G-20 Summit Meeting Toronto (Canada), 26-27 June 2010. URL: <http://www.oecd.org/dataoecd/55/5/45575666.pdf> Accessed: 2011-05-06.

International Financial Services London [IFSL] (2008). *Fund Management 2008*. URL: [http://www.thecityuk.com/media/2205/CBS\\_Fund\\_Management\\_2008.pdf](http://www.thecityuk.com/media/2205/CBS_Fund_Management_2008.pdf). Accessed: 2011-05-06.

International Institute for Sustainable Development [IISD] (2010). *Financial stability and systemic risk: Lenses and clocks*. A joint paper by the United Nations Environment Programme Finance Initiative and the International Institute for Sustainable Development. URL: <http://www.iisd.org/publications/pub.aspx?pno=1375> Accessed: 2011-05-01. [Archived by WebCite® at <http://www.webcitation.org/5yMQY2ujb>].

International Monetary Fund [IMF] (2008). *Sovereign wealth funds – a work agenda*. URL: <http://www.imf.org/external/np/pp/eng/2008/022908.pdf>. Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yTioFq1J>].

Lang, K. (2011). *The First Year of the G-20 Commitment on Fossil-Fuel Subsidies: A commentary on lessons learned and the path forward*. For the Global Subsidies Initiative (GSI) of the International Institute for Sustainable Development (IISD) Geneva, Switzerland. URL: [http://www.globalsubsidies.org/files/assets/ffs\\_g20\\_firstyear.pdf](http://www.globalsubsidies.org/files/assets/ffs_g20_firstyear.pdf) Accessed: 2011-05-06.

Koplow, D. (2006). *"Biofuels – at what cost?"* report prepared for the GSI of the IISD. URL: [http://www.globalsubsidies.org/files/assets/pdf/Brochure\\_-\\_US\\_Report.pdf](http://www.globalsubsidies.org/files/assets/pdf/Brochure_-_US_Report.pdf). Accessed: 2011-04-23. [Archived by WebCite® at <http://www.webcitation.org/5y9qs4rFb>].

McKinsey Global Institute (2009). *Global capital markets: entering a new era*. URL: [http://www.mckinsey.com/mgi/reports/pdfs/gcm\\_sixth\\_annual\\_report/gcm\\_sixth\\_annual\\_report\\_full\\_report.pdf](http://www.mckinsey.com/mgi/reports/pdfs/gcm_sixth_annual_report/gcm_sixth_annual_report_full_report.pdf) Accessed: 2011-05-06.

Meadows, D.H. et al. (1972). *The Limits to Growth*. New York: Universe Books.

Merrill Lynch and Capgemini (2009). *World Wealth Report*. URL: <http://www.ml.com/media/113831.pdf>. Accessed: 2011-05-06.

Mims, N., M. Bell and S. Doig (2009). *Assessing the Electric Productivity Gap and the U.S. Efficiency Opportunity*. Snowmass, CO: Rocky Mountain Institute. pp. 6, 16-17.

Ministry of Finance of Republic of Indonesia (2011). Data pokok APBN 2005-2011 (Data base of national government

budget plan of 2005-2011), Ministry of Finance of Republic of Indonesia, Jakarta.

Organisation for Economic Co-operation and Development [OECD] (2010). *Interim report of the Green Growth Strategy: Implementing our commitment for a sustainable future*. Meeting of the OECD Council at ministerial level, 27-28 May 2010, OECD report number C/MIN(2010)5. URL: <http://www.oecd.org/dataoecd/42/46/45312720.pdf>. Accessed: 2011-05-06. [Archived by WebCite® at <http://www.webcitation.org/5yTg93yJq>].

Quigley, C. (2010). *The Day the Free Market Died*. Financial Sense University, 13 May, 2010. URL: <http://www.financialsensearchive.com/fsu/editorials/quigley/2010/0513.html>. Accessed: 2011-05-06.

Schmidheiny, S. et al. (1992). *Changing course: A global business perspective on development and environment*. Massachusetts Institute of Technology Press, Boston, MA.

Swiss Re (2009). *World insurance in 2008: life premiums fall in the industrialised countries – strong growth in the emerging countries*. Sigma, No. 3/2009.

United Nations Environment Programme [UNEP] (2011). *Towards a green economy: pathways towards sustainable development and poverty eradication*. URL: [http://www.unep.org/GreenEconomy/Portals/93/documents/Full\\_GER\\_screen.pdf](http://www.unep.org/GreenEconomy/Portals/93/documents/Full_GER_screen.pdf) Accessed: 2011-05-06.

World Commission on Environment and Development [WCED] (1987). *Our common future*. UN documents. Annex to document A/42/427. URL: <http://www.un-documents.net/wced-ocf.htm>. Accessed: 2011-04-29. [Archived by WebCite® at <http://www.webcitation.org/5yluRX82Q>].

World Economic Forum [WEF] (2010). *Global Risks 2010: A global risk network report*. WEF, Geneva, Switzerland.